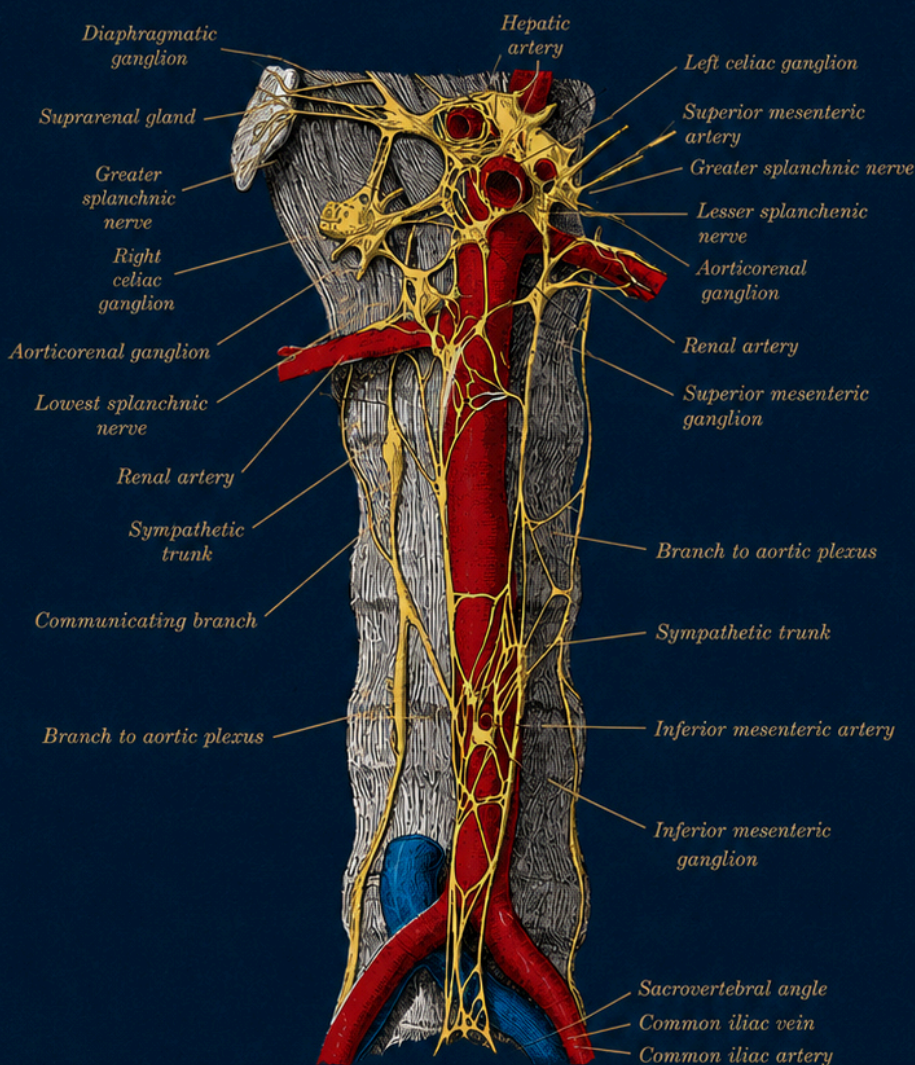


ANATOMY, PHYSIOLOGY & PATHOLOGY

IN THE EDGAR CAYCE READINGS



David McMillin

Anatomy, Physiology & Pathology

in the Edgar Cayce Readings

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DISCLAIMER: This book is directed primarily to health care professionals who are interested in the Edgar Cayce health information. This book should not be regarded as a guide to self-diagnosis or self-treatment. The cooperation of a qualified health care professional is essential if one wishes to apply the information discussed in this book.

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Introduction

Currently, there is no shortage of books on anatomy, physiology, and pathology. Even so, this text is unique in its style, content, scope, and purpose. In essence, it is an attempt to explore the integration of spirit, mind, and body in human health and illness. It is based on information derived from an altered state of consciousness by a prominent figure in modern holistic medicine — Edgar Cayce. The association of "holism" with the Cayce readings has become widely recognized, culminating in this reference from an editorial in the *Journal of the American Medical Association*:

The roots of present-day holism probably go back 100 years to the birth of Edgar Cayce in Hopkinsville, Ky. By the time he died in 1944 [sic], Cayce was well recognized as a mystic who entered sleep trances and dictated a philosophy of life and healing called "readings." His base was established at Virginia Beach, Va., now the headquarters of the Cayce Foundation. Closely associated with that foundation is the Association for Research and Enlightenment, Inc. [A.R.E.], which also runs a medical clinic under physician direction in Arizona. (Callan, 1979, p. 1156)

As Callan has noted, the designation of "holism" has come to include a wide variety of philosophies and modalities. Certainly his observation that holism has, in certain instances, become "fuzzy," "self-centered," and financially opportunistic is well taken. Since "holism" has become associated with so much that is clearly not in keeping with its origin, the term here is limited to the meaning assigned by Windsor as derived from the Cayce readings: "... Cayce saw a person as a whole, with mind, body, and spirit as a single unit, all so closely tied that it was not possible for one aspect to be

diseased, either physically or mentally, without the whole person suffering the consequences" (Windsor, 1969, p. 1).

The Life and Work of Edgar Cayce

Cayce was born on March 18, 1877, on a farm near Hopkinsville, Kentucky. His childhood was marked by paranormal experiences such as seeing and speaking to recently deceased relatives and sleeping with his head on textbooks to memorize school lessons. His abilities as a psychic diagnostician surfaced during his early twenties when he developed a gradual paralysis of the throat and medical doctors were unable to provide relief. As a last resort, he allowed a friend to hypnotize him so that he could reestablish the altered state of consciousness that he had utilized as a child to memorize his school books. From this trance state, he was able to diagnose his condition and prescribe treatments which remedied his problem.

Cayce was hesitant to use his ability to help others. He felt responsible for the information and was concerned that the suggested treatments might have deleterious effects. Consequently, many of the early beneficiaries of his services were desperate cases, often given up by medical doctors. Working within the medical establishment, in partnership with various physicians who utilized his gift, Cayce felt assured that his unusual ability would do no harm. After several years as a professional photographer and part-time psychic, Cayce became convinced of the validity of his psychic gift. In service to humanity, he devoted the rest of his life to giving readings for those who sought his help (Sugrue, 1973, Kirkpatrick, 2000).

Cayce refused to "cash in" on this ability. He preferred to offer his services on a donation basis. Consequently, many readings were provided free or for nominal donations. Cayce suffered financial

hardship for most of his life. In his own understanding of his circumstances, as reflected in several of his readings, he regarded this austerity as a karmic consequence of having misused resources in a previous life — an interpretation he apparently accepted with equanimity rather than resentment.

As an indication of Cayce's interest in providing help to persons suffering from physical illness, the bulk of the readings (over 9,600) were given in response to health issues. The remainder cover virtually every field of human endeavor, from religion and philosophy to business and international affairs. Apart from the content of Cayce's readings, the trance process itself is a fascinating aspect of Cayce's work. Harmon Bro, having completed a doctoral dissertation on Cayce, provides this glimpse into the trance procedure and the physical context of the readings:

What took place in the morning and afternoon trance sessions, in the months that followed when I heard and took notes on some six hundred of Cayce's readings, was a profound shock. Nothing could adequately prepare one for the amount of swift helpfulness that flowed from the unconscious man. His outward procedures were simple enough. Cayce sat on his plain green studio couch in his cheerful windowed study, across the room from his desk and little portable typewriter. He prayed, then lay down and step by step went unconscious. He spoke in measured address about each person or need to which his wife, sitting beside him, quietly directed his attention. After an hour or more of discourse and questions which his secretary recorded in shorthand, he came swiftly back to consciousness, remembering nothing of what he had said, and got up to resume the activities of his busy correspondence and office. It was all done in broad daylight and simplicity, as naturally as if he were still taking portraits in a photographic studio.

But the plainness of the process did not take away the jolt of seeing him accomplish day after day what our culture said was impossible. (Bro, 1990, p. 58)

Although many of the early readings were not recorded, over 14,000 were stenographically transcribed and have been preserved by the Association for Research and Enlightenment (A.R.E.) in Virginia Beach, Virginia. The transcription of readings was carried out primarily by Gladys Davis, who served as Cayce's personal secretary and stenographer for the majority of his career. Davis's intimate familiarity with the readings gave her an unparalleled understanding of their content and organization, and her early efforts to systematize the physiological and anatomical material in the readings — notably in a 1957 presentation at the A.R.E. — represent a direct antecedent to the present work. Recognizing the need for confidentiality, each reading is assigned a number corresponding to the person or group requesting information. The identifying number is followed by another number designating the sequence of the reading. For example, a reading cited as 182-6 indicates that this reading is the sixth in a series of readings for an individual or group designated as 182.

Development of This Volume

This volume represents the latest iteration of a broader Anatomy, Physiology, and Pathology (APP) project that has evolved over more than three decades. Its development reflects a progressive effort to organize and interpret the health information contained in the Edgar Cayce physical readings in a systematic and educational format.

The project began in 1995 with the creation of the *Cayce Health Database*, an early attempt to assemble the health information from

the physical readings into a comprehensive and searchable resource. In 2000, while conducting research with Meridian Institute, this work expanded into the *Cayce Comprehensive Symptom Inventory* (CCSI), which included an educational workbook module that established much of the structural framework adopted in the present volume.

In 2002, a four-hour lecture series on anatomy, physiology, and pathology was presented at the Association for Research and Enlightenment (A.R.E.). The graphical materials developed for those lectures became the conceptual predecessors of many of the illustrations appearing throughout this book.

Accordingly, the present manuscript should be understood not as a standalone publication, but as the current stage of an ongoing scholarly project. While substantially revised, expanded, and reorganized, it maintains a clear continuity with earlier efforts to present the physiological concepts contained in the Cayce readings in a coherent, systematic, and academically accessible form.

Although each stage of the project served different educational and research purposes, all shared the same central objective: to organize the anatomical, physiological, and pathological concepts embedded within the physical readings into a coherent framework that could be studied systematically. The organizational structure of the present volume reflects the culmination of that developmental process.

The Organization of This Book

Gladys Davis observed that nearly every physical reading given by Cayce was organized according to a consistent five-part structure: (1) a general description of the condition, (2) a description of the blood supply, (3) a description of the nerve system, (4) a description

of the organs, and (5) methods for relief (254-3, report). This internal structure, employed consistently across thousands of readings, has guided the organization of the present text. Chapters 2 through 4 follow this same sequence — blood, nerves, and organs — so that the book's architecture reflects the readings' own organizational logic. The pathology chapter (Chapter 5) draws on all three prior systems to examine how the readings described disease as arising from their disruption or imbalance.

A Note on Terminology and Method

Readers approaching this text from a background in modern medicine or biological science will quickly notice that Cayce's language does not always correspond to contemporary anatomical or physiological terminology. Terms such as "the nerve system," "the lacteals," "assimilation," "eliminations," and "emunctory" carry specific meanings within Cayce's framework that may differ — sometimes substantially — from their modern equivalents, where equivalents exist at all. This text preserves the readings' original terminology throughout and quotes the readings directly and exactly. Where modern anatomical or physiological knowledge may help clarify what the readings appear to have meant, such interpretive context is offered explicitly and labeled as such (for example, under subheadings such as "Modern Context"). This interpretive scaffolding is offered as an aid to understanding, not as a standard against which the readings are measured. Where a concept from the readings has no clear modern equivalent, that ambiguity is acknowledged plainly rather than resolved by a forced correspondence.

The readings are treated throughout as the primary source of information. Modern medical science serves as a secondary and interpretive tool. This approach is not a concession to uncritical

acceptance; it is a deliberate methodological choice appropriate to the nature of the material. The readings were produced under conditions unlike any other source in the medical or scientific literature, and they deserve to be understood on their own terms before being evaluated against any external standard.

The Purpose of This Book

This text is intended to serve as a bridge between the mainstream medical literature and the Cayce readings health information. The intended audience is professional — academics, researchers, and clinicians in various health-related fields. Individuals who are open to alternative perspectives on health and healing and perhaps even interested in the readings should find the text informative, without having to ignore or jettison the mainstream medical literature. In particular, researchers may find the readings to be a rich source of fresh ideas and testable hypotheses that relate to current challenges and limitations of a purely reductionistic, materialistic paradigm so prevalent in modern medicine.

Secondarily, this text may also serve as a pedagogical resource — a teaching tool for those who already have a strong connection with the readings but find the material challenging (due to various factors that are discussed in the first chapter). The organization and content of chapters 2 through 4 follow the pattern of a typical Cayce health reading, with explanations of key terms, concepts, and historical context to make the readings feel more familiar and accessible.

One additional editorial comment on the composition of the text: I have included abundant examples of text quoted from the readings. I do not want the interpretation of the readings constrained to my limitations. By providing abundant excerpts, readers can judge for themselves and determine the validity of the information. In other words, the readings can speak for themselves.

A note on attribution is appropriate here, and applies throughout this text. The content of the physical readings was produced through an altered state of consciousness from which Edgar Cayce woke with no memory of what had been spoken. The readings are therefore not the personal statements of the man Edgar Cayce and are not attributed to him as such throughout this work. References to the content of the readings in this text consistently use formulations such as "the readings indicate," "the readings describe," or simply "the readings" — identifying the textual source rather than the conscious individual. Edgar Cayce the man is referenced by name only in biographical and historical contexts. This distinction is epistemologically significant and is maintained throughout this text.

Finally, a word about the bridge metaphor itself. Any bridge between the readings and the medical literature is, by necessity, provisional. The readings are a fixed primary source; the medical literature is not. Science advances, paradigms shift, and what is understood today about circulation, neurophysiology, or endocrinology may be substantially revised in future decades. This text represents the best bridge that can be constructed at this point in time, with the understanding that future scholars may need to remodel, repair, or replace it as the medical literature evolves. The readings themselves will remain available to be reinterpreted in light of whatever new frameworks emerge. That is, perhaps, as it should be — for the readings were not given to confirm what was already known, but to point toward what had not yet been understood.

Chapter 1: Background

1.1 Overview

The Edgar Cayce physical readings constitute one of the most unusual bodies of health-related literature in the history of American medicine. Produced through an altered state of consciousness over a period of more than four decades at the beginning of the twentieth century, the readings address the full spectrum of human illness across more than 9,600 individual sessions. They are not the product of conscious deliberation or formal medical training. Edgar Cayce, the man through whom they were produced, woke from each trance session with no memory of what had been spoken. For this reason, the content of the readings is consistently attributed throughout this text to "the readings" as a distinct body of information rather than to Edgar Cayce as their personal author — a distinction that is not merely stylistic but epistemologically significant, and one that is explained in the Introduction.

This chapter provides foundational background for the study of the physical readings. It is organized around three topics, each of which addresses a different dimension of what makes the readings accessible — and at times challenging — for the modern reader.

The **first topic** is historical context (Section 1.2). The readings were produced during a period of remarkable plurality in American health care — an era in which osteopathy, hydrotherapy, electrotherapy, herbal medicine, and dietetics coexisted alongside the emerging framework of scientific medicine. Understanding this environment is not merely background, it is essential for accurate interpretation. The Cayce readings' flexible and diverse approach to

diagnosis and treatment was not at all unusual in historical context. "Eclectic physicians selected from all systems whatever appeared useful and rejected what experience failed to justify" (Haller, 1994, p. xiii).

Whorton similarly describes the broader therapeutic culture of the period as one characterized by medical pluralism: "Alternative medicine in America was historically less an organized opposition to orthodox medicine than a diverse collection of healing systems emphasizing natural therapeutics and constitutional health" (Whorton, 2002, p. 6).

As noted by Johnson (1998) in his excellent scholarly treatise *Edgar Cayce in Context*: "The holistic health guidelines found in the readings fit more fully into the holistic, eclectic approach..." (p. 34). Johnson portrays the Cayce readings as products of an intellectually and therapeutically eclectic environment in which multiple streams of influence converged, including osteopathy, New Thought, holistic therapeutics, esoteric philosophy, and natural healing traditions. He argues that Cayce's "vocabulary and concepts clearly reflect the influences of the sources from which he drew" (p. 22).

Thus the readings engaged the medical knowledge of their time with considerable precision, employing its terminology and, in many cases, reflecting its theoretical frameworks. Terms and concepts that may appear obscure or archaic to a modern reader were, in large measure, the accepted and exact language of anatomy, physiology, and therapeutics in the late nineteenth and early twentieth centuries. Several primary source collections — including the Early American series compiled by this author — provide the documentary foundation for contextualizing the readings within their historical moment. Among the most important individual reference works is *Gray's Anatomy*, which the readings themselves explicitly

recommend as a study resource and which provides, in its early twentieth-century editions, the period-specific anatomical and neurological definitions that are essential for understanding much of what the readings describe.

The **second topic** is the structure and evolution of the physical readings themselves (Section 1.3). The physical readings are not a uniform body of material. They evolved over three recognizable periods — Early, Middle, and Late — each with its own characteristic style, length, and degree of organization. The most structurally developed readings belong to the Middle Period (1922–1943), in which the readings settled into a consistent format: a preamble, followed by discussions of the blood supply, the nerve system, and the organs, concluding with a treatment plan and a question-and-answer exchange. This internal structure — identified by Gladys Davis Turner, Cayce's personal secretary and the primary stenographer of the readings, in a 1957 presentation — is not incidental. It reflects the readings' own understanding of how the body is organized and how illness develops within it, and it has directly informed the organization of the present text. The later period readings (1943–1945), produced under the pressure of an enormous increase in demand following Edgar Cayce's national fame, are more condensed in format but often more immediately accessible by virtue of their brevity and focus.

The **third topic** is a detailed examination of the preamble — the opening section of a typical physical reading (Section 1.4). The preamble is the point of entry into the readings' clinical content. Understanding its structure and functions is essential preparation for the substantive chapters that follow. Analysis of the preamble across a large sample of the physical readings reveals that it consistently performs up to seven distinct functions: acknowledging

and orienting to the body; identifying the primary seat and nature of the condition; tracing causal relationships across body systems; previewing the reading to follow; providing historical context for the development of the condition; offering a conditional prognosis; and introducing psychological or mental-spiritual dimensions when relevant. The preamble is therefore not a formal preliminary but an active diagnostic and organizing instrument — one that often contains in compressed form everything the full reading subsequently elaborates in detail.

Taken together, these three topics address the principal barriers to productive engagement with the physical readings: unfamiliarity with their historical and medical context, uncertainty about their structure and organization, and difficulty navigating their opening sections. A reader who understands what the readings were speaking to in their own time, how they are organized, and what the opening preamble is doing will be far better prepared to engage with the substantive anatomical, physiological, and pathological content that begins in Chapter 2.

One theme runs beneath all three topics and deserves to be named explicitly here. The physical readings consistently present the human body as a unified whole — physical, mental, and spiritual dimensions understood as interdependent aspects of a single living reality. This holistic orientation is not a peripheral feature of the readings but their central organizing principle. Organs do not function in isolation; illnesses arise from complex patterns of causation; treatment plans are not limited to only one dimension of the person. The readings return to this principle repeatedly, across every system and condition they address. It is, in a sense, the basso continuo of the entire approach — the constant structural foundation beneath the extraordinary diversity of clinical detail.

Everything in the chapters that follow should be read with this principle in mind.

1.2 The Cayce Readings in Historical Context

Overview

The Edgar Cayce physical readings were produced during a period of remarkable ferment in American health care — roughly the final decade of the nineteenth century through the first half of the twentieth. This was an era in which the foundations of modern scientific medicine were being laid, but had not yet achieved the institutional dominance they now hold. Competing systems of healing — osteopathy, chiropractic, hydrotherapy, electrotherapy, herbal medicine, and various approaches to dietetics and nutrition — were practiced widely, taken seriously by large portions of the public and the medical profession, and supported by a substantial body of literature. The readings emerged from and spoke directly to this pluralistic medical environment. Understanding that environment is essential for interpreting the readings accurately.

1.2.1 The Readings and Contemporary Medical Knowledge

One of the most important and frequently overlooked facts about the physical readings is that their anatomical, physiological, and pathological content was, in large measure, consistent with the accepted medical knowledge of the era in which they were given. The readings did not speak in opposition to the mainstream medicine of their time — they engaged it, employed its terminology, and in many instances reflected it with considerable precision. Where the readings diverged from contemporary medical opinion, the divergence was meaningful rather than arbitrary, and in some cases anticipated developments that only later gained scientific recognition.

This historical alignment has significant implications for the study of the readings. It means that the terminology of the physical readings cannot be evaluated against the standard of current medical vocabulary — a standard that simply did not exist when the readings were given. Terms and concepts that may appear antiquated or imprecise by contemporary standards were, in many cases, the accepted and exact language of anatomy, physiology, and therapeutics in the late nineteenth and early twentieth centuries. The readings should be understood within their own historical moment before any comparative assessment with modern medicine is attempted.

To support this contextual understanding, the author has researched and compiled a series of anthologies drawing on primary medical sources from the period in which the readings were produced. These resources — freely available at www.mcmillinmedia.com — include:

- *Early American Manual Therapy*
- *Early American Energy Medicine*
- *Early American Dietetics and Nutrition*
- *Early American Hydrotherapy*
- *Early American Herbal Medicine*

These collections provide the documentary foundation for understanding what the readings meant when they employed the medical language of their time, and serve as essential reference resources throughout this text.

1.2.2 Key Reference Works

Gray's Anatomy. *Gray's Anatomy*, the definitive English-language atlas of human anatomy, was in wide use throughout the period of the readings. Significantly, *Gray's Anatomy* is cited directly in the Cayce readings, confirming the readings' engagement with the mainstream anatomical literature of the era. For readers seeking to

situate the readings' anatomical language in its historical context, editions of *Gray's Anatomy* from approximately 1900 remain available and are particularly valuable. The terminology used in those editions corresponds closely to the language of the physical readings and is often more illuminating than a modern anatomical reference.

Osteopathic Medical Literature. Andrew Taylor Still founded osteopathic medicine in the 1870s, and by the time the Cayce readings began in earnest in the early twentieth century, osteopathy was an established and widely practiced healing system with its own schools, journals, and clinical literature. The readings drew extensively on osteopathic concepts — particularly the understanding of spinal mechanics, nerve supply, and the relationship between structural integrity and organ function. Traditional osteopathic texts from the late nineteenth and early twentieth centuries are therefore among the most useful resources for interpreting the clinical content of the physical readings.

1.2.3 Traditional Osteopathy and the Readings

Of the various healing traditions contemporary with the readings, osteopathic medicine has the most direct and pervasive relevance. The readings recommended osteopathic treatment — referred to variously as "osteopathic corrections," "spinal adjustments," or "manipulations" — with striking frequency across the physical readings. This was not a casual or incidental relationship. The readings appear to have found in traditional osteopathy a therapeutic system whose underlying physiological principles — particularly regarding the nerve supply to the organs and the role of spinal lesions in producing systemic disease — were broadly consistent with their own anatomical and pathological framework.

It is important to note, however, that the osteopathy referenced in the readings is the osteopathy of Still and his immediate successors — a system quite different from the osteopathic medicine practiced in many contemporary clinical settings, which has in large measure been absorbed into mainstream medical practice. The traditional osteopathic understanding of the spine as the primary structural mediator of health and disease, and of the nervous system as the primary channel through which spinal dysfunction produces its effects throughout the body, is the framework within which the readings' therapeutic recommendations make their fullest sense. The *Early American Manual Therapy* collection referenced above provides primary source documentation for this tradition.

1.2.4 Energy Medicine and the Readings

The late nineteenth and early twentieth centuries were what might fairly be called a golden age of American energy medicine. Electrotherapy — the therapeutic application of electrical currents and electromagnetic fields — was practiced widely, discussed extensively in the medical literature, and offered in hospitals and clinics across the country. Devices such as the violet ray, dry and wet cell batteries, and various forms of galvanic and faradic apparatus were in common clinical use. Thus electrical appliances were frequently recommended in the physical readings — including devices such as the Radio-Active Appliance (also called the Impedance Device and Radial Appliance) and the Wet Cell Battery that the readings described in considerable technical detail.

This therapeutic tradition has largely disappeared from mainstream medicine, though it has persisted in various alternative and complementary health contexts. Understanding it is essential for readers who encounter electrotherapeutic recommendations in the physical readings, as the readings' descriptions of how such devices

function physiologically are grounded in the theoretical framework of early American energy medicine rather than that of modern bioelectrical science. The *Early American Energy Medicine* collection documents this tradition comprehensively.

1.2.5 Hydrotherapy, Dietetics, and the Spa Movement

Hydrotherapy — the therapeutic use of water in various forms, temperatures, and applications — was among the most widely practiced healing modalities of the late nineteenth and early twentieth centuries, supported by an extensive clinical literature and institutionalized in sanitariums and health resorts across Europe and America. The most influential figure in American hydrotherapy during this period was John Harvey Kellogg, whose sanitarium at Battle Creek, Michigan became internationally famous as a center for water-based, dietary, and physical therapies. Kellogg's approach integrated hydrotherapy with dietetics, exercise, and what might be called biological living — a vision of health that bore significant resemblance to the holistic therapeutic orientation of the Cayce readings.

The connection between the Kellogg tradition and the readings was made explicit in the career of Harold J. Reilly, a physiotherapist who became one of the most prominent practitioners of the approach recommended in the readings. Reilly had trained in the spa tradition that descended from Kellogg's work, and subsequently integrated that hydrotherapeutic foundation with the physiological principles he derived from the physical readings. The result was what Reilly called the C.A.R.E. model (circulation, assimilation, relaxation, elimination) — an approach to therapeutic bodywork and health maintenance that blended the practical techniques of the spa tradition with the anatomical and physiological framework of the Cayce readings. Reilly's work represents one of the clearest

examples of how the readings' health information was applied in a clinical context grounded in the medical culture of its time.

Similarly, dietetics and nutrition as practiced in the era of the readings reflected a set of assumptions and a body of clinical knowledge that has since been substantially revised. The nutritional recommendations in the physical readings — concerning food combinations, acid-alkaline balance, the role of vitamins and minerals, and the relationship between diet and elimination — should be understood in the context of early American dietetics rather than evaluated against current nutritional science. The *Early American Dietetics and Nutrition* and *Early American Hydrotherapy* collections provide the relevant primary source documentation.

1.2.6 Chronology and the Evolution of Therapeutic Recommendations

One additional historical consideration deserves attention: the readings were not produced in a single moment but over a period of more than four decades, from approximately 1901 through January 1945. Medical knowledge evolved during that period, and the readings appear to have evolved with it in certain respects. Therapeutic recommendations for some conditions changed across time — reflecting, it appears, the changing state of available treatments rather than any inconsistency in the underlying physiological framework. Researchers working with the readings on any specific condition should therefore attend carefully to the dates of the readings being examined, as recommendations given in the 1920s may differ from those given for similar conditions in the early 1940s.

A particularly instructive example of this chronological sensitivity involves the readings' treatment of the vagus nerve — known in the readings' terminology as the pneumogastric nerve — and its

relationship to various systemic conditions. The way this nerve's role is described and the therapeutic approaches recommended in relation to it show discernible variation across the periods of the readings, providing a useful case study in how temporal context can affect interpretation. This topic is examined in detail in Chapter 3 (Nerves). A lecture titled "Chronology in the Physical Readings" was given at the A.R.E. by David McMillin (2010). A video of this presentation addresses the relevance of chronology in the readings and is available for viewing on the Internet (www.mcmillinmedia.com).

1.3 A Typical Physical Reading

Edgar Cayce gave over 9,600 *physical* readings for persons suffering from the full spectrum of disease. Although this vast body of information has tremendous potential as a resource for research, clinical application, and home health, many people are unaware of this resource. Even individuals who strongly believe in the value of the Cayce physical readings often avoid studying this material because the style and content of the readings can be difficult.

The following basic background information should be helpful in making the *physical* readings more user friendly:

- EVOLUTION OF STYLE - The style and content of the Cayce *physical* readings changed over time. In other words they evolved, and in many respects became more sophisticated over the years. Recognizing this developmental process makes it easier to understand the physical readings. In general, the evolution of the physical readings can be organized in three stages:
 - In the EARLY PERIOD (before 1922) *physical* readings were very loosely organized. Edgar Cayce relied heavily on

questions from the person directing the session to guide the process. The treatment recommendations in these early readings were sometimes extremely vague. The readings often ended abruptly. During this phase, Edgar Cayce had not committed fully to the career of psychic diagnostician, relying heavily on his skills as a photographer to earn a living.

- During the MIDDLE PERIOD (from 1922 until Edgar Cayce became nationally famous in 1943) the *physical* readings have a standard form and style with clearly organized sections. Edgar Cayce adopted the career of medical intuitive in October of 1922. In 1921 he gave 61 physical readings as compared to 239 in 1922, most of which were given in the last three months of that year. The readings of the middle period are often fairly long with abundant detail. The general form of these readings (and particularly the first reading in a series for an individual) tend to follow this format:

- Introductory Overview
- Blood Supply
- Nervous Systems
- Organs
- Treatment Plan
- Question and Answer

Subsequent follow-up readings for the individual tended to be more free-form, focusing on specific areas requiring special attention or changes to the treatment plan.

- Readings from the LATE PERIOD (1943 - 1944) were much more condensed in format because Edgar Cayce often gave several readings during each trance session. In 1942 he gave 390 physical readings as compared to 761 physical readings in 1943. In 1943 he had become nationally famous with the publication of his biography and an article in *Coronet* magazine. He was deluged with requests from suffering individuals. Therefore, the format of the later readings is very condensed and focused on briefly identifying the cause and treatment for each person in as few words as possible. The advantage of these late readings is that they are often easy to understand because of their brevity and focus. However, the readings contain less physiological detail than in the earlier periods.
- VARIETY OF TYPES OF READINGS - Keep in mind that Edgar Cayce gave several types of readings such as "life" readings and "mental/spiritual" readings. Even within the *physical* readings, persons were given initial readings (which tended to be relatively long and structured) and follow-up readings (which were usually brief and very focused on changes in the treatment plan). So there is considerable variability in the types of readings provided by Cayce.
- LANGUAGE OF THE READINGS - Regardless of the period in which the readings were given, Edgar Cayce used the accepted medical terms and concepts of that era very accurately. If the terminology of the readings is sometimes unfamiliar and confusing, there is a reason. The readings utilized anatomical, physiological, and therapeutic language from late 19th and early 20th century medicine (especially with regard to osteopathy). Since medical language has

changed, many of the terms used in the readings are now considered "out of date." An old medical dictionary or atlas (such as Gray's Anatomy circa 1900 - which is still available at many bookstores) can be very useful for understanding the language of the readings.

- ORGANIZATION - Also, the way the readings were recorded makes a big difference. Gladys Davis Turner, Edgar Cayce's personal secretary who recorded the readings during the middle and later periods of Cayce's career, seemed to do a particularly good job at organizing the readings into clear sections. This makes for more visual clarity when looking at a reading. Perhaps these changes in organization were also part of the more general evolution in the style of the physical readings.

Gladys Davis Turner, Edgar Cayce's personal secretary (and stenographer for most of the readings) gave a talk titled "The Body Is The Temple" in April, 1957. The presentation was subsequently published in *The Searchlight* (254-3, report) and is included in the Report section of reading 254-3. Davis' talk and article serve as a resource, prototype, and inspiration for this entire manuscript.

1.4 The Preamble of a Typical Physical Reading

Overview

A typical physical reading begins with what may be called the **preamble** — the opening statement produced immediately following the hypnotic suggestion provided by the conductor of the reading. Gladys Davis Turner, who transcribed the majority of the physical readings, described this section as "a general description of the condition to be met by that body" (254-3, report). That phrase is accurate but unwieldy for repeated use. The term *preamble* is

adopted here as a working label, with the understanding that it designates a functionally defined section of the reading rather than a merely introductory one. As will become clear, the preamble is often substantively diagnostic from its first sentence.

The preamble is typically recorded in the transcripts as the second numbered paragraph, designated "2. EC:" — indicating Edgar Cayce's response from the trance state — following the first paragraph, which contains the hypnotic suggestion. This structural convention, established by Davis and consistently maintained throughout the middle and later periods of the readings, makes the preamble readily identifiable.

The Hypnotic Suggestion and the Trance Response

Each physical reading was initiated by a standardized hypnotic suggestion, typically delivered by Gertrude Cayce. Although the exact wording varied somewhat in the early period, it became largely standardized during the middle period with a simple instruction to examine the body, identify conditions and causes, and provide a treatment plan. The reading would not proceed without this suggestion, which served to orient the trance state toward a specific body and purpose.

The trance response to this suggestion constituted the opening of the reading. In the simplest cases — most commonly in follow-up readings where the body and its condition were already known — the response was a brief acknowledgment:

Yes, we have the body here. We have had this before,
you see. (9-5)

Such minimal preambles are characteristic of follow-up readings rather than initial readings. They confirm that the trance state had oriented to the subject and was ready to proceed, but offered no new

clinical content. The substantive preamble, by contrast, belongs primarily to first readings in a series, where the readings approached the body freshly and typically provided the most complete and organized account of the condition.

It is worth noting the consistent use of the first-person plural — "we have the body," "we find" — throughout the readings. This plural voice is distinctive and may reflect the nature of the trance state itself, in which the source of information was understood as extending beyond the individual personality of Edgar Cayce. The readings themselves, when asked about the source of the information provided, described a collaborative process drawing on multiple levels of consciousness (294-1). A video presentation by McMillin (2011) titled "Edgar Cayce's Psychic Process" is available online (mcmillinmedia.com) for anyone interested in this aspect of the Cayce readings.

Functions of the Preamble

Analysis of the preamble across the physical readings reveals that it is not a uniform or formulaic unit. Its length ranges from a single brief sentence to several paragraphs of dense clinical description. What is consistent, however, is its functional logic. The preamble typically performs one or more of the following functions, which are discussed in turn below: (1) acknowledgment and orientation; (2) identification of the primary seat and nature of the condition; (3) causal tracing across body systems; (4) preview of the reading to follow; (5) historical context; (6) prognosis; and (7) psychological and mental-spiritual dimensions.

In a given reading, not all of these functions will be present, and they do not always appear in a fixed sequence. The readings sometimes move immediately into a detailed causal chain without formal orientation; at other times the preamble consists almost entirely of a

single functional element. The experienced reader of the physical readings will learn to recognize these functions as they appear in varying combinations.

Acknowledgment and Orientation

The most consistent feature of the preamble across all periods is some form of acknowledgment that the body has been located and that the reading is prepared to proceed. In the fuller preambles, this acknowledgment is typically followed immediately by a transition into clinical content. Reading 13-1 is a concise example of how the acknowledgment flows directly into an orienting survey:

Yes, we have the body here. Now the abnormal condition as we find in this body has to do with the functioning of organs within the body, and the effect that it has produced over the system in a general way, also with the blood supply, and the circulation of the lymph with the circulation in the portions of the body. (13-1)

In a single sentence following the acknowledgment, the readings have identified the primary locus of disturbance (organ functioning), noted its systemic effects, and named two of the specific channels — blood supply and lymph circulation — through which those effects are expressed. This compression of orienting information into the preamble is characteristic of the middle-period readings at their most efficient.

Identification of the Primary Condition

One of the preamble's most important functions is to identify the primary seat or nature of the condition — distinguishing, for example, between functional and organic disturbance, or between conditions of long standing and those more recent in origin. This

identification often establishes the interpretive framework for everything that follows in the reading.

Reading 4463-1 provides a particularly clear example of this function. The preamble immediately distinguishes between cause and effect, and between functional and organic pathology:

Yes, we have the body here. Now, the abnormal conditions as we find in this body are principally those of functioning conditions rather than organic. They have to do with the circulation, the nerve force, the intestinal tract, and was begun principally from indigestion that has affected the system and has become the seat of the troubles, and the others, we find, are mostly reflex, though there are at present other organs involved, that at present does not come directly from these conditions, or that is the digestive forces. (4463-1)

The distinction between *functioning* and *organic* conditions — one the readings drew repeatedly — is significant. A functional condition, in the readings' usage, implies a disturbance in how an organ or system performs its activity, without necessarily implying structural damage to the organ itself. An organic condition implies a more fundamental structural involvement. This distinction has direct implications for the treatment plan that follows and for the prognosis.

Causal Tracing Across Systems

Perhaps the most diagnostically distinctive feature of the preamble is the construction of a causal chain — tracing how a disturbance in one system produces effects in others. This reflects the fundamentally systemic conception of physiology that pervades the readings, in which no organ or system functions in isolation. Reading 3944-1 illustrates this causal logic in compact form:

You see, this body has suffered from an infection. This re-infection has produced the condition that we have in this body. Also, many complex conditions in the system of the physical body. This re-infected condition first produced the trouble that we have in the body. This effected the pelvis and intestines. That, along with the functional condition, produced a change in the circulation and the blood, which has produced, as a result, an exaggerated condition of other organs in the body. As we have the condition now, the circulation as well as the nervous system of this body, is effected. (3944-1)

The progression here — from initial infection, to involvement of the pelvis and intestines, to circulatory and blood changes, to secondary effects on other organs and the nervous system — exemplifies the kind of causal architecture the readings construct in the preamble and elaborate in the sections that follow.

Reading 4370-1 shows this same logic with even greater anatomical specificity, tracing a condition originating in the emunctory system through the pneumogastric and hypogastric plexuses, into the blood supply, the lacteal ducts, the mesenteric system, and finally into the alimentary canal — a causal chain spanning multiple anatomical regions and physiological systems:

Now, we find there are some abnormal conditions with this body. These, as we see, are produced from conditions that have existed in the body from times back, when there was an ailment to the body that affected the system in the way of the emunctory functioning of the system, causing a condition in the plexus of the pneumogastric and hypogastric plexuses that affect the blood supply in system in a way as to cause the condition as is produced in the deficiencies of the blood stream. Hence the dull achey, bearing down pains that

existed in times back in right portion of body, just below liver, in and around the lacteal ducts. The effects, then, as are created in the system from this condition bring about those conditions that the body should be relieved of, that the system might function the more normal, for as we see, this reduces the vibratory forces and action of the system through all of the mesenteric system, producing the condition as we have in the alimentary canal proper, in the end of same, where the distresses are caused at times in the portion of body and where the effect of the toxins form in system, producing the neurotic condition to the body. (4370-1)

This reading also introduces several terms — emunctory, pneumogastric plexus, hypogastric plexus, lacteal ducts, mesenteric system — that are central to the readings' physiological vocabulary and will be examined in detail in subsequent chapters.

Preview of the Reading to Follow

In many preambles, the readings provide what may be called a thumbnail sketch — a brief survey of the systems to be discussed in order to orient the listener to the scope of what would follow. Reading 4694-1 offers an especially clear example of this preview function, naming in a single paragraph the full range of eliminative channels the reading would address:

We have some abnormal conditions of the body through its physical forces, as in this blood supply to the organism of the physical man. We also have some degenerated condition of the mental forces here, in the nerve supply to the body. This state of the man, or the trouble in the body has begun, and has been of long standing, until we have the condition of the body that we have at present, now. This affects the whole body, producing the conditions that exist, that bring in contact

more or less all the organism of the physical body and its attributes here. That is, the circulation, the digestion, or the making of the new blood for the body, then the eliminating of the wasted matter from the system, both from the used forces in muscular and nerve tissue, — that is eliminated by the liver — and the waste portions of the body or that which is eliminated through the dross, through the respiratory system, through the lymphatics or pores of the skin, by perspiration or sweat from the body, and through the kidneys, until we bring all of those systems in the body out of the normal condition. (4694-1)

This passage is also notable as a concise summary of the readings' eliminative physiology — naming the liver, respiratory system, lymphatics, skin, and kidneys as parallel channels through which the body clears waste material. The preamble here functions simultaneously as a preview of the specific reading and a miniature statement of the broader physiological framework that the readings consistently apply.

Historical Context

Just as a physician takes a history before examining a patient, the readings frequently situate the current condition within its developmental history — identifying when a problem began, what precipitated it, and how it had evolved over time. Notably, rather than *taking* a history from the patient, the readings typically *give* one, providing chronological information that the patient may not have consciously known or connected to their present condition. The expression "in times back" is used in a number of readings to signal this retrospective orientation (e.g., 4608-1, 4370-1). Reading 133-1 illustrates this historical orientation in the preamble:

Now, we find there are abnormal conditions with this body. Many of these have been and are of long standing. They have to do, from the beginning, with the eliminations and the excesses as are become as drosses in portions of the system, producing the conditions in the extremities and in the locomotaries, and in various muscular portions of the body. (133-1)

The phrase "from the beginning" suggests that the readings are identifying a constitutional or longstanding pattern rather than an acute disturbance — a distinction with significant implications for treatment. The term "drosses," used here and in numerous other readings, refers to waste products or impurities that have accumulated in the system due to inadequate elimination. This concept is central to the readings' pathological framework and is discussed at length in Chapter 5.

Reading 20-1 introduces a further dimension of historical context — the role of prenatal conditions in the genesis of physical illness:

Now, we find the conditions in this body abnormal are of a specific nature, and have to do with the functioning of the sensory organism. These conditions as we find in this body have been brought about, some by prenatal inclination from self, others by the action of physical conditions in body that have produced in the eliminating system those conditions that prevent the proper functioning. Hence the condition as has come about in the functioning of eyes themselves, see? This inflammation, this growth, as we find, is produced by this improper elimination, as is seen in present time. (20-1)

The attribution of part of the causation to "prenatal inclination from self" is a striking concept that appears in a number of readings and reflects the broader view expressed throughout the readings

concerning the relationship between soul history and physical constitution — a topic touched upon in the Psychology subsection below and addressed further in the context of karma and heredity in Chapter 5.

Prognosis

The readings frequently include a provisional prognosis in the preamble, often framed conditionally — as an assessment of what could be achieved if the recommended treatments were followed. These prognostic statements range from encouraging to sobering, and occasionally carry explicit warnings about what might occur if conditions went uncorrected. Reading 85-1 offers a characteristically measured prognostic statement:

Now we find in many respects the body is very good.
There are those specific abnormal conditions that affect the system, and these may be corrected with assistance and care and attention to those conditions that produce same, are the suggestions as given but carried out in whole and not just in part. (85-1)

The phrase "carried out in whole and not just in part" is a recurring theme in the readings' prognostic statements and reflects the view that partial compliance with a treatment plan could undermine therapeutic progress — because partial treatment might relieve symptoms without addressing causes, encouraging premature discontinuation of effort. Reading 137-1 elaborates this principle:

Now we have in this body some conditions that are abnormal that may be corrected. We have some conditions that to the body have become normal. Now the conditions that may be corrected, the correction and the manner in which they are to be corrected, the manner of living, the manner of exertion, the kind of exertion, the kind of expended energy, the strain under

which the energy is expended and the character and nature of conditions must all be taken into consideration, for the time, the manner, the way, the mode, in which the correction would be made and under what circumstances and conditions applied to same. (137-1)

The distinction drawn here — between conditions that *may* be corrected and conditions that have become so established as to be "normal" for the body — is clinically significant and reflects a realistic assessment of the limits of therapeutic intervention, one that recurs throughout the physical readings.

Psychological and Mental-Spiritual Dimensions

When psychological or mental-spiritual factors were relevant to the condition, the readings typically introduced them in the preamble. The range of psychological content was broad, spanning acute emotional disturbances, habitual mental attitudes, and what the readings described as karmic or soul-level influences. Reading 147-29 illustrates the most direct form of this observation — a terse, definitive statement linking a mental habit to a physical consequence:

Yes, we have had this body here before. We find that the body overtaxes self through worry more than that being applied in the system can equalize, without accentuating the nerve conditions in the system. (147-29)

The physiological specificity of this statement is characteristic of the readings' psychosomatic perspective. Worry is described not merely as harmful in a general sense but as producing a specific effect that the nervous system cannot compensate for. The mind is understood in the readings not as metaphorically connected to the body but as directly operative upon it through the nerve system — a principle explored in depth in Chapter 3.

Reading 5529-1 presents a more elaborate example, in which a neurasthenic condition (literally nerve exhaustion) is traced simultaneously through mental worry, liver function, kidney function, blood composition, lymphatic circulation, splenic activity, and finally the skin — a comprehensive multi-system portrait that integrates psychological and somatic dimensions without separating them:

She is a neurasthenic. It affects her in a very peculiar way, especially to the expression or impression it makes through the sensory system, or the sensory organism in the system of the body. It affects her through the mental — a great deal of mental worry — and action on to the thought and expressions of thought themselves, and from the condition of the liver in itself, in its power of eliminating the used forces. The secretions are very good; the excretions not so good. Of course, it affects it through the same forces, through that of the nervous force, through the opposite pole of the kidneys. We have a lack of red blood, — hemoglobin — in the blood. More of the white, as shown from the color of the skin, the exterior portions, as in anemic patients, we have this only showing itself, in the expression through that of the lymphatic circulation, expression and suppression through the force of capillary circulation in the body. Pains to the head at times, through the forces, or lack of the force to eliminate through that of the power of the splenic force, on action to the brain proper. There is a general debility. Sick all over. (5529-1)

This preamble merits sustained attention. The diagnosis — neurasthenia — is offered without hedging or qualification in the opening sentence. The phrase "opposite pole of the kidneys" reflects the readings' conception of the liver and kidneys as paired eliminative organs operating in dynamic tension, a concept

examined in Chapter 4. The distinction between secretions (described as "very good") and excretions ("not so good") points to a functional rather than organic disturbance in hepatic activity. And the sequence of effects — from mental worry, through the liver, to the kidneys, blood, lymph, spleen, and skin — demonstrates the systemic propagation of a condition that begins in the mental-emotional sphere and expresses itself throughout the physical body, precisely as the readings consistently describe.

The Preamble and the Structure of the Physical Reading

The preamble's content and length vary considerably, but its relationship to the reading as a whole is consistent. It functions as the entry point into what the readings call "the conditions" — a term used to denote the full complex of causes, effects, and systemic relationships that constitute a person's state of health at a given moment. The sections that follow the preamble — blood supply, nerve system, organs, and treatment plan — elaborate what the preamble introduces. In the best examples, the preamble contains in compressed form everything that the full reading unfolds in detail: the primary cause, the pattern of systemic effects, the prognosis, and the orienting framework for the therapeutic recommendations. For this reason, the preamble deserves to be read carefully rather than passed over as a formal preliminary. In many readings, understanding the preamble is essential to understanding what follows.

Chapter 2: The Blood Supply

2.1 Overview

Blood is fundamental to life and vitality. In a typical physical reading, the blood supply section deals with two major aspects: blood factors (sometimes simply referred to as "constituents") and the circulation of the blood (including pressure and pulse).

The readings consistently treat the blood supply not as the primary cause of disease but as its indicator. This point is stated explicitly and repeatedly across the readings and is foundational to everything that follows in this chapter. Reading 844-1 makes it directly: "the blood supply is not a cause, the effects in same indicate the sources and the causes of the disturbing conditions." Reading 108-2 calls the blood supply "that criterion through which most any condition existent in the system may be found" — a diagnostic window through which the underlying condition of the entire system becomes legible.

Reading 108-2 also provides a remarkably comprehensive account of what the blood supply does: it replenishes the body through assimilation, eliminates used energies through the appropriate channels, and maintains the coagulative forces that hold tissue together and support healing. These three functions — replenishment, elimination, and coagulation — organize much of what the readings discuss when they examine the blood supply in any individual case.

Blood factors are represented by the various categories measurable through blood analysis. The most common blood factors emphasized in the readings include:

- red blood
- white blood and coagulation
- urea
- toxicity
- basic minerals
- acid/alkaline balance (pH)
- vitamins

In addition to this microscopic analysis of the blood, the readings also consider the patterns of circulation throughout the body. Two primary circulatory patterns are identified:

- deep circulation
- superficial circulation

Either or both of these patterns can be over- or underactive. When one is overactive to the detriment of the other, a form of incoordination exists between the deep and superficial circulation — a condition that typically also involves the eliminative systems falling out of coordination, producing symptoms of systemic toxicity.

2.2 Blood Factors

2.2.1 Red Blood

Overview

Red blood — the readings' consistent term for the red blood cell component of the blood supply — is the primary replenishing and rebuilding force in the body. Where white blood is understood as the body's resistive force (described in Section 2.2.2), red blood is its nourishing and sustaining one: the element that carries vitality to the tissues, delivers the building materials necessary for cellular renewal, and maintains the body's capacity for normal energy and endurance. The readings return to this characterization across

hundreds of individual cases, making the red blood supply one of the most frequently assessed elements in the physical readings. Reading 283-2 articulates the diagnostic significance of the red blood supply with particular clarity:

... there is no condition existent in a body that the reflection of same may not be traced in the blood supply, for not only does the blood stream carry the rebuilding forces to the body, it also takes the used forces and eliminates same through their proper channels in the various portions of the system. Hence we find red blood, white blood and lymph all carried in the veins. These are only separated by the very small portions that act as builders, strainers, destroyers, or resuscitating portions of the system. (283-2)

This passage captures the readings' broader understanding, discussed in Section 2.1, that the blood supply is an indicator of the body's condition rather than its primary cause. Within that framework, the red blood component specifically reflects the body's nourishing and rebuilding capacity — and its deficiency is among the most common findings across the physical readings.

The Replenishing Function

The readings consistently define red blood through its function rather than its cellular structure. Its essential role is replenishment: delivering to the tissues the forces of renewal, nourishment, and rebuilding that sustain normal life activity. Reading 248-1 describes a healthy red blood supply in these terms: "the blood in its course and system is very good, being normal in the number of red blood corpuscles carrying sufficient of the rebuilding and replenishing forces to carry out the action of the system, both in its growth and in its development." The pairing of "rebuilding" and "replenishing" is

characteristic — red blood is not merely a transport medium but the active vehicle of the body's self-renewal.

This replenishing role places red blood in direct functional contrast to white blood. Together, they represent two inseparable physiological imperatives: the body must both nourish itself and defend itself, and the balance between red and white blood reflects, at any given moment, which imperative is dominant. This dynamic balance, and the pathological consequences of its disruption, is developed in Section 2.2.2.

Red Blood and the Hemoglobin

The readings use the term hemoglobin in broadly the same sense as modern medicine — as the substance within the red blood cells that carries the blood's essential energetic and replenishing properties. Reading 107-1 distinguishes between adequate hemoglobin and adequate red blood cellular force, noting that a body may show good hemoglobin yet be deficient in "that of the energy as is carried in red blood cellular force storing that vibration necessary to create in the body reserved energy." This is a distinctive formulation: the readings understand the red blood as carrying not merely chemical constituents but a vibratory or energetic quality that sustains the body's reserve vitality.

Reading 40-1 offers a complementary assessment of a case in which hemoglobin is good and red cell numbers sufficient, yet the white blood is overburdened — illustrating the readings' consistent attention to the relationship between red blood quality, quantity, and the broader blood balance.

Sources of Red Blood: Bone, Ribs, and the Lacteals

The readings identify several anatomical sites as primary sources of red blood cell production. Most frequently, the readings point to the

bone structures — particularly the ribs — as the region from which red blood corpuscles emerge. Reading 816-12 states directly: "the lack of the supply of calcium causes the ribs — from which much of the red blood cells emerge, of course — to produce a fullness in the pleura and the lungs." Reading 1424-1 locates the same source anatomically: "here we have the area from which the red blood cells emanate — hence the massages in the area here" — referring to the rib region. The readings' emphasis on the ribs as a site of red blood production is consistent with their understanding of the bone marrow of flat bones as a source of blood cell formation, though the readings express this in anatomical rather than histological terms.

Equally important in the readings' account of red blood production is the role of the lacteal duct system — the lymphatic capillaries of the small intestine through which assimilated nutrients enter the circulation. Reading 259-1 states this relationship explicitly: nerve impingements at the 8th and 10th dorsal "prevents the creation of the blood supply in the cell forces as is reached through the lacteal ducts, as the new blood is supplied in the system, for with the impingement, and with this prevention of the proper digestive functioning organs giving the incentives, or creation of red blood forces, we have created or brought about the condition that tends towards anemia." The chain here is specific: spinal nerve pressure → impaired lacteal function → deficient red blood production → anemia. This linkage between digestive assimilation through the lacteals and the quality of the red blood supply is a characteristic and recurring causal pathway in the physical readings.

Numerical Assessment of Red Blood

The readings occasionally provide quantitative assessments of the red blood supply with a specificity that invites comparison to modern clinical standards. Reading 1-1 gives an explicit red blood

cell count: "those of red blood numbering 36,679,000, normal, full blood flow." A physician's notation appended to this reading observes that the modern normal is approximately 5,000,000 red blood cells per cubic millimeter — a discrepancy that likely reflects different units of measurement or total volume calculations rather than a clinical disagreement.

Reading 1236-1 provides a complementary statement when asked how many red blood cells a healthy body should have: "Depends upon the weight and upon the age of the body. If we are to judge from this body here, there should be in this one about fifty-five million red blood cells." Reading 295-10 offers a precisely quantified deficit: "Ten thousand low in the red blood cells." And reading 288-33, with characteristic directness, attributes persistent hunger to a deficiency of approximately "ten million below normal in the red blood supply." These quantitative assessments, while varying in their framing, confirm that the readings understood the red blood supply as measurable and subject to clinical assessment — consistent with the blood testing practices that were becoming standard in early twentieth-century medicine.

Red Blood Deficiency: Patterns and Consequences

Deficiency of the red blood supply is one of the most common findings across the physical readings, appearing in a wide variety of clinical presentations. The readings distinguish between outright anemia — a formal condition of severely depleted red blood — and the far more common state of subnormal red blood that falls short of full clinical anemia but nonetheless produces significant physiological consequences.

Reading 49-1 describes this intermediate state: "deficient in red blood forces. Not to the extent that the body has become wholly anemic, yet such conditions exist through this portion of the

rebuilding forces." Reading 1149-1 traces the mechanism by which inflammatory conditions produce this pattern: "the attempt of the system to build that necessary through the plasm of the system's forces themselves to meet the needs of the conditions has tended to reduce the red blood, or the replenishing forces in same, and make for an excess in that plasm that is destructive to outside influences — or abnormalities in this direction." This is the red/white shift described more fully in Section 2.2.2 — in conditions of inflammation or infection, the body diverts its blood-building resources toward the resistive white blood at the expense of the replenishing red, producing a secondary red blood deficiency that is the consequence of immune activity rather than its cause.

The symptomatic consequences of red blood deficiency described across the readings are characteristic and consistent: a tired, dull feeling throughout the body; aching in the bones and joints; shortness of breath with exertion; susceptibility to cold and digestive disturbance; and a general sense of depleted vitality. Reading 129-1 captures the clinical picture: "a lack of the red blood forces themselves to meet the needs of the body, they being taken up by the usage, as it were, of the white blood force to meet resistance in cell destruction in the body, that is, deficiency in numbers of red blood forces, hence the tired, dull feeling of the body at times when all lymphatic centers are in distress, that is, each bone and joint, as it were, suffers."

Reading 272-1 links the red blood deficiency directly to pulmonary symptoms: "with the lowness of the red blood supply makes for the tendency to get short breath, and to find that at times there is a feeling of hot and cold flushes from the activity in the organ itself." And reading 4466-1 describes the characteristic circulatory consequence in the extremities: insufficient red blood cellular forces

means insufficient stored energy "to always supply the hurry cells, as it were, to certain portions of the body, so that we find at times the circulation becomes impaired as it were, or there is produced through the capillaries that tingling, deadened sensation, especially is this to the extremities."

The Blood as Mirror: Variability and the Diagnostic Challenge

One of the most clinically important observations about red blood in the readings is the recognition that red blood cell counts are not stable but fluctuate — sometimes dramatically — across relatively short periods. Reading 19-1 makes this explicit: "were the actual count taken, these would be found to vary, and were there only a few days at times changed in the count taken, the variation would amount to hordes." This recognition that a single blood count may not adequately capture the body's true condition is a recurring theme — the readings consistently emphasize that the blood supply section of a physical reading reflects a dynamic process rather than a fixed state, and that trends and patterns over time are more meaningful than any single measurement.

Reading 153-1 describes a particularly striking example of this variability in a case of nerve-related blood disturbance: "at times there are found drosses from used forces in the system. At others we will find the white blood overabundant and the red blood deficient. Again we would find the red blood cells numbering near normal and the white deficient in the character of the leukocyte exhibited in same, coagulation being improper; at others an over exaggerated condition." This shifting pattern — different each time a count is taken — reflects an underlying instability in the blood-building and blood-balancing processes rather than any fixed pathological state.

Building Red Blood: Therapeutic Approaches

The readings consistently frame the treatment of red blood deficiency in terms of supporting the body's own blood-building capacity rather than supplementing the blood externally. The primary therapeutic levers identified across the readings are dietary, eliminative, structural (usually osteopathic), and in some cases vibratory (through electrical appliances).

Dietary recommendations for red blood building consistently emphasize iron-rich and blood-building foods. Reading 255-1 prescribes "iron, phosphorous, silicon, and such" as the nutritional foundation for red blood building. Reading 264-18 recommends foods "that are blood building, and more red blood" — including beef juices, egg yolk, and fish. Reading 3482-1 specifies citrus specifically: "plenty of oranges. Eat at least three to four oranges every day" as stimulating "the vital energies necessary through proper assimilation to build red blood."

The eliminative dimension is equally consistent: red blood cannot be adequately produced when the eliminative channels are compromised, because the toxic accumulation that results burdens the blood-building organs and diverts the body's resources toward resistance rather than replenishment. As reading 675-1 states: "the disturbances in the blood supply are the effects of the poisons, and the waste tissue not being eliminated sufficiently from the system to allow the new or the assimilated energies from the vital activity and digestive organs of the system to supply the energy necessary."

Osteopathic corrections are recommended across many readings where spinal nerve pressures are identified as impairing the lacteal and digestive systems through which new red blood is produced. Reading 259-1's chain — from dorsal impingement through lacteal impairment to red blood deficiency — exemplifies the structural

dimension of this problem, which is discussed in greater detail in the nerve system chapters.

Modern Context

In modern hematology, red blood cells (erythrocytes) are the most numerous cellular component of blood, produced primarily in the red bone marrow of flat bones (sternum, ribs, pelvis, and vertebrae) through the process of erythropoiesis. They contain hemoglobin, the iron-bearing protein that binds oxygen in the lungs and releases it to the tissues, and carbon dioxide in the tissues for transport back to the lungs. A normal adult red blood cell count ranges from approximately 4.5 to 5.5 million cells per cubic millimeter — consistent with the readings' order of magnitude in reading 1236-1, though expressed in different volumetric terms (Hillman et al., 2011).

The readings' emphasis on the ribs as a primary site of red blood production corresponds to modern understanding of flat bone marrow as the primary erythropoietic site in adults. Their identification of digestive assimilation — through the lacteals and mesenteric system — as essential to red blood production finds a functional parallel in modern hematology's recognition that iron, folate, and vitamin B12 must be absorbed from the digestive tract for normal erythropoiesis, and that deficiencies in intestinal absorption (as in celiac disease or Crohn's disease) are recognized causes of anemia (Koury & Ponka, 2004).

The readings' concept of red blood as carrying a vibratory or energetic quality beyond its chemical constituents — the "vibration necessary to create in the body reserved energy" described in reading 107-1 — has no direct equivalent in modern biochemistry. Whether this formulation refers to something the readings understood as distinct from hemoglobin's chemical oxygen-carrying

function, or represents a different conceptual framework for describing vitality and energetic reserve, is a question the readings do not resolve explicitly and that modern medicine is not currently equipped to evaluate.

2.2.2 White Blood, Lymph, and the Emunctory System

White Blood: The Resistive Force

White blood cells — referred to in the readings as "white blood" or by their clinical name leucocytes (also spelled leukocytes) — constitute a second primary component of the blood supply alongside the red blood. The readings consistently characterize white blood according to its function rather than its cellular structure, and that functional characterization centers on one central concept: resistance. The most vivid expression of this function in the readings appears in the description of leucocytes as "warriors":

For, colds are plasmas that find their reaction in the blood supply itself, and FEED upon the white more than upon the red blood, until they have become some form of the strept nature. Then they work through to the organs in the system. See? They first begin with the lymph, or the water and white blood, and get hold upon the system unless the supply of leucocytes or warriors is present in the system to choke them to death. A cold can't make headway when the warriors are sufficient, or the leucocytes! (386-3)

The language of warfare is not incidental. The readings understand white blood as the body's active defensive force — the system that meets, contains, and destroys infectious agents before they can establish themselves in organs and tissue. This protective function of the leucocytes corresponds broadly to what modern medicine calls the immune response, though the readings' framework is

considerably broader than a simple identification with the immune system.

Within the white blood itself, the readings further distinguish two functional components. One reading describes the white blood as containing "the warriors" on one hand and "that which acts rather as the plasm for recuperative forces in used tissue" on the other (444-2). Reading 461-1 elaborates: "the division between that plasm in the cell in the white blood, that acts as the warriors and in the capacity of coagulating elements in conditions where cohesion or the drosses are to be eliminated, is not always balanced." This distinction between a resistive (warrior) component and a plasma component associated with coagulation and tissue recuperation is a recurring feature of the readings' hematological framework and one that does not map directly onto any single modern classification of white blood cell types, though it anticipates the broad functional distinction between cellular immunity and humoral factors.

The Red/White Balance: Replenishing and Resistive Forces

As noted above, the relationship between red and white blood in the readings is one of dynamic balance between two complementary physiological imperatives: replenishment and resistance. Red blood replenishes — carrying nutrients, oxygen, and rebuilding forces to the tissues. White blood resists — defending the body against infection and managing the elimination of used tissue. In health, these two forces are coordinated. In illness, the balance is disrupted.

The readings describe this disruption with considerable clinical precision. When the body is under infectious or inflammatory stress, the balance shifts toward white blood production at the expense of red blood, producing a characteristic pattern:

With the replenishing forces as given for blood supply, more has been given for resistive forces to be builded in the resistance needed other than in that to replenish the forces in the elements of the red blood itself. So, we find the body then emaciated or lean in force to meet the resistance, or to store resistance or reserve force in the system. The body meets the needs from cycle to cycle. Hence we find at various stages the time when the body seems to suffer from changes of the conditions within the system. (3761-1)

This shift — from red to white blood dominance — is described in numerous readings as producing a form of functional anemia: not from a true deficiency of red blood cells per se, but from the chronic diversion of the body's blood-building resources toward resistive rather than replenishing activity. Reading 4815-1 gives the symptomatic picture clearly: "much of the blood of the red blood cell forces seems turned to that force necessary in the white and lymphatic force to meet the needs in the extremities... In the white blood over abundant, especially of the cell forces given in that of lymphatics in its circulation. Hence, the tingling sensation or as of needles and pins in portions of the body in the circulation."

Conversely, a chronic excess of white blood at the expense of red blood can itself produce secondary cardiovascular effects. In one case, the imbalance resulted in an abnormal double heartbeat — a "quickening in the pulsation" attributed directly to excess leucocyte and lymph activity producing altered coagulation dynamics in the circulation (596-1).

The readings also link the red/white balance to hormonal activity. One reading states that "there is not sufficient activity between the red blood and white blood supply through the plasm by the activity of the energies in the coordination between the glandular

assimilating and the activity of the glands that aid in the distribution of assimilation," and recommends a tonic to supply "those hormones that will aid in the hemoglobin to make the metabolism as well as katabolism more normal" (808-10). This linkage between glandular function, hormonal activity, and the red/white blood balance reflects the readings' characteristically systemic view of physiology, in which no single element of the blood supply operates independently of the body's broader endocrine and nervous coordination.

The Spleen: Destroyer and Rebuilder

The spleen occupies a particularly important position in the readings' account of white blood function, reflecting its dual role as both the primary organ for destroying worn red blood cells and a center of white blood activity. One reading describes the spleen as having "to rebuild the supply but here it uses up the forces, eats this up, destroys the red blood corpuscles in the spleen itself, uses up the force that should destroy any excess" (34-1). This dual function — destruction of old red cells and production of certain white cell forces — places the spleen at the intersection of the replenishing and resistive aspects of the blood supply. The readings also associate the spleen with psychic and imaginative functions through the sympathetic nervous system (5439-1), a dimension of its function discussed further in Chapter 3.

Lymph: A Third Circulatory Component

Lymph occupies a distinctive position in the readings' hematological framework. It is not simply a byproduct of the blood or a secondary drainage system. Rather, the readings treat lymph as a third circulatory component alongside red and white blood — a distinct system with its own circulation and its own physiological functions. One reading makes this explicit: "the blood circulation is made up of

corpuscles, white and red — or two characters of the white and then the lymph circulation" (1372-1).

The lymph circulation is described in the readings as being closely associated with the sympathetic nervous system — a relationship that connects the lymph to the body's vegetative, nutritive, and eliminative processes. The superficial lymph circulation, associated with the skin and capillary network, is specifically linked to the sympathetic system, while the deeper lymph circulation — particularly through the lacteals and mesenteric system — is associated with assimilation and the transport of nutritive material from the digestive tract.

The lacteal ducts of the small intestine are a recurring point of reference in the readings. The lacteals are the lymphatic capillaries of the small intestine, through which digested fats and fat-soluble nutrients enter the lymphatic system as chyle before passing into the general circulation. The readings treat the lacteal system as a central pathway for both nutrition and elimination, and disruptions of lacteal function — through adhesions, congestion, or poor assimilation — appear frequently as contributing factors in systemic illness. One reading describes a case in which "a drying, or a tendency for the adhering together of the ducts in the lacteal area" produced a cascade of digestive and eliminative problems extending throughout the alimentary canal (908-1).

The lymph is also described as the primary carrier of white blood cells through the body's tissues. The lymphatic vessels serve as the route by which leucocytes are transported from the tissues to the heart for recirculation. In this sense, the lymph circulation is both a nutritive channel (via the lacteals) and a defensive one (via the leucocytes), embodying in its dual function the same replenishing-

and-resistive dynamic that characterizes the blood supply as a whole.

The Emunctory System: Cleansing Through Lymph

The term *emunctory* — derived from the Latin *emungere*, to cleanse or drain — is used in the readings to designate the cleansing and filtering function of lymph nodes, lymph glands, and associated structures throughout the body. While the term was used in nineteenth-century medicine to refer broadly to organs of excretion, the readings give it a more specific meaning: the emunctories are the body's internal filtering stations, intercepting and neutralizing toxic materials in the lymph before those materials can damage surrounding tissue or re-enter the general circulation.

One reading describes the relationship between the liver, lungs, and emunctory function: the liver and lungs are places "where the blood is either cleansed or put into a state to be enacted upon by the emunctories in the eliminating through the organs" (3783-1). The emunctories, in this view, are not primary eliminative organs themselves but rather the secondary cleansing agents that act upon material prepared for elimination by the primary organs. Reading 943-17, discussing psoriasis, describes the condition as "an infectious condition that affects the emunctory and lymph circulation, and causes an improper coordination of the eliminating forces of the system" — treating the emunctory and lymph circulation as a unified, coordinated system whose disruption produces systemic toxic manifestations in the skin.

The emunctory system is subject to congestion and overtaxation, particularly when the primary eliminative channels are compromised. One reading illustrates this cascade: "when the congested liver taxes the emunctories, then the kidneys attempt to eliminate that excess created" (106-1). Reading 59-1 notes that when

the emunctory forces "do not throw off from the system as they should," the blood supply becomes inefficient in its normal functions. Reading 148-1 describes the visible result of emunctory failure: "a sedimentary condition in many of the eliminating centers; as is seen in the congestion in liver and the condition in the kidneys."

Reading 908-1 provides one of the most anatomically specific descriptions of the emunctory system in relation to the lymph, locating it in "the lymph and emunctory circulation through the alimentary canal" and connecting it specifically to the lacteal area and the umbilical center. This placement is consistent with the readings' broader emphasis on the mesenteric and lacteal system as the primary site of nutritive lymph activity and, when disrupted, of toxic accumulation.

A particularly unusual passage in reading 4745-1 extends the emunctory concept to the nervous system itself, describing nerve ganglia that "partake of the action of the emunctory system so that the circulation both in the blood supply in its relation to capillary circulation and the effect to be produced on the nerve centers" is affected. This suggests that emunctory function is not strictly limited to lymph nodes and glands but extends to any tissue that performs a cleansing or filtering role — including certain aspects of the ganglionic nerve network. This is consistent with the readings' integrative conception of the body as a system of interdependent functions rather than a collection of anatomically discrete organs.

Modern Context

In modern anatomy, the lymphatic system is understood as a network of vessels, lymph nodes, and lymphoid organs (including the spleen, thymus, tonsils, and adenoids) that drains excess fluid from the tissues, transports dietary fats from the intestinal lacteals, and supports immune function through the production, storage, and

transport of lymphocytes. The lymph nodes function as filtering stations in which lymphocytes and macrophages destroy pathogens and foreign particles — a function that corresponds broadly to what the readings call the emunctory role (Willard-Mack et al., 2019).

The readings' characterization of lymph as a third circulatory component does not correspond precisely to modern hematology, which defines blood as consisting of plasma, red cells, and white cells (with platelets), and treats the lymphatic system as a separate but interrelated network. However, the readings' functional distinction between the circulatory blood proper and the lymph circulation reflects a genuine anatomical reality: the lymphatic circulation is a distinct network with its own vessels, its own fluid, and its own directional flow (unidirectional, toward the heart), and it does function as both a transport and a cleansing system in ways the readings anticipate. The emunctory concept, while not a standard modern term, corresponds functionally to what modern immunology calls the filtration and antigen-processing functions of the lymph nodes and associated lymphoid tissue (Griesenauer & Pereira, 2021).

2.2.3 Coagulation

Overview

Of all the blood factors discussed in the physical readings, coagulation is treated with the greatest conceptual breadth. In modern medicine, coagulation refers primarily to blood clotting — the cascade of biochemical reactions that forms a fibrin clot to seal a wound and prevent excessive blood loss. The readings include this familiar function within their understanding of coagulation, but extend the concept considerably further. In the readings' framework, coagulation is an ongoing, systemic process that underlies not only wound healing but the continuous maintenance of tissue integrity,

the body's response to infection and toxic accumulation, the repair of nerve structures, and the moment-to-moment elimination of cellular waste. Understanding coagulation in the readings therefore requires stepping beyond the wound-healing definition into a much broader physiological conception.

Coagulation and the Elimination of Used Tissue

A central and recurring function of coagulation in the readings is its role in the elimination of used or worn tissue at the cellular level. One reading states this directly: "as is called coagulation in used tissue, or in the system eliminating used tissue, and in this destruction, especially in blood cells, the organs of the elimination suffer" (4271-1). The normalcy of this function is confirmed elsewhere: "coagulation takes place, and the renewing in used tissue is very good, save when hindered by conditions that affect the nerve branches supplying such at certain cycles" (340-2).

The readings understand the body as engaged in constant self-renewal — cells wearing out, being broken down, and replaced through continuous cycles of destruction and rebuilding. Coagulation, in this view, is the mechanism by which used cellular material is managed: enclosed, prepared for elimination, and carried off through the appropriate channels. This is a maintenance function operating continuously throughout the body, not only at sites of injury. The analogy is made explicit in one reading: "we have a very poor coagulation ... Walking, thinking, working, or any activity that requires energies — which are as used forces in the system, as would be from the use of fuel in a fire — this produces an ash or refuse forces that must be eliminated. Then this elimination being very poor produces the effects as described in portions of the body" (1055-1). When the coagulation of used tissue functions poorly, the elimination organs — liver, kidneys, and the emunctory system —

are the first to suffer, as the accumulation of unprocessed cellular waste burdens every channel of elimination in the body (4271-1).

Coagulation and the Maintenance of Blood Vessel Walls

A second important function of coagulation in the readings is the continuous maintenance of the walls of blood vessels — particularly the veins and capillaries. The readings describe a process by which the internal surfaces of blood vessel walls are kept intact through constant coagulative activity of the circulating blood. When this maintenance fails, the vessel walls thin and become permeable.

One reading provides the most explicit statement of this relationship: "This lack of proper coagulation, or the thinning of the walls of the blood vessels, of courses of same specifically in the superficial circulation, shows the lack of the correct — or the balanced — chemical forces that go to make up the fibrin in the veins and arteries themselves. Thus there is produced that which allows the blood, through any pressure, to easily pass through the walls of same; which is indicated in the superficial circulation in those blotches, spots, bruises or the like" (2935-1). This passage is notable for its mention of fibrin — identified as the specific chemical agent responsible for maintaining vascular wall integrity, consistent with modern understanding of fibrin's role in clot formation and wound sealing. The superficial circulation is identified as the site most vulnerable to this form of coagulation failure, producing the characteristic skin manifestations — blotches, spots, and easy bruising — that the readings frequently note as signs of systemic coagulation deficiency.

Lymph congestion in the upper dorsal region can also contribute to abnormal coagulation, as one reading describes: "the nerves along the sympathetic system, especially those in the upper dorsal region or near the secondary cardiac plexus, produce in the lymph carried,

produces congestion in producing coagulation, thus carrying much of the leukocyte in the blood as shown in the system, so the lymph is over-charged or over-sensitive through the upper dorsal" (3354-1). This passage links coagulation dysfunction to nerve pressure through the sympathetic system — connecting blood factor abnormalities directly to spinal mechanics, a recurrent theme in the physical readings.

Coagulation and the Immune Response: Segregation and Separation

The readings describe coagulation as an essential component of the body's immune response, operating through a mechanism the readings call "segregation" or "separation." When infectious agents, toxic substances, or pathological processes such as tumor formation cannot be immediately eliminated, the body encases them — separating them from surrounding healthy tissue through a localized coagulative process. The formation of cysts, abscesses, and certain tumors is understood in the readings as the result of this protective segregation function.

One reading describes this process in the context of chronic accumulation: conditions "producing plethora in some portion of the system in the form of accumulations of drosses to be eliminated through this accumulated center by the act of coagulation, through the functioning of the system in attempt to segregate or separate for the system, forming in sacs, or the formation of irritations to the soft tissues" (338-1). Another reading explicitly instructs: "Keep the drainage best and keep the segregations (separations) best, and keep the activities of the body as regarding the coagulation, or keep the leukocyte forces most active" (325-32). Here, segregation, coagulation, and leucocyte activity are presented as three coordinated aspects of a single immune-protective process.

The therapeutic management of this process is treated with considerable nuance in one reading — cautioning against forcing coagulation prematurely during an active infectious process: "we would NOT — until there is sufficient time for adjusting of the system — attempt to create for the body the necessity of too much coagulation; keeping the drainages well opened throughout the system, but not to the EXPENSE of the red blood supply" (264-3). The readings thus recognize that coagulation, while essential for containment, can impede drainage if activated excessively before the body is ready to process what has been segregated.

Coagulation at the Nerve Level

One of the most distinctive and clinically unusual aspects of the readings' coagulation concept is its application to the nervous system itself. One reading describes a case in which infectious agents attacked nerve centers, producing in "the perineurium sheath itself that of the cry or call, as it were, from the system to supply that necessary to create coagulation. Hence the drain on the circulation as supplied through the leucocyte in the system to meet the needs thereof" (4157-1). The perineurium is the connective tissue sheath surrounding each peripheral nerve bundle — and the readings describe this structure as subject to coagulative repair in exactly the same way as other tissue in the body.

This is a striking extension of the coagulation concept beyond vascular and soft tissue into the neural environment. It implies that the leucocyte-driven coagulative process is not confined to the bloodstream or wound sites but operates at the cellular level throughout the body, including within nerve structures. This concept has no direct equivalent in standard modern hematology but is consistent with the readings' broader conception of coagulation as a universal maintenance mechanism rather than a

localized emergency response. One reading draws this concept together with the leucocyte-urea relationship: "when there is the necessity for coagulation, there must be the quantity of the leucocyte within the blood supply to create that urea in the blood itself so it may come about" (567-1). This passage links coagulation explicitly to the leucocytes and to urea as its chemical mediator — a relationship examined further in Section 2.2.4.

Coagulation, Leucocytes, and Hormones

The readings consistently describe coagulation as dependent on the appropriate activity of the leucocytes and on hormone levels in the blood. One reading states: "there are indications of the extra numbers of the leucocytes that have been created in the body through those activities of the glands to make for the hormones within the blood supply itself to create the greater coagulation" (683-3). This triangulates three elements — glandular activity, hormones, and leucocytes — as the cooperative agents of coagulation in the blood.

The clinical significance of this relationship is made explicit in the context of surgical readiness: "It wouldn't stand it! There's not sufficient physical resistance; neither is there sufficient of the hormones in the blood supply to produce proper coagulation" (372-8). Here, inadequate hormones directly preclude safe surgery, because coagulation cannot proceed normally without them. Another reading proposes that normal hormonal balance in the blood, measurable by blood analysis, could assess constitutional health risks: "which CAN be, may be tested by an analysis of the blood stream for those hormones of the perfect coagulation and perfect balance between red blood and white blood supply" (457-4). The readings thus present coagulation not as a simple mechanical process but as a hormonally mediated, glandularly supported

function — consistent with their general emphasis on endocrine coordination as fundamental to blood quality and systemic health.

Coagulation and Surgical Preparation

The readings address coagulation specifically in relation to surgical procedures with a clinical concreteness that deserves particular attention. The readings are explicit: surgery should not be performed when coagulation is inadequate. One reading states that a needed operation "is very hazardous" because the patient's "white corpuscles or white matter in the blood is deficient and coagulation would be tardy" (3866-1). The readings consistently recommend testing the blood for adequate coagulation before any operative procedure and improving coagulation through diet and supportive measures beforehand. The instruction in one reading is direct: "Be sure this is in that ratio that coagulation will take place normally" (337-27). Another establishes the same principle in reverse: the growth requiring removal "will continue, — and is getting to be more and more disturbing to the whole system," yet surgery should wait until "the body is prepared for same, so that the coagulation of the blood supply is sufficient" (2292-1). This emphasis on preoperative coagulation assessment reflects a clinical awareness that is entirely consistent with modern surgical practice, where coagulation tests are standard preoperative requirements.

Coagulation and Adhesions

The readings link coagulation to the formation of adhesions — the fibrous bands that can form between organ surfaces following inflammation, surgery, or infection. Adhesions in the readings are understood as a form of coagulative response that has become pathologically fixed rather than resolving normally. One reading describes a cascade in which poor elimination produced accumulations, leading to adhesions, then lesions, then chronic

dysfunction: "first by adhesions. THEN there were the formation of those as called LESIONS in these portions of the system, and this continuation of the accumulations — without the ELIMINATION — the system has CONTINUED, then, to respond only to temporary reliefs" (952-1).

Adhesions are of particular clinical significance in the readings because of their relationship to the lacteal duct system. Adhesions in the lacteal area specifically are cited in numerous readings as contributing to assimilation deficiency and systemic toxic accumulation, since they impair the flow of nutritive lymph from the digestive tract into the general circulation. This relationship is developed further in Chapter 4. Chapter 5 addresses the role of lacteal duct adhesions in a specific type of epilepsy.

Poor Coagulation: Signs and Symptoms

Across the readings, poor coagulation is associated with a characteristic set of systemic signs and symptoms: easy bruising and blotching of the skin, especially in the superficial circulation; slow healing from wounds, surgery, or illness; chronic fatigue and the "tired, worn debilitated feeling" (4558-1); aching bones from increased white blood cell production in the marrow; tendency to hemorrhage internally; and susceptibility to infectious conditions. The results of one reading, communicated as a telegraph summary, condenses the picture with striking economy: "INABILITY FOR COAGULATION ALSO FORM OF ANEMIA THINNING WALLS OF ARTERIAL CIRCULATION CAUSING INTERNAL HEMORRHAGES" (2206-1).

Modern Context

In modern hematology, coagulation refers to the complex cascade of clotting factors, platelet activation, and fibrin formation that

produces a blood clot at sites of vascular injury. The process involves both a primary phase (platelet plug formation) and a secondary phase (fibrin clot formation), and is balanced by anticoagulant mechanisms to prevent inappropriate clotting. Fibrinogen — the soluble precursor to fibrin — is produced by the liver, consistent with the readings' repeated association of liver function with coagulation quality.

The readings' broader conception of coagulation as a universal maintenance mechanism — operating at the cellular level throughout the body, including in nervous tissue — does not correspond to a single modern concept. However, it finds functional resonances with several areas of modern research: the role of the complement system and clotting factors in immune function (Markiewski & Lambris, 2007); the role of fibronectin and other extracellular matrix proteins in tissue repair and cellular maintenance (To & Midwood, 2011); and the emerging understanding of neuroinflammation and the role of coagulation factors in the central nervous system (De Luca et al., 2017). Whether these modern parallels constitute confirmation of the readings' concept, or are merely a resemblance, is a question for future research.

2.2.4 Urea

Overview

Urea is one of the most distinctive and conceptually challenging blood factors in the physical readings. In modern biochemistry, urea is understood as a metabolic waste product — the primary nitrogen-containing compound produced by the liver from the breakdown of proteins, transported in the blood to the kidneys, and excreted in the urine. It is regarded as a substance the body needs to eliminate, not

to retain, and its accumulation in the blood above normal levels signals kidney dysfunction, a condition called uremia.

The readings share the recognition that excess urea is toxic and must be eliminated. But they depart significantly from the modern view in asserting that a normal and appropriate level of urea in the blood is not merely tolerable but physiologically necessary — that urea serves active, beneficial functions in the body that go well beyond simple nitrogen disposal. This two-sided understanding of urea — as both a necessary blood constituent and a potential toxin — is one of the most striking examples in the readings of a concept for which modern medical science has no direct equivalent, and which deserves careful examination on its own terms.

Urea as a Necessary Blood Constituent

The readings consistently treat urea as one of the essential components of the blood alongside red blood, white blood, and lymph. One reading classifies it so explicitly: "a perfect coordination or balance in the red blood, the white blood, and the urea or lymph that makes for proper coagulation" (532-1). Another similarly lists urea alongside red and white blood as a distinct blood element whose level is independently assessed: "a deficiency in the numbers of the red blood, near normalcy in the urea, and low supply in the white blood" (536-1).

The equating of urea with lymph in reading 532-1 — "the urea or lymph" — is a noteworthy formulation. The readings sometimes use these terms interchangeably or in close association, suggesting that urea, like lymph, was understood as a fluid element of the blood associated with the plasma rather than the cellular components. This usage is consistent with early twentieth-century physiological understanding in which urea was recognized as a soluble constituent of blood plasma — the fluid medium in which the blood

cells are suspended — rather than the purely waste product that modern biochemistry emphasizes (Howell, 1900, p. 335).

A direct statement that urea is actively created in the blood by leucocyte activity appears in one reading: "the leucocyte that is WARRING in its activity, or that creates the urea in the blood supply itself" (404-2). This is a striking claim — that the white blood cells are themselves producers of urea as a functional byproduct of their immune activity. The complementary relationship is confirmed from the other direction: "when there is the necessity for coagulation, there must be the quantity of the leucocyte within the blood supply to create that urea in the blood itself so it may come about" (567-1). Here urea is explicitly positioned as the chemical agent through which leucocytes execute coagulation — the substance that the white blood creates and that then mediates the coagulative process. One reading further describes the urea as forming part of "the plasm" of the blood: "what may be called the plasm or the urea" (696-2). This identification with the plasma component of the blood further supports the readings' understanding of urea as an active functional constituent rather than a passive waste product awaiting elimination.

Urea and Coagulation: A Central Relationship

A consistently appearing relationship in the readings is the connection between urea and coagulation. Adequate urea is identified as a prerequisite for normal coagulation, and deficient urea is linked directly to impaired coagulative function. One reading is precise on this point: "the lack of that urea that makes for the creating of coagulation where used tissue has been eliminated for or from the system" (434-1). Another links both in the context of surgical preparation: "Should be built up in the number of the red

blood corpuscles, as well as the urea or coagulative forces of system" (264-22).

This relationship places urea within the broader coagulative framework described in Section 2.2.3. The readings appear to understand urea as one of several chemical agents — alongside leucocytes and hormones — through which coagulation is mediated and maintained. Its role is not simply to be eliminated but to participate in the ongoing tissue-maintenance process that coagulation represents throughout the body.

The Urea-Glucose Balance: An Important Pairing

One of the most clinically distinctive features of the readings' urea concept is the pairing of urea with glucose as complementary and mutually balancing blood constituents. Modern medicine does not recognize any direct physiological relationship between urea and glucose levels in the blood — their regulation involves entirely separate metabolic pathways and organ systems. Yet the readings return to this pairing repeatedly and treat the urea-glucose balance as a meaningful clinical variable.

One reading states the imbalance plainly: "the urea, the glucose, are unbalanced, making for some change in the CELL count in the blood supply also" (4661-1). Another identifies the adrenal gland — described as "the capsule above the kidney" — as the regulating agent for this balance:

... the capsule above the kidney — which keeps the equilibrium in the system, adding to or taking from that as is created in the blood supply through the glucose and urea — that is so necessary in the proper coagulations — these becoming unbalanced at times, the glucose being short, the urea being of an abundant quantity, produces

too much of the FLUIDS in the system and, as it were, the FEELING as of rocking the boat. (378-1)

This is a remarkably specific physiological claim. The adrenal gland — now understood as the source of cortisol, aldosterone, and the catecholamines, all of which affect both fluid balance and carbohydrate metabolism — is positioned here as the organ that maintains the urea-glucose equilibrium. While modern endocrinology does not describe adrenal function in precisely these terms, the association between adrenal activity, fluid regulation, and carbohydrate metabolism is entirely consistent with modern understanding of adrenal cortical function. Whether the readings' specific claim about urea-glucose balance reflects a genuine physiological relationship remains an open question.

A therapeutic corollary to this balance appears in one reading. When asked what to do for "high urea content in blood," the response is simply to "build for more of the opposite forces, or of the palliative forces as will build for more gluco [glucose] in the system" (5491-2). High urea, in other words, is treated therapeutically by increasing glucose — not by addressing the kidneys directly. This inverse relationship is consistent across the readings and reflects a coherent internal logic even if it does not correspond to standard modern treatment of elevated blood urea nitrogen.

Low Urea: Deficiency and Its Consequences

The readings recognize both deficient and excessive urea as pathological states, with distinct clinical presentations. Low urea — a concept that has no recognized clinical significance in modern medicine — is associated in the readings with several distinct consequences.

Most directly, deficient urea compromises coagulation, as described above. Beyond this, one reading traces a cascade from urea deficiency into musculoskeletal pathology: "the urea is lacking in the plasms that make for the proper coordination in the circulation; carrying more of those things that form or produce cartilaginous forces. Hence in extremities, or where there is slowed circulation, there is produced hardening or contraction of the muscular forces; the tendons becoming sore or inflamed, and then contraction" (634-1). The mechanism here is notable — insufficient urea allows an excess of cartilaginous material to accumulate in the circulation, which then deposits in areas of slow circulation, producing joint and tendon stiffness. This musculoskeletal link is confirmed in another reading: "the muscles and tendons have been stiffened by the lack of the urea in the system that makes for the necessary lymph circulation in these portions of the body" (394-7).

A clinical picture in which low urea coexists with elevated glucose and disturbed hemoglobin, producing a pattern of cold hepatic circulation, digestive disturbance, and respiratory symptoms, illustrates how the urea deficiency interacts with other blood factor imbalances to produce a complex, multi-system presentation (197-1). Low urea in the leucocyte component specifically has been linked to reduced lymph circulation, adhesion formation, and chronic toxic accumulation — producing a picture of systemic deterioration that manifests variously as rashes, boils, poor assimilation, and sciatic lumbago (642-1).

High Urea and Uremia

Excessive urea in the blood produces the condition the readings call uremia — a term shared with modern medicine, though the readings' understanding of its causes and mechanisms is somewhat distinctive. Where modern nephrology associates uremia primarily

with kidney failure, the readings trace elevated urea to a broader range of causes including poor elimination generally, hepatic dysfunction, spinal nerve pressures affecting kidney function, and the buildup of toxic conditions that tax the eliminative system beyond its capacity.

One reading provides a detailed account of how excess carbohydrates and digestive dysfunction can elevate both sugar and urea in the blood, producing symptoms of uremic toxicity — including "heaviness in the lower lumbar regions," swelling in the ankles and feet, and fatigue — through a pathway involving spinal lesions at the 8th and 9th dorsal that affect the spleen and pancreas, disturbing sugar metabolism and then overloading the kidneys with both sugar and excess urea (3722-1). Uremic kidney involvement is described elsewhere: "the gradual accumulations of drosses there that have not been eliminated. At TIMES these BECOME involved in the condition, producing in the activity of the kidneys themselves a burning sensation from the excess of not only albumin at times but the urea that arises from the uremic reaction in the system" (1067-1). The systemic consequence of chronic urea retention is described in another reading as "a form of bloating throughout the system, or the effect of softening of the tissues about the kidneys; or the activities that do not allow the uremic poisoning, or the urea, to be extracted from the circulation. Hence this is carried back, and has gradually produced then this disturbing condition throughout the body" (1355-1).

Urea and Numerical Assessment

The readings' treatment of urea occasionally includes numerical assessments consistent with standard clinical measurement. The most notable instance is reading 294-212 — the last reading given on September 17, 1944, several months before Edgar Cayce's death on

January 3, 1945. It is appropriate to note the biographical context here. This reading was given by Edgar Cayce for himself, in the final months of his life. When asked about his own urea level, the reading stated: "The urea of the blood itself is not below the normal for this body, measuring in the present a count of 13 to 15." The modern Blood Urea Nitrogen test, which measures urea nitrogen in the blood, carries a normal range of approximately 8–20 mg/dL. The figure of 13 to 15 given in reading 294-212 falls squarely within this normal range — a striking correspondence that gives the reading clinical credibility.

Modern Context

In modern biochemistry, urea is the primary metabolic end product of nitrogen metabolism in mammals. Produced by the liver through the urea cycle from ammonia generated by amino acid catabolism, urea is transported in the blood plasma to the kidneys and excreted in the urine. Blood urea nitrogen is a standard clinical marker of kidney function; elevated levels indicate impaired renal clearance, while abnormally low levels can indicate severe liver disease, malnutrition, or overhydration.

Modern medicine does not recognize any beneficial role for urea in the blood beyond its being a normal constituent awaiting excretion, nor does it recognize a direct physiological relationship between urea and glucose levels or between urea and coagulation. These are precisely the areas where the readings' framework diverges most sharply from current biochemistry. The readings' association of urea with leucocyte activity, with coagulation, and with the urea-glucose balance as regulated by the adrenal gland represents a set of specific, falsifiable claims that modern research could in principle investigate — though none appear to have been systematically tested.

The readings' broader treatment of urea as a necessary blood constituent with both beneficial and toxic dimensions depending on its level — rather than simply a waste product — is a perspective that, while not supported by current biochemistry, reflects a more nuanced view of the body's chemical equilibrium than a simple waste-elimination model would suggest.

2.2.5 Toxicity

Overview

Systemic toxicity is one of the most consistently emphasized etiological factors across the physical readings. The readings treat toxic accumulation not as a discrete disease but as a common underlying condition that predisposes the body to a wide range of illnesses and that manifests through virtually every organ system. Understanding how the readings conceptualize toxicity — its sources, its pathways, and its relationship to the body's eliminative systems — is therefore essential background for the chapters that follow.

The readings' most frequent shorthand for systemic toxicity is the phrase "poor eliminations." When the body's channels of elimination fail to adequately clear the waste products of normal metabolic activity, those wastes accumulate in the blood, the lymph, and the tissues — producing systemic toxicity. The causal logic is direct: poor eliminations produce toxic accumulation; toxic accumulation burdens the organs and the nervous system; organ burden produces functional, and eventually organic, disease. This sequence is stated concisely in one reading: "there are toxins carried in same, produced by auto-intoxication, or by the poor eliminations as are manifested in the system, and the organs that are under distress — is of the functional nature, rather than organic conditions" (4385-1). The

functional-to-organic progression — repeated across hundreds of readings — reflects the readings' consistent view that systemic toxicity, if uncorrected, moves from reversible disturbance into structural disease.

Drosses: The Readings' Term for Metabolic Waste

The readings use a distinctive term for accumulated metabolic waste in the body: drosses. The word is borrowed from metallurgy, where it refers to the impurities and slag that rise to the surface during the smelting of metal — waste material separated from what is useful. The readings apply this term consistently to the cellular waste products that result from normal metabolic activity and that must be cleared from the body through the eliminative channels. The pathological consequence of accumulated drosses is described vividly in one reading: "drosses being carried back into the system cause or produce the disturbances, or that hardened condition, or tendency towards same, or spotted conditions as exist in liver, and THIS in turn gives that effect to the circulation as produces those distresses in the heart's activity itself, though no ORGANIC condition exists there" (4461-1).

The precision of the term is confirmed elsewhere: "too much of drosses that are NOT ELIMINATED through their proper channels. While we may find eliminations in some directions as near normal, yet those as are carried in through the hepatic circulation are not eliminated as they should be" (5630-1). The readings' use of "drosses" thus carries a specific physiological meaning — metabolic residues that, when not properly cleared, progressively burden the system.

The Four Channels of Elimination

The readings consistently identify four primary channels through which the body eliminates toxic material:

1. The alimentary canal (bowel/defecation)
2. The kidneys (urination)
3. The respiratory system (breathing and the lungs)
4. The perspiratory system (skin and sweating)

All four are named together in one reading: "poisons, excesses of any nature, or drosses, are eliminated either through the alimentary canal, the activity of the kidneys and bladder, or are thrown off in the respiratory or perspiratory system" (3109-1).

Of these four channels, the readings identify the alimentary canal as by far the most important for normal toxic elimination. When the bowel becomes deficient in this primary eliminative activity — as in chronic constipation — the burden of toxic clearance shifts to the remaining three channels, each of which must then work beyond its normal capacity. It is this compensatory overloading of secondary eliminative channels that produces many of the most characteristic manifestations of systemic toxicity in the readings.

Compensatory Elimination and Its Consequences

The principle of compensatory elimination — that when one channel is compromised, others must compensate — is one of the most clinically important concepts in the readings' toxicological framework. Thus when the liver and spleen are given improper nerve supply through spinal pressures, the hepatic circulation slows, lymphatic circulation becomes "affected by the circulation," and the body "attempting to eliminate through these channels much that SHOULD be carried in the dross" — meaning the respiratory system is pressed into eliminative service that should have been performed by the alimentary canal. The result is visible in the skin: "bumps, knots, blackheads, the conditions as exist over portions of the system," as toxic material is pushed through the capillary and perspiratory channels (1736-1).

One of the most detailed clinical portraits of compensatory elimination in the readings describes the full cascade in a single sustained passage: "there are carried activities in the superficial circulation — and eliminations through the perspiratory or respiratory system — that should be carried through other eliminating channels. Thus large pores are produced, or the opening for blotches or spots on portions of the body, especially in exposed parts of the body. And AT TIMES there are the indications in the emunctory centers of such conditions being under the skin; as under arm, in groin, about scrotum. Gradually they are being eliminated through these channels, forming at times irritations" (877-3). The same reading continues to trace the compensatory pattern into the nervous system — "auto-intoxication by the slow distribution of poisons to the various portions of the eliminating system" producing abnormal sleep requirements — and into the spinal system where nerve pressures in the dorsal region hinder normal eliminative coordination.

Autointoxication as a final consequence of complete eliminative failure is described in another reading: "the condition began by the auto-intoxication of the system from poisons as were not eliminated through the respiratory or through ANY of the regular eliminating channels" (192-1). When all four channels are compromised simultaneously — a state that reading 192-1 depicts as arising from a cascade initiated by poor circulation and digestive failure — the body has no further recourse and autointoxication becomes systemic.

Autointoxication: Ancient Concept, Readings Application

The concept of autointoxication — the self-poisoning of the body by its own intestinal contents when they are not adequately eliminated — has a long history in medicine. Ancient Egyptian and Greek

medicine recognized intestinal putrefaction as a source of systemic illness, and the concept persisted through the humoral tradition. In the late nineteenth and early twentieth centuries, autointoxication became a widely accepted clinical doctrine in Western medicine, supporting a broad range of therapeutic practices including colonic irrigation, dietary reform, and intestinal antiseptics. The concept fell significantly out of favor by mid-twentieth century as the germ theory of disease gained dominance, and it is no longer recognized as a formal clinical entity in mainstream medicine — though the related concept of intestinal permeability and its systemic consequences has attracted renewed research interest in recent decades (Mathias, 2018).

The readings engaged the autointoxication concept directly and frequently, treating it as a real and clinically significant mechanism. One of the most specific mechanistic descriptions arose in reply to a question about the cause of autointoxication. The response is that "the depleted condition of the body through the strain on the digestive functioning in the system and the walls become so thin that the emunctories and lymphatics began to pick up the poisons, and they were about the nerves and muscular centers as to cause the contraction of these muscles and nerves as governed — from these centers" (4133-1). This description — in which thinning of the intestinal walls allows toxic material to be picked up by the lymphatics and emunctories, where it then affects the nerve centers — bears a functional resemblance to modern research on intestinal permeability and the passage of inflammatory mediators from the gut into systemic circulation (i.e., "leaky gut" — see Chapter 5, psoriasis).

The autointoxication concept is also extended in the readings to include dental sources: "The toxins are not from the teeth entirely,

see, these only add to the other toxins. It was first produced by that streptococci bacilli and that as is known in this plane as 'flu'. The reaction is from that and bacilli comes from autointoxication from the intestinal tract where the system has been allowed to gather from those portions that which should be eliminated from the system" (4283-1).

Nerve Pressures as a Source of Toxic Accumulation

One of the most distinctive features of the readings' toxicological framework is the role of spinal nerve pressures in producing systemic toxicity. The readings do not treat poor eliminations as a purely digestive or renal problem — they trace eliminations directly to nerve supply. When nerve centers governing the eliminative organs are disturbed — by subluxations, lesions, or other structural conditions along the spine — the organs those centers innervate are unable to receive proper incentives for normal eliminative activity. The result is functional impairment of elimination, and with it, toxic accumulation.

This mechanism is illustrated in clinical detail wherein impingements in the cerebrospinal system at the 8th, 9th, and 10th dorsal and the 3rd and 4th lumbar "gave improper incentives through the mesenteric system, or the intestinal tract. These, in producing toxins in the system, have brought about disorders with the organs of elimination, as WELL as to the circulatory system itself" (4530-1). The cascade from nerve pressure through toxic accumulation to multi-system disorder — including headaches, sensory disturbances, kidney dysfunction, and heartburn — is traced in a single continuous causal chain.

The same mechanism producing the characteristic skin manifestations of compensatory elimination is described in another reading: spinal subluxations giving improper incentives to the liver

and spleen → slowed hepatic and lymphatic circulation → toxic redistribution through the skin and respiratory channels → visible skin lesions and blackheads, with the underlying cause being spinal rather than primarily digestive or renal (1736-1).

This linkage between spinal mechanics and eliminative function is one of the reasons the readings so frequently recommended manual therapy as part of the treatment for systemic toxicity — not because the spine itself was toxic, but because restoring proper nerve supply to the eliminative organs was understood as a prerequisite for restoring normal eliminative function.

The Blood as Toxin Carrier

The blood occupies a central and ambiguous position in the readings' account of systemic toxicity. It is simultaneously a channel for the distribution of toxic material to the eliminative organs and a medium that becomes contaminated when elimination fails. This dual role is captured clearly in a reading where the blood supply acts "as a carrier for elimination of used energies to their various portions or conditions in system where such eliminations may take place" (108-2). When elimination is functioning normally, the blood carries waste material to the liver, kidneys, lungs, and skin for clearance. When elimination is compromised, the same circulatory function distributes toxic material throughout the body rather than clearing it.

The consequence of this reversal is described elsewhere: "preventing there being carried back into the system that which should be eliminated through its proper channels" — toxic material that should have been cleared is recirculated, progressively burdening the organs it passes through (4439-1). The blood supply thus becomes both the vehicle of toxicity and the indicator of its degree, as the readings consistently note that the blood supply section of a

physical reading reveals the toxic state of the system precisely because the blood both carries and reflects the eliminative condition of the body.

Systemic Manifestations of Toxicity

The range of symptoms attributed to systemic toxicity in the readings is broad, reflecting the fact that toxic accumulation affects virtually every system of the body depending on which eliminative channels are most compromised and which organs are most burdened. The most consistent patterns include:

Skin manifestations — blotches, spots, large pores, blackheads, boils, rashes, and eruptions — arising when the perspiratory system is forced to eliminate what the alimentary canal and kidneys should be clearing. Reading 877-3 provides the clearest description of this pattern.

Neurological symptoms — headaches, dullness of the head, nervousness, irritability, "fullness in throat," visual disturbances, and burning sensations — arising as toxic material affects the nerve centers and sensory organs reflexly. Reading 4530-1 traces several of these to their nerve-pressure origins.

Fatigue and sleep disturbance — the "tired, unsatisfactory feelings," abnormal sleep requirements, and the "dull, draggy feeling" described in readings 629-2 and 877-3 as direct expressions of autointoxicative load on the nervous system.

Digestive disturbance — nausea, acidity, indigestion, constipation, and sluggish peristalsis, arising both as causes and as effects of poor elimination.

Musculoskeletal symptoms — aching, heaviness in the limbs, and the characteristic bearing-down sensations in the lower body

described in the uremia readings — arising as toxic material settles in areas of slowed circulation.

An important terminological distinction worth preserving is noted: these symptoms are described as "merely signposts, not causes — not the reactions, even. Rather those WARNINGS as to disorders, or distresses, as come to the physical" (5439-1). The readings consistently insist that symptoms of systemic toxicity are not the disease but its expression — signs pointing toward an underlying eliminative disorder that must be addressed at its source rather than managed symptomatically.

Modern Context

The concept of systemic toxicity as understood in the readings corresponds in part to what modern medicine recognizes in conditions such as renal failure (uremia), liver failure (hepatic encephalopathy), and sepsis — all of which involve the accumulation of toxic substances in the blood when primary clearance mechanisms fail. The principle that the blood carries both nutrients and waste, and that its toxic load reflects the state of the eliminative organs, is entirely consistent with modern laboratory medicine, in which blood chemistry panels are used to assess liver and kidney function precisely because these organs' eliminating activity is reflected in circulating metabolite levels.

The readings' emphasis on the bowel as the primary channel of elimination is partially supported by modern gastroenterology, which recognizes the gut microbiome and intestinal barrier integrity as significant factors in systemic health. The emerging field of research into intestinal permeability — sometimes informally called "leaky gut" — and its relationship to systemic inflammation has revived interest in the autointoxication concept in a scientifically updated form, though the formal clinical entity of autointoxication

as understood in the early twentieth century remains outside mainstream medicine's accepted framework.

The readings' linkage of spinal nerve pressures to impaired organ elimination has no direct equivalent in modern pathophysiology, which does not recognize spinal mechanics as a primary determinant of hepatic, renal, or intestinal eliminative function. It is, however, consistent with the traditional osteopathic and chiropractic understanding of visceral function as dependent on adequate nerve supply — a framework discussed further in Section 1.2.3.

2.2.6 Acid/Alkaline Balance (pH)

Overview

Acid/alkaline balance is one of the most consistently emphasized physiological principles throughout the physical readings. The readings return to it across virtually every category of illness, naming it among the fundamental regulatory conditions of the body — one that affects immunity, elimination, digestion, the blood supply, and the structural integrity of the tissues. While the concept of pH (potential of hydrogen) as a formal chemical measurement was established in the early twentieth century, the readings' engagement with acid/alkaline balance is not primarily a chemical discussion. It is a physiological and clinical one — concerned with how the body's internal chemical environment shapes its capacity for health, resistance to infection, and recovery from illness.

The readings consistently recommend maintaining a slightly alkaline tendency throughout the system, describing this as the body's natural healthy state and noting that deviations toward excess in either direction predispose the body to a wide range of disorders.

The Normal Balance: Twenty Percent Acid, Eighty Percent Alkaline

The readings describe a general dietary and systemic ratio that supports normal acid/alkaline balance. A normal diet, the readings note, is "about twenty percent acid to eighty percent alkaline-producing" (1523-3). This ratio is offered not as a rigid prescription but as a general orientation — a recognition that the body requires both acid and alkaline elements for normal function, but that health is best maintained when the alkaline tendency predominates. One reading reflects this dietary counsel directly: "keep to those that are more alkaline than acid. Those that are naturally easily assimilated, and that make for increase in the lymph and the blood flow" (642-1). This 80/20 alkaline-to-acid orientation is consistent across the readings and applies most directly to diet, though the readings make clear that diet is only one of several factors governing systemic acid/alkaline balance.

Superacidity: A Distinct Clinical Entity

The readings use the term superacidity to designate a specific and more severe form of systemic acidity — not merely a dietary imbalance but a pathological condition of the blood and lymph that predisposes the body to infectious illness, congestion, and tissue damage. One of the most precise definitions of what this condition means physiologically appears in reading 261-13: "there is the creating in the system of a superacidity. Acidity is that in the supply of the lymph and blood itself, or in the circulatory system, which allows the effectual action of cold, draught, or any of those activities which produce the effect of congestion localizing — as in head or in arm or any portion of the body."

This is a significant statement. Acidity in the readings is not simply a digestive condition affecting the stomach — it is a condition of the

blood and lymph circulation that makes the entire system more vulnerable to external challenges. The word "allows" is important: superacidity does not directly cause congestion, but it creates the physiological environment in which congestion and infectious processes can gain a foothold and localize.

A self-reinforcing cycle is traced in another reading: "the very NATURE of the disturbance in the lymph and the emunctory circulation is from overacidity or superacidity. As there is an excess of diffused forces, these are of themselves putrid — and become acid in their decomposition within the body itself, as the bodily changes go about" (1118-1). Accumulated waste material that has not been properly cleared through the emunctory and lymph channels undergoes acidic decomposition within the body, which further burdens those same eliminative channels and deepens the systemic acidity.

The episodic quality of superacidity — rising and falling with digestive cycles — helps explain why its clinical manifestations often come and go rather than remaining constant. One reading describes how "periods when the gastric flow not only in the stomach proper but from the activity in the pylorus and those activities from the secretions that arise from the natural activity of the secretions of the glands for digestion, from the liver and throughout those portions of the body, regurgitates. And we have those periods when an overacidity or superacidity arises" (842-1).

Causes of Systemic Acidity

The readings identify multiple contributing factors to systemic acidity, of which diet is the most frequently discussed but by no means the only one.

Dietary causes. The readings consistently identify an excess of acid-producing foods — particularly sweets, meats, and certain starches — as the most common dietary contribution to systemic acidity. Improper food combinations can generate acidity even from otherwise alkaline-producing foods. One reading provides a specific example: taking raw egg white in certain combinations produces an acid reaction, while beating the white thoroughly and combining it with honey and lemon completely changes the reaction — the same food producing opposite effects depending on preparation and combination (808-4). The readings also identify poor elimination as a dietary-adjacent cause: when food is inadequately digested or the bowel fails to clear promptly, fermentation and putrefaction within the alimentary canal generate acidic byproducts that are absorbed into the circulation (1118-1). This links acidity directly to the autointoxication mechanism discussed in Section 2.2.5.

Mental and emotional causes. The readings consistently recognize mental and emotional states as direct contributors to systemic acidity. Worry, fear, anger, and sustained stress are all cited as acid-producing in their physiological effects. This reflects the readings' understanding of the sympathetic nervous system as the bridge between mental-emotional experience and physical chemistry — states of mind that chronically activate the sympathetic system alter digestive secretions, circulation, and eliminative function in ways that shift the body toward greater acidity. One reading traces how emotional and nerve-tension produce excessive digestive acidity through the spinal-sympathetic pathway — the 8th, 9th, and 10th dorsal pressures producing "acidity becomes the result in the system" through their effect on the duodenum (4530-1).

Poor mastication. The readings note that inadequate chewing of food — failure to properly begin the alkalizing digestive process in

the mouth through thorough salivary contact — contributes to systemic acidity. One reading describes how insufficient salivary secretion forces the system to compensate with greater pepsin activity, overtaxing the stomach and liver and setting the stage for systemic acid accumulation (81-1).

Spinal nerve pressures. The readings extend the causes of acidity to include spinal lesions that impair the nerve supply to the digestive and eliminative organs. One reading traces the "over-acidity as is seen in the system" directly to long-standing pressures in the 8th and 9th dorsal and 3rd and 4th lumbar regions — nerve pressures producing plethora in the caecum and inflammation in the lacteal region that manifest as burning sensations and over-acidity in the stomach (4726-1). The acid condition here is not primarily a dietary problem but a structural one, requiring manual therapy correction at the nerve level rather than dietary modification alone.

Alkalinity and Resistance to Infection

One of the most distinctive claims about acid/alkaline balance in the readings is the direct relationship between alkalinity and resistance to infectious illness. The readings state that common infectious agents — including the organisms responsible for colds and related conditions — cannot establish themselves in an alkaline physiological environment.

One reading is explicit: "colds that are the more common to all bodies do not react in an alkaline condition. An alkalinity is destructive to colds." The same reading recommends citrus fruit juices for their alkalizing effect when a cold threatens, and citrocarbonate preparations to restore the proper alkaline-acid balance in the lymph and emunctory circulation (1291-1).

A slightly different framing appears elsewhere — not that alkalinity destroys the infectious agent directly, but that acidity "allows the effectual action" of the agents of congestion and infection, while an alkaline system denies them the environment they need to take hold (261-13). This is a more nuanced claim — alkalinity as a condition that denies infectious processes their foothold, rather than as a direct antimicrobial agent.

This concept finds partial support in modern microbiology. Many bacterial and viral pathogens have narrow pH optima for reproduction and pathogenicity. The readings' claim finds resonance in research on goldenseal's active alkaloid berberine sulfate, which is substantially more antimicrobially effective at alkaline pH — approximately two to four times more effective at pH 8.0 than at neutral, and only a quarter as effective at acidic pH 6.0. While this represents a specific case rather than a universal principle, it provides a concrete modern parallel to the readings' broader claim about alkalinity and infection resistance (McMillin, 2001).

Acidity and Specific Conditions

The readings associate systemic over-acidity with a range of specific pathological conditions. One reading links acidity directly to arthritic tendencies: "the disturbing conditions in the present arise primarily from an unbalanced condition in the acids and alkalines of the system, and those tendencies for this acidity to have formed in the blood supply a stress that tends towards that of an arthritic reaction in the muscular and tendon forces" (1315-5). Another describes a condition between neuritis and rheumatism produced by "the form of acids as are left in the system by the inactivity of the NORMAL forces through the kidneys" (5571-1). The common thread in these musculoskeletal presentations is the deposition of acidic residues in areas of slowed circulation — the same mechanism noted

in Section 2.2.4 in relation to urea deficiency and cartilaginous accumulation.

Measurement of Acid/Alkaline Balance

The readings consistently encouraged the individual monitoring of acid/alkaline balance as a practical self-care practice. The method is specified clearly in one reading: "this may be determined by the test of self from the spittle or from the urine, or both, so that it is known that there is kept an equal balance in the system. For these, of course, are the channels of elimination through the supply to the lymph circulation, and to portions of the eliminating system, show whether the alkalinity and acidity are kept balanced or not" (261-13).

The saliva and urine are here identified as accessible indicators of the body's eliminative and acid/alkaline condition — information available to anyone with simple litmus paper or pH test strips. The readings recognized that acidity measurable in saliva and urine reflects the acid/alkaline status of the lymph and eliminative circulation — making these easily obtainable measurements meaningful proxies for internal physiological balance. This is clinically pragmatic advice consistent with self-monitoring practices recommended by various health reformers in the early twentieth century and that finds some support in modern clinical nutrition.

The Citrus Paradox: Acid Foods That Produce Alkalinity

A concept the readings emphasize — and one that is potentially counterintuitive — is the distinction between a food's intrinsic acidity and its metabolic effect on the body's acid/alkaline balance. Citrus fruits are chemically acidic — they contain citric and ascorbic acids — yet the readings consistently recommend them as alkaline-producing within the body. One reading recommends "citrus fruit juices taken occasionally, if there is the tendency for a cold, will

create an alkalinity in the system" (1291-1). Another includes citrus fruit in a dietary outline specifically designed to maintain alkaline predominance (642-1).

The explanation is that digestion consumes the acidic components of citrus fruits, leaving an alkaline metabolic residue. The net effect on the body's internal environment is alkaline, despite the food's chemical acidity outside the body. This distinction — between extrinsic acidity and endogenous metabolic effect — is consistent with modern nutritional science, which recognizes the concept of the potential renal acid load (PRAL) of foods, by which citrus fruits are indeed classified as alkaline-forming in their metabolic residues despite their intrinsic acid content (Remer & Manz, 1995).

The same principle is extended in one reading to specific food combinations: the raw egg white example shows that the same food can produce opposite acid/alkaline effects depending on how it is prepared and what it is combined with — a recognition that dietary acid/alkaline effects are not fixed properties of individual foods but emerge from the interaction of foods with the digestive process (808-4).

The Blood's pH Regulation

The readings recognize that the blood itself maintains a tightly regulated acid/alkaline range, and that the body's regulatory systems work continuously to maintain this balance. This is consistent with modern biochemistry, in which arterial blood pH is maintained within the narrow range of 7.35 to 7.45 — a slightly alkaline range — by the coordinated activity of the respiratory system (controlling CO₂), the kidneys (controlling bicarbonate), and blood buffer systems. One reading, while not citing specific pH values, describes the liver, kidneys, and hepatic circulation as working together to maintain the proper "equilibrium" in the body's

chemical condition — consistent with the readings' understanding that multiple organ systems coordinate in maintaining acid/alkaline balance rather than any single organ managing it alone (5669-1).

The readings' therapeutic recommendations for restoring alkaline balance — including dietary modification, citrocarbonate preparations, osteopathic corrections to restore proper nerve supply to the eliminative organs, and attention to mental-emotional states — reflect a multi-systemic approach to a problem they understand as having multiple contributing causes operating simultaneously.

Modern Context

Modern medicine fully endorses the physiological importance of acid/alkaline balance — indeed, pH homeostasis is among the most tightly regulated variables in human physiology, and deviations outside the normal range produce life-threatening conditions. Arterial blood pH below 7.35 (acidosis) or above 7.45 (alkalosis) are recognized as serious medical emergencies requiring immediate intervention.

The readings' concept of systemic acidity, however, operates at a different level than acute blood pH disturbance — it concerns a more chronic and mild tendency toward acidity that the readings associate with dietary, eliminative, emotional, and structural causes. This corresponds more closely to what modern alternative medicine calls "metabolic acidity" or "dietary acid load" — a concept that, while not recognized as a formal clinical entity in mainstream medicine, has been the subject of ongoing research regarding its relationship to bone density, muscle mass, and certain chronic disease risks (Carnauba et al., 2017).

The readings' specific claims about alkalinity and infection resistance, and about acidity and arthritic or rheumatic conditions,

are not established principles of modern pathophysiology, but they are not entirely without parallel in the research literature. The relationship between systemic pH, inflammatory cytokines, and microbial growth remains an active area of investigation (Luo et al., 2022).

2.2.7 Metabolism and Katabolism

Overview

The readings contain frequent references to “metabolism” and “katabolism,” often using terminology that appears unusual or antiquated from the standpoint of modern biochemistry. The spelling “katabolism” was common in older physiological literature and reflected direct transliteration from Greek roots. The prefix *kata-* signified downward movement or decomposition. Over time, English-language scientific usage standardized the spelling as “catabolism,” although the older form remained in circulation well into the twentieth century.

Conceptually early physiologic medicine did not treat anabolism and catabolism as symmetrical biochemical categories in the modern sense. Instead, catabolism was strongly associated with pathological states involving tissue degeneration, fever, oxidation, nervous depletion, wasting disease, and toxic accumulation. By contrast, anabolism was frequently treated as a normal nutritive or reparative process requiring less explicit clinical discussion. This asymmetry is crucial for understanding the terminology employed in the Cayce readings where anabolism is mentioned in only one reading whereas 128 readings discuss both metabolism and katabolism as a paired conceptual unit —consistently addressed in relation to one another.

Early clinical medicine emphasized degenerative, toxic, and

eliminative processes far more heavily than constructive metabolism, resulting in a pathophysiological focus on catabolic imbalance. Thus the readings' terminology reflects an older systems-physiology model in which metabolism referred not merely to intracellular biochemical pathways but to the integrated regulation of circulation, elimination, glandular coordination, nervous function, oxidation, and tissue vitality. Thus the Cayce readings employed physiologic language consistent with the organismic and systems-oriented medicine of that period. This explains why "katabolism" appears frequently while "anabolism" is comparatively rare.

In modern biology, metabolism is the umbrella term for all chemical reactions that sustain life in a living organism, encompassing both anabolism (the building up of complex molecules from simpler ones) and catabolism (the breaking down of complex molecules to release energy). In the readings, metabolism and katabolism are not nested in this way — they are coordinate terms, placed side by side as complementary aspects of a single balanced process. Understanding exactly what this means requires careful study of the readings themselves.

The Readings' Own Definitions

The most explicit definitional statement of both terms as used in the readings appears in a direct answer to the question of what these terms mean:

But what do these terms mean? That there may be that proper rhythmic activity of the organs in their functioning for the creating of the forces and elements necessary for producing resuscitation in the body. That is, there are those forces in the divisions of the blood supply — the red blood cell, the white blood cell, the lymph or the leucocyte — that must increase, or be

increased in this body in the present, for the recuperation or building up of structural forces where injuries to the ulna have made for an activity, or where operative forces in same necessitate that there be the creation of such elements. Hence, metabolism means keeping that balance necessary for the supplying of same. The katabolism means keeping the internal and external activity of the circulation in and to the organs in harmony and rhythmical activity in relationships one to another. (564-1)

This passage is worth reading carefully, because it defines the terms functionally rather than biochemically. **Metabolism**, in the readings' usage, means maintaining the balance of forces in the blood supply — particularly the balance among red blood, white blood, and lymph — that is necessary for tissue resuscitation, repair, and building. It is, in this sense, the supply side of the body's regenerative activity.

Katabolism, by contrast, means maintaining the rhythmical, coordinated activity of the circulation — both internal (to the organs) and external (the superficial and peripheral circulation) — in proper relationship to one another. It is, in this sense, the distributive and circulatory side of the body's regenerative activity. This explains why metabolism and katabolism are addressed in the blood section of the reading that deals with the contents of the blood and its circulation — both deep and superficial.

This is a distinctive and coherent framework. Metabolism and katabolism are not simply biochemical pathways — they are circulatory and coordinative processes. Metabolism deals with the quality and balance of what the blood contains; katabolism is more closely associated with how that blood is distributed through the system in rhythmical, coordinated flow.

Metabolism, Katabolism, and the Blood Supply Divisions

The definition in reading 564-1 links metabolism specifically to the divisions of the blood supply — red blood, white blood, and lymph. This is an important connection. The readings appear to understand metabolism not merely in the abstract, but as the pressure and balance specifically among the blood's constitutive elements. When red blood, white blood, and lymph are properly balanced and the forces they represent are present in the right proportions, metabolism is normal. When they are imbalanced — red blood deficient, white blood excessive, lymph congested — metabolism is disturbed. One reading illustrates this concretely:

The BLOOD SUPPLY indicates a very poor assimilation through the digestive system, as well as very diffused in the secretions from the glands; so that the metabolism of the system is very much disturbed. There is a lack of the numbers in the white AND red blood, and those tendencies for the improper coagulations in the system arise from these tendencies in the blood stream as produced by incoordination in the functionings of the system, the lack of elements in the body itself to produce or cause the functionings of these glands — as indicated in the thyroid, as indicated in the lacteal ducts where we have something of an adhesion or cohesion of the glands themselves. (854-1)

Here, disturbed metabolism is the direct consequence of disrupted glandular function affecting the blood's compositional balance. Thyroid and lacteal gland dysfunction produced blood element deficiencies expressed as metabolic disturbance.

Metabolism, Katabolism, and Assimilation

The readings frequently associate metabolism with assimilation — the process by which digested nutrients are absorbed into the blood

and distributed to the tissues. One reading captures this triangular relationship with notable epistemic caution:

... these conditions have to do with the assimilation and with the effect as is produced in the character of the blood supply as created by these disturbances that affect same. So, it could NOT be said that the blood SUPPLY was wholly the cause, yet the conditions existent IN the blood stream are a source of affection to the functioning organs. Neither could it be said that the ASSIMILATIONS' disturbance caused the disorders in the system, yet their combined condition produce the disturbing forces. Hence we find the metabolism disturbed, the katabolism over-active and disturbed at other times." (5509-1).

The caution here is worth noting: the readings decline to identify either the blood supply or assimilation as the sole cause of metabolic disturbance, insisting instead that they act together — a combined condition producing the disturbing forces. This reflects the readings' consistent systemic view. In the body, causes and effects operate through mutual reinforcement rather than linear chains.

The metabolic relationship is narrowed to a specific anatomical site in another reading: "The metabolism as respecting this body refers especially to that condition as existent in the coordinating of the liver with the pancreatic and duodenal juices of the stomach, and that digestion taking place in the upper portion of intestines themselves" (1866-6). Here metabolism is understood functionally as the coordination of hepatic, pancreatic, and intestinal digestive activity — the integrated process by which food is transformed into blood-nourishing material. This is a highly specific and anatomically grounded use of the term, quite different from its modern biochemical meaning but internally consistent within the readings'

framework.

Metabolism and Katabolism in the Nerve System

One of the more unusual applications of these terms in the readings is their extension to the nervous system. One reading states: "In the blood supply, this is very good, in quantity and quality. In the metabolism and katabolism in the nerve system as seen, we find the greater distress" (3912-1). This passage is striking because it applies metabolism and katabolism directly to nerve functioning rather than to the blood supply — suggesting that the readings understand these terms as applying to any system in the body that requires a balance of supply and rhythmical distribution, not only to the blood.

The reading continues to describe how a spinal injury at the second dorsal and fifth cervical affects "the coordination of the nerves, as had to do with impulse through the sympathetic system" — disrupting the eliminative activity of the nerve forces themselves, preventing "the vitality of the body as of exercising its full functioning in the system." This is metabolism and katabolism understood as neural processes. The supply and distribution of nerve energy through the system in proper balance and rhythmical coordination.

Metabolism, Katabolism, and Deep/Superficial Circulation

One of the most clinically important connections in the readings' metabolism/katabolism framework is the relationship between metabolic disturbance and the balance between deep and superficial circulation. One reading establishes this directly:

In this we find that the metabolism and katabolism of the system are both disturbed, the circulation being deep, the superficial circulation being inactive. Hence we have that attempt within the body to meet those conditions where engorgements in the fluid forces of the internal,

lymph and emunctory circulation show pressures being produced upon organs and in the activity of the organs themselves. (842-1)

When metabolism and katabolism are both disturbed, the readings describe a characteristic pattern: the deep circulation becomes dominant while the superficial circulation becomes relatively inactive. The consequence is engorgement — pressure accumulates in the internal organs through the lymph and emunctory system, producing organ stress and toxic accumulation. The blood itself becomes "heavy, slow" — a visceral quality the readings describe across multiple readings as a cardinal sign of metabolic-katabolic disturbance.

The same deep/superficial incoordination seen from the metabolic angle is described in another reading: "the metabolism of the system is disturbed at times, making for an incoordinant activity between the deeper circulation and the superficial activity; so that at periods the body becomes, as it were, irritated in the superficial circulation in portions of the body" (1021-1). The irritated superficial circulation — the blotching, spots, and skin manifestations described throughout Section 2.2.5 — is here traced directly to metabolic incoordination between deep and superficial blood flow.

Katabolism Disturbed Independently

An important distinction in the readings is that metabolism and katabolism, while typically disturbed together, can also be disturbed independently — and the distinction matters clinically. One reading notes "the metabolism disturbed, the katabolism over-active and disturbed at other times" — implying that either can be the primary disturbance in a given case (5509-1). Another describes a case in which "the katabolism disturbed rather than the metabolism. This producing that form of anemia that, unless warnings — or guarded

against — might produce not only a distressed condition, but with a developing virile body become LOCALIZED or segregated in such a manner as to give distress either in a functioning organ or of an attack in a weakened condition in the nervous system" (1738-2). With this pattern, when katabolism alone is disturbed — when blood distribution is impaired while its compositional balance remains adequate — the readings predict a specific consequence. The localized segregation of disturbing forces, producing either organ stress or neurological vulnerability.

The subtler presentation of combined metabolic-katabolic disturbance — where the blood supply appears superficially normal — is described in another reading: "here we find there is that which NOMINALLY would be called of little disturbance, yet were the activities of same classified there would be found that the metabolism and katabolism of the system was disturbed through the elements that are lacking, or over-predominant in the blood stream itself" (4393-1).

Symptoms of Disturbed Metabolism and Katabolism

Across the readings, metabolic-katabolic disturbance is associated with a characteristic and varied symptom picture. One reading provides the most comprehensive list: dizziness; dull aching across the lower dorsal and lumbar area; fullness or nausea of mornings; swelling or fullness in the limbs; numbness or acute pains in the extremities; lymph pocket accumulations in the abdominal area; emotional irritability and melancholy; kidney and bladder disturbance; constipation and digestive sluggishness; and an irregular electrical charge throughout the body — "some portions of the body becoming too much overcharged with electrical forces as from the body itself, others become then too undercharged and slow the circulation" (844-1).

Additional symptoms include thumping or pulsating sensations; the "dull, draggy feeling"; fullness in the throat; heaviness or coldness in the arms, hands, and lower extremities; and diffuse abdominal sensations of swelling and pulling (913-1). Quick pulse; alternating blood pressure; heaviness or pressure in the duodenum and lacteal area; dull headaches at the base of the brain; and dizziness or ringing in the ears on rising quickly are also noted (5515-1).

The connection between metabolic disturbance and the toxicity framework is made explicit in another reading: "the disturbances in the BLOOD SUPPLY are the effects of the poisons, and the waste tissue not being eliminated sufficiently from the system to allow the new or the assimilated energies from the vital activity and digestive organs of the system to supply the energy necessary. Hence we have a disturbance in the metabolism of the system, a lowness at times in the blood pressure, disturbances in the eliminations through the kidneys and the bladder disorder; the abrasions that occur in the skin (or the rash) are the effect of these same types or characters of disorder" (675-1).

The range and variety of these symptoms reflects the systemic character of metabolic-katabolic disturbance in the readings' framework. Because metabolism and katabolism govern the balance and distribution of the blood throughout the entire body, their disruption expresses itself differently in different individuals depending on which organs are most affected, which eliminative channels are most compromised, and which circulatory patterns are most disturbed.

Historical Context

The stark conceptual asymmetry between katabolism and anabolism in the readings reflects the clinical focus of early western medicine. In the late nineteenth and early twentieth centuries, the primary lens

through which physicians viewed chronic pathology was the management of waste products, tissue breakdown, and systemic elimination. The dominant medical theories of the era—including the highly influential concept of "autointoxication" (the self-poisoning of the body due to retained waste materials in the intestinal tract and bloodstream) — hypothesized that disease originated when the body failed to fully break down and expel cellular debris.

Within this paradigm, katabolism was recognized as the highly active, precarious, and dangerous phase of life. If the katabolic cycle was sluggish or incomplete, intermediate products of decomposition — referred to in early literature as "toxons," leucomaines, or sub-oxidized organic wastes — would accumulate in the vital organs and tissues, precipitating chronic illness, systemic inflammation, and nervous exhaustion.

Because the active pathology of chronic illness was viewed as a failure of breakdown and elimination, clinical intervention was targeted almost exclusively toward stimulating and balancing the katabolic pathway via hepatic, renal, intestinal, neural, and dermal stimulation. Anabolism, by contrast, was rarely discussed in clinical manuals because it was seen as a passive baseline state that required little therapeutic modulation.

This view of katabolism is present in the historical osteopathic literature, particularly in the work Louisa Burns, who links the "retention of the waste products of katabolism" with costal or vertebral lesions:

When such a lesion is present the surrounding tissues become edematous; the tissue fluids become less alkaline than normal and there is a slight but persistent local congestion with some retention of the waste products of

katabolism and some lack of normal oxidation processes of the cells of the immediate vicinity of the lesion. These changes are always present when a costal or vertebral lesion has been present for a few days and they remain present as long as the lesion remains uncorrected. The nerves passing through the intervertebral foramina are subjected to the abnormal pressure of the edematous tissues and to the effects of the abnormal tissue juices. (Burns, 1910)

This example points to an important theme emphasized in the readings. Somatic dysfunction (such as lesions and subluxations) can compromise neural regulation of waste products of katabolism resulting in systemic toxicity (autointoxication). Manual therapy (especially traditional osteopathy) can address causes of poor eliminations associated with katabolism and the chain of pathological effects that flourish in a toxic physiological environment.

Modern Context

In modern biochemistry, metabolism is the comprehensive term for all chemical reactions occurring in living organisms, and it explicitly encompasses both anabolism (biosynthesis, building up) and catabolism (degradation, breaking down). Catabolism releases energy that anabolism uses to build larger molecules. These are understood as biochemical processes at the molecular and cellular level — enzyme-mediated reactions governing the transformation of substrates into products.

The readings' usage of these terms does not map onto this biochemical framework in any direct way. They describe physiological coordination patterns rather than molecular pathways.

There are, however, functional resonances worth noting. The readings' understanding of metabolism as the balance of forces in the blood supply corresponds in a general sense to modern hematological assessment, in which blood panel values are used to evaluate the body's overall physiological balance.

The readings' insistence that metabolism and katabolism must be in coordination with one another — that disturbance of either produces predictable systemic consequences — reflects a recognition of what modern physiology calls homeostasis: the tendency of the body to maintain dynamic equilibrium among its constituent systems. That these terms were applied in the readings with a meaning substantially different from their modern biochemical definitions is a clear example of the terminological caution advised throughout this text. The readings must be understood in the context of the vocabulary available and in use during the period in which they were given, not evaluated against standards that did not yet exist.

2.2.8 Minerals

Overview

The physical readings treat minerals as fundamental constituents of the blood, the tissues, the nerves, and the structural elements of the body. Their discussion of minerals is both extensive and systematic. Across the readings, thirteen mineral elements emerge as clinically significant: calcium, iron, phosphorus, iodine, silicon, potassium (potash), sodium, sulfur, gold, magnesium, zinc, and manganese. These vary considerably in the depth of their treatment — calcium and iron receive the largest attention, while manganese appears primarily in industrial contexts — but together they form a coherent mineral framework that is distinctively the readings' own.

Several principles govern the readings' approach to minerals throughout:

Food sources are preferred over supplements. The readings consistently express a preference for obtaining minerals through natural food sources rather than synthetic preparations. This preference is stated most explicitly for phosphorus (1173-8) but pervades all mineral discussions. The body assimilates mineral elements more effectively when they arrive embedded in organic food matrices than when delivered as isolated inorganic compounds.

Balance and polarity matter as much as quantity. Minerals function in coordinated relationships with one another. An excess of one element can be as pathological as a deficiency of another. The readings identify several key mineral pairings — calcium and potash, iron and silicon, phosphorus and iodine, sodium and potash — in which the proper ratio between paired elements is as important as the absolute level of either.

Each body is a law unto itself. Therapeutic mineral recommendations in the readings were always individualized. What follows describes the general principles and clinical associations the readings establish for each mineral — not prescriptions applicable to all individuals.

Calcium

Calcium is treated in the readings as the most structurally fundamental of all minerals — essential for bone, teeth, and nails, but also for circulatory, nervous, and coagulative function. For example, when asked about the effect of calcium gluconate nutritional supplementation, the reply indicated a coagulative role: "Supplying elements in the blood supply for better coagulation"

(257-198). Calcium deficiency is also associated with impaired superficial circulation and reduced resistance. One reading identifies calcium support as necessary for rebuilding resistance following depleting illness, noting that drosses combined with tonsil-related poisons had produced "an ACUTE condition in the form of neuritic pressures" (460-6).

The equally important pathology of excess calcium — particularly when combined with excess potash in conditions of poor elimination — is described in another reading. The combination produces "irritation to ligaments at bone ends, and then the hardening or the drawing of same to the extent that the stiffness and the irritation is the result of same in the ganglia, in the nerve ends, as attach themselves to the bone, in sinew and muscular forces" (952-1). This is the calcium-potash polarity at its most clinically specific: both elements, when they accumulate beyond the body's capacity to eliminate them, deposit in areas of slowed circulation and produce arthritic and adhesive conditions.

The blood's essential mineral constituency is identified directly in one reading: "In blood there must be iron, silicon, calcium, soda and those elements for its constituencies" (2436-3). This passage places calcium within the blood's compositional framework alongside iron, silicon, and sodium — confirming that the readings recognize calcium not merely as a structural mineral but as an active blood constituent.

The readings' preferred calcium sources are consistently organic — dairy products, leafy vegetables, and foods such as salsify, carrots, and sea vegetables. The readings show a preference for naturally bound calcium over inorganic calcium salts (257-198), consistent with their general principle that assimilation from food outperforms supplementation.

Iron

Iron is understood primarily as the blood-building and oxygen-carrying mineral — essential for hemoglobin, vitality, and the replenishing forces of the red blood supply. One reading places iron at the center of the nerve- and blood-building diet: "A diet easily assimilated, and that is nerve and blood building; hence carrying iron and silicon would be the better" (463-1). Raisins and dates appear as natural iron sources in one reading (121-1), while green leafy vegetables — particularly those growing above the ground — appear throughout as the preferred dietary iron sources.

Iron's value in the readings depends critically on the body's capacity to process it from food into the blood supply. The liver, the lacteals, and the stomach are all implicated in this assimilative process, and conditions affecting any of these organs are understood to compromise iron utilization regardless of dietary intake. Iron is confirmed as part of the blood's essential mineral constituency alongside silicon, calcium, and sodium in a reading which further notes that each tissue type requires its own character of mineral combination: "In blood there must be iron, silicon, calcium, soda and those elements for its constituencies other THAN that influence carried in same. In bone another form of calcium and combinations of other elements. The same in muscle, in skin. Also the same in nerve" (2436-3).

Silicon

Silicon occupies a distinctive place in the readings' mineral framework as iron's paired complement. The two minerals appear together so consistently in dietary recommendations that they should be understood as a functional unit in the readings' nutritional approach.

One reading names them together: "a diet easily assimilated, and that is nerve and blood building; hence carrying iron and silicon would be the better" (463-1). Calcium joins the pairing in another reading: "In the diet keep towards those things that carry plenty of iron, silicon and lime" (585-3). A third confirms the triad: "plenty of calcium in the system for developing of bone and muscle tissue. Most of this, of course, may be had from raw milk, or those vegetables that carry calcium and silicon and iron in the ways and manners that may be assimilated" (540-7).

The specific role of silicon in the readings is structural and connective, identifying silicon as creating "stamen in the muscle, and especially the tendons of the body" — a tensile strength role in the connective tissues (275-28). Silicon is confirmed as a necessary blood constituent in reading 2436-3. The foods identified as good silicon sources in the readings include steel-cut oats, spinach, apples, barley, egg yolk, leafy greens, whole grains, carrots, and most green vegetables (120-1 report). Silicon is worth noting as a mineral the readings emphasize nutritionally even though it is not currently classified as an essential dietary mineral in modern nutritional science.

Iodine

Iodine is one of the most consistently recommended minerals across the physical readings, with a particularly strong association with glandular function, the thyroid, and potash-iodine balance. One reading describes the mechanism of Atomidine — the readings' preferred form of atomic iodine — in terms of glandular stimulation: "This is to make for the stimulation to the glands throughout the system, of those influences that will aid these secretions to be not increased but stimulated, that their activity and their vitality are

strengthening rather than at times drawing upon other portions of the body in these disturbing influences" (751-1).

Proper iodine-potash balance is emphasized: "Fish, and shell fish — these are good for the body, supplying the iodine necessary to overcome too much of a tendency of potashes in the body" (2654-2). When potash accumulates in excess — as tends to occur in cases of poor elimination, excessive starch consumption, or certain spinal pressures — the readings recommend iodine supplementation through seafoods or Atomidine to restore the balance.

What happens when iodine appears to be in excess is addressed in another reading. The response is not to reduce iodine but to add phosphates to bring balance: "There isn't a need for the elimination of this excess; rather would there be added those phosphates that would carry WITH same an equal balance — and that would make for a STRENGTHENING to the system that would cause the pulsations, the ganglia along the cerebrospinal system, the activities of the organs and the quickening of the pulse, to become nearer balanced in the system" (404-4). This reflects the readings' characteristic relational approach: the answer to mineral imbalance is rarely elimination but rather restoration of the complementary element.

Atomidine's properties are described clearly: "non-poisonous, non-toxic, but is healing to mucous membranes, is an astringent and a healer and a purifier of tissue in the body" (1125-2). Atomidine — a form of atomic or colloidal iodine — is distinguished throughout the readings from the standard pharmacological preparations of potassium iodide and tincture of iodine, which appear in the earlier readings and are considered less suitable for internal use at the doses the readings sometimes recommend.

Dietary iodine sources identified in the readings include seafoods of all kinds — oysters, clams, lobster, shrimp, scallops, crawfish — as well as mushrooms, onions, tomatoes, pineapple, garlic, and kelp (120-1 report). This iodine-rich seafood recommendation connects directly to the phosphorus-gold-iodine triad of nerve and gland-building that runs through many of the dietary recommendations.

Phosphorus

Phosphorus is understood primarily as a nerve- and brain-building mineral, and its most important associations in the readings are with nerve tissue, glandular function, and the phosphorus-iodine pairing in seafoods. The clearest statement of phosphorus's role is: "Be sure that the foods supply are abundant with phosphorus, with those of properties that carry those that are nerve BUILDING in their reaction" (2654-2). Phosphorus is paired with gold as among the most effective elements for addressing anemia in another reading, which specifically recommends conch soup and southern seafoods as dietary sources (698-1). The superiority of food-based phosphorus over synthetic preparations is emphasized: "its assimilation from synthetic concoctions is oft hard upon the body. The assimilation of same from food values then becomes much more not only palatable but activative with the influences of the body" — with artichokes, rutabagas, and turnips identified as particularly good dietary sources (1173-8). A complementary dietary recommendation pairs these with "vegetables as carrots, salsify, squash, the rind of Irish potatoes (not the pulp), okra" as foods carrying both phosphorus and gold in assimilable form (698-1).

Potassium (Potash)

Potassium is treated in the readings as a nerve-building and balancing mineral, appearing consistently in nerve contexts throughout the readings. The calcium-potash polarity is the most

clinically significant mineral pairing in the readings. One reading describes excess potash alongside excess calcium in conditions of poor elimination as producing joint stiffening, tendon adhesions, and cartilaginous deposits, with the therapeutic approach being dietary reduction of both, supported by Epsom Salts packs and Gold solution to aid elimination (952-1).

Potash is placed in a three-way balance with phosphorus and iodine in one reading: seafoods supply the iodine "necessary to overcome too much of a tendency of potashes in the body," while phosphorus in those same foods supports nerve rebuilding (2654-2). This triangular mineral relationship — potash, iodine, and phosphorus — represents one of the more sophisticated mineral interaction frameworks in the readings.

The potash-sodium polarity is framed philosophically in another reading: "the proper chemical balance in same — the fusion of the activities from the material angles that are acid and alkaline; also the potash and activities in its forces that become the making of materiality by the activity of mind upon same in its influence in the physical forces of self" (826-11). Even mineral balance, the readings suggest, reflects the mental and spiritual forces operating through the physical body.

Sodium

Sodium appears in the readings primarily as sodium chloride and in alkalizing compounds — sodium bicarbonate and sodium carbonate. Its most emphasized function is maintaining acid/alkaline balance and supporting digestive function.

One reading describes the therapeutic combination of Chloride of Gold with a soda solution as producing an immediate reaction with the salivary gastric juices — "that should be in an alkalin state" (743-

1). Sodium's place in the essential mineral dietary spectrum alongside iron, silicon, magnesium, and phosphorus is confirmed in another reading: "Be mindful that the diets are those that add iron, silicon, magnesium, and phosphorus, to the body" (1909-2). Reading 2436-3 includes "soda" among the blood's essential mineral constituents alongside iron, silicon, and calcium.

Sulfur

Sulfur is understood as an eliminative and purifying mineral, primarily associated with the lymphatic and emunctory system and the skin as an eliminative channel. One reading describes the external therapeutic use of "balsam of sulphur" massaged into the lumbar and sacral region and along the limbs — a transdermal application intended to aid elimination (5706-3). The readings occasionally recommend wearing sulfur in the shoes as a gentle form of transdermal supplementation that supports eliminative activity through the lymphatics and skin without burdening the digestive tract. One reading notes that silicon and manganese in tap water can interfere with the proper activity of atomic iodine, illustrating the readings' sensitivity to mineral interactions even in environmental contexts (1125-2). The sulfur food sources identified in the readings' nutritional records include raw egg yolk, shrimp, cruciferous vegetables (Brussels sprouts, cabbage, horseradish, cauliflower, kale), onions, garlic, turnip, radishes, cucumbers, and asparagus (120-1 report) — a list remarkably consistent with modern understanding of organic sulfur compounds in foods.

Gold

Gold is unique among the minerals discussed in the readings in having both a dietary dimension and a major therapeutic dimension, with the majority of its therapeutic applications relating to Chloride

of Gold used through the Wet Cell Appliance and Radio-Active Appliance rather than to dietary gold.

The dietary role of gold in the readings is consistently linked to seafoods. "NOTHING more effective in the blood supply than Gold, that we obtain from the seafoods; such as oysters, clams" (698-1). Gold is paired with phosphorus as a dietary recommendation in the same reading: "In the diet, keep much of that which will add more phosphorous and gold to the system; as we will find in certain of the vegetables as carrots, salsify, squash, the rind of Irish potatoes (not the pulp), okra."

The readings associate dietary and vibratory gold primarily with nerve and gland rebuilding. One reading describes the therapeutic mechanism of Chloride of Gold via the Radio-Active Appliance as working "primarily with that of the nerve system and its effect as is created in the various portions of the system by the change in the temperature, and the change in the slowing up of the active forces" (1800-16). The role of glandular forces in utilizing gold is confirmed in another reading: "In each element of the body-energies, there are those glandular or cell forces that take from that assimilated the necessary influences for the strengthening of various portions of the body" (2436-3).

A gold-silicon dietary pairing for nerve center support is established in one reading, recommending "foods that carry silicon and the salts that may revibrate with the applications of the Gold to the nerve centers for assimilation" — tuberous vegetables of all kinds (3694-1). This gold-silicon dietary pairing for nerve center support is a distinctive and recurring theme in the readings' nutritional framework.

It is worth noting here that the readings' emphasis on gold as a physiological element — present in trace amounts in seafoods and certain vegetables, and therapeutically active through vibratory means — represents a perspective well outside mainstream nutritional science but consistent with the readings' broader understanding of trace elements as vibrationally active forces in the body.

Magnesium

Magnesium is referenced throughout the readings with less frequency than calcium or iron but with meaningful clinical consistency. One reading explicitly includes magnesium in a dietary prescription alongside silicon, sulfur, and iodine: "The corrections, then, should begin WITH THE DIET FIRST — which shall add to the system those especially of magnesium, silicon, and sulphur — with iodine well distributed in the diet" (120-1). Another includes magnesium in a general mineral dietary recommendation for circulatory and eliminative health: "Be mindful that the diets are those that add iron, silicon, magnesium, and phosphorus, to the body" (1909-2).

The food sources for magnesium identified in the readings' nutritional recommendations include citrus fruits, egg yolk, spinach, coconut, goat's milk, tree nuts (almonds, walnuts, beechnuts, chestnuts), whole grains (rye, oats, barley, whole wheat), and various fruits and vegetables (120-1 report) — a list consistent with modern nutritional understanding of magnesium-rich foods. One reading notes that certain alkalizing preparations had lost some of their magnesium content, suggesting the readings were aware of magnesium's role in the alkalizing function of such remedies (1541-12).

Zinc

Zinc appears in the readings almost exclusively in the context of energy medicine appliances — specifically as a component of the Wet Cell Appliance solution (copper sulphate, zinc, charcoal, and sulfuric acid in water). Zinc is also mentioned as a water contaminant alongside silicon and manganese that can interfere with Atomidine's effectiveness (1125-2).

Unlike gold, phosphorus, iron, or silicon, zinc does not appear in the readings' dietary recommendations with any frequency, and its physiological role in the readings is essentially restricted to the energy medicine context. This is a notable divergence from modern nutritional science, in which zinc is recognized as an essential trace mineral with broad functions in immune activity, wound healing, DNA synthesis, and enzyme function.

Manganese

Manganese appears in the readings almost entirely in industrial and metallurgical contexts — its role as a component of steel alloys, furnace fluxes, and ore processing being the dominant theme (readings 470-13, 1196-8, 1561-3, 1734-5). The single health-relevant manganese reference identifies silicon, manganese, and other properties in tap water as interfering with Atomidine's effectiveness — positioning manganese as a potential disruptor of iodine therapy rather than as a nutrient (1125-2). One reading recommends oysters as an iron source while noting to use "as little of copper or manganese as possible" from that source — suggesting a dietary awareness that certain seafoods carry manganese along with iron, and that this may not always be desirable (4164-1).

The readings do not develop manganese as a nutritionally significant mineral in the physiological or clinical sense. This

contrasts with modern nutritional science, in which manganese is recognized as an essential trace mineral involved in bone formation, amino acid metabolism, and antioxidant defense. For the purposes of this text, manganese should be noted as a mineral that appears in the readings primarily in non-physiological contexts.

Mineral Polarities: The Readings' Broader Framework

The most distinctive feature of the readings' mineral philosophy is not the individual treatment of any single element but the consistent emphasis on mineral relationships and polarities. One reading establishes that each tissue type — blood, bone, muscle, skin, nerve — requires its own specific mineral combination, and that the body's glandular forces are responsible for extracting from what is assimilated the specific minerals each tissue needs (2436-3). The readings recognize several recurring mineral pairings that should be understood as organizing principles of their mineral framework:

Calcium and potash — the primary structural polarity, governing joint, cartilaginous, and bone health. Excess of either produces deposition and stiffening (952-1).

Iron and silicon — the blood and connective tissue building pair, consistently recommended together in dietary contexts (463-1, 585-3, 540-7).

Phosphorus, iodine, and gold — the nerve and gland rebuilding triad, concentrated in seafoods and associated with thyroid and glandular stimulation (2654-2, 698-1).

Sodium and potash(acid and alkaline) — the broader chemical polarity of the system, governing acid/alkaline balance through the coordinated activity of these elements (826-11).

Magnesium, silicon, sulfur, and iodine — the eliminative and structural dietary quartet, recommended together as a foundational dietary correction in reading 120-1.

These pairings and groupings reflect the readings' fundamentally systemic view of mineral nutrition: the body is not a collection of isolated biochemical pathways but a coordinated whole in which minerals operate in dynamic, relational balance with one another. Getting any single mineral right while neglecting its complementary elements is insufficient — the readings return consistently to the principle that balance among elements matters as much as the adequacy of any individual one.

Modern Context

All thirteen minerals discussed in the readings are recognized in modern nutritional science as essential or trace elements — though the readings' understanding of their functions and interactions differs in important ways from current biochemistry. The readings' emphasis on food sources over supplements, their recognition of mineral interactions and polarities, and their individualized therapeutic approach to mineral balance are all consistent with directions in which nutritional science has moved in recent decades, particularly in the fields of nutrigenomics and systems nutrition. Whether the specific pairings and polarities the readings describe — such as the calcium-potash or phosphorus-iodine balance — will find formal biochemical validation remains an open question appropriate for future research.

2.2.9 Vitamins

Overview

Vitamins occupy a distinctive and conceptually unusual place in the physical readings. The readings engage vitamins with considerable

sophistication for the period — naming specific vitamins by letter, assigning them precise physiological functions, and identifying their primary food sources. At the same time, the readings' understanding of what vitamins fundamentally are differs substantially from the modern biochemical definition, and the vitamin nomenclature they employ reflects the state of nutritional science during the 1920s through 1940s rather than the current classification system. Both dimensions — the readings' conceptual framework and their specific vitamin assignments — require careful attention.

A preliminary note on terminology: the word "vitamin" is spelled "vitim" in numerous early readings (487-2, 4768-1, 3911-2, and others), and "vitamine" in certain middle-period readings. These variant spellings confirm that the concept was being introduced into clinical discourse contemporaneously with the readings — it was new enough that its spelling had not yet been standardized in common usage. One middle-period reading uses "vitamines" in a context that reveals its meaning clearly: "it has the vitamins of the wheat germ in same; and you do not destroy that by cooking in the proper way and manner" (1688-2). The readings' engagement with vitamins thus spans the entire arc of their development as a recognized nutritional category in early twentieth-century medicine.

What Are Vitamins? The Readings' Own Definition

The readings offer two distinct conceptual characterizations of vitamins, both of which diverge significantly from modern biochemistry and both of which are worth preserving in the readings' own words. The first and most striking appears in reading 341-31:

Vitamins in a body are elements that are combative with, or in opposition to, the various activities of a living organism, and may be termed — and well termed — as

those of bacilli of any nature within a human or physical organism. (341-31)

This characterization has no parallel in modern nutritional science. The readings describe vitamins not as passive chemical compounds awaiting metabolic conversion but as dynamic, combative agents that actively oppose destructive forces operating within the organism — analogous in their activity to the bacilli (microorganisms) that also operate within the body, but in a beneficial rather than pathological direction. This combative quality is connected directly to freshness in one reading, which describes fresh fish as carrying "more of that vitamin as makes for stamen [stamina] in the vital forces of reproduction of EVERY form OF life in the system. Remember, this is for good and bad influences or bacilli as may be in body!" (501-1) — explicitly pairing vitamins' vitality with their freshness and their opposition to harmful bacilli.

The second characterization appears in reading 2072-9, which describes vitamins' relationship to the glandular system:

They are food for same. Vitamins are that from which the glands take those necessary influences to supply the energies to enable the varied organs of the body to reproduce themselves. (2072-9)

This framing positions vitamins as the glands' raw material — the specific nutritional inputs from which the body's glands extract what is needed to maintain the reproductive and regenerative capacity of each organ and tissue. The same reading continues with the observation that different organs require different vitamins because they are reproduced through different glandular processes: "Would it ever be considered that your toenails would be reproduced by the same as would supply the breast, the head or the

face? or that the cuticle would be supplied from the same as would supply the organ of the heart itself?" (2072-9). This recognition of tissue-specific nutrient requirements is consistent with modern understanding of differentiated cellular nutrition, though the mechanism the readings describe — glandular mediation — differs from the biochemical framework.

A third dimension is established in one reading — the fundamental distinction between vitamins and minerals in the readings' framework: "Elements referred to ... are rather from the mineral kingdom, while the elements referred to from the vitamin forces are from the plant life" (440-16). Vitamins are of the plant kingdom; minerals are of the mineral kingdom. Together they form the complementary nutritional foundation of the body's self-renewal.

The Vitamin Nomenclature of the Readings

The readings employ the vitamin nomenclature current during the period they were given — primarily the 1920s through 1940s — which differs in important ways from the modern classification. The vitamins most frequently named are A, B, B-1, C, D, E, G, and K. Vitamin G was the period designation for what is now called riboflavin (Vitamin B2). The readings use it as a distinct category with specific functional assignments. Vitamin B-1 is consistently distinguished from B as a separate entity, corresponding broadly to what is now called thiamine.

Vitamins and Their Specific Functions

The most systematic functional assignment of vitamins in the readings appears in reading 2072-9, organized as a direct answer to the question "What relation do the vitamins bear to the glands? Give specific vitamins affecting specific glands?" The response is

unusually comprehensive and deserves extended quotation as the closest the readings come to a vitamin reference guide:

These will begin with A — that supplies portions to the nerves, to bone, to the brain force itself; not all of this, but this is a part of A. B and B-1 supply the ability of the energies, or the moving forces of the nerve and of the white blood supply, as well as the white nerve energy in the nerve force itself, the brain force itself and the ability of the sympathetic or involuntary reflexes through the body... In these we have that supplying to the chyle that ability for it to control the influence of fats, which is necessary to carry on the reproducing of the oils that prevent the tenseness in the joints, or that prevent the joints from becoming atrophied or dry, or to creak. In C we find that which supplies the necessary influences to the flexes of every nature throughout the body, whether of a muscular or tendon nature, or a heart reaction, or a kidney contraction, or the liver contraction, or the opening or shutting of your mouth, the batting of the eye, or the supplying of the saliva and the muscular forces in face... It is that from which the structural portions of the body are stored, and drawn upon when it becomes necessary. G supplies the general energies, or the sympathetic forces of the body itself. These are the principles. (2072-9)

This passage is the readings' single most important vitamin statement and establishes the functional assignments discussed below.

Vitamin A — associated with nerves, bone, and brain force. Food sources include cod liver oil, egg yolks, green and yellow vegetables, and liver. One reading describes cod liver oil as "SUNLIGHT taken into the gastric forces, of especially the duodenum" (501-1) — a

poetic but physiologically apt description that links the fat-soluble, light-derived vitamin to the duodenum's role in fat digestion and assimilation.

Vitamins B and B-1 — associated with nerve energy (cerebrospinal and sympathetic), white blood supply, involuntary reflex function, and the management of fats through the chyle. The joint-lubricating function attributed to B vitamins — "the oils that prevent the tenseness in the joints, or that prevent the joints from becoming atrophied or dry" (2072-9) — connects the B complex to the readings' broader emphasis on lacteal duct function and fat digestion.

B-1 (thiamine) receives particularly extensive coverage in the readings. Its most important clinical characteristic is stated directly in one reading: "B-1 is a vitamin not stored in body, but it is necessary that there be the consumption of such each day" (257-236). This is clinically accurate — thiamine is indeed water-soluble and not stored in significant quantities. The same reading identifies yellow-colored foods as the primary B-1 source: "All foods yellow in their nature, that are naturally yellow, carry B-1" — citing citrus juices, whole cereals, whole wheat, and especially the outer green leaves of leafy lettuce. Yellow vegetables are confirmed as B-1 sources in another reading: "yellow variety of squash, carrots, wax beans, peaches, all of these are well" (5319-1).

B-1 is specifically linked to coagulation. One reading recommends five to ten days of B-1 stimulation before any surgical procedure to establish proper coagulation (337-27), and another confirms: "The B-1 is needed more than just B, in the vitamins" for proper coagulative healing after incision (257-222).

Vitamin B is associated with three minerals in one reading: "B, as is of calcium, of silicon, of iron" (341-31). This passage establishes B

vitamins as nutritionally integrated with the mineral triad identified in Section 2.2.8 as essential blood constituents, suggesting a coordinated nutritional system rather than independent nutrient categories.

Vitamin C — associated with the "flexes of every nature throughout the body" — the mechanical action of muscles, tendons, and contracting organs — and with the structural reserves of the body drawn upon in times of stress. The emphasis on flexion and structural integrity is consistent with Vitamin C's modern role in collagen synthesis, which provides the structural matrix of connective tissues, tendons, and blood vessel walls. Mental stamina is added to Vitamin C's functional profile in one reading: "stamina for mental energies that are carried in the white tissue in nerve energy and plexus" (341-31).

Vitamin C and Vitamin G are described as "very close akin" in their relationship to glandular stamina in one reading — "these produce a lack of stamina in system" when deficient together (5613-1).

Vitamin D — associated primarily with cod liver oil and sunlight. Cod liver oil is among the most frequently recommended vitamin sources in the readings, serving as the primary vehicle for Vitamins A and D together. One reading describes cod liver oil as making "for carrying certain vitamins for the building in the system" alongside olive oil (632-6). Another notes that cod liver oil "makes an overabundance of D, in a manner for the system" when used — recognizing it as a concentrated Vitamin D source that must be balanced with other nutrients, particularly B-1 (568-3). The combined vitamin complex of cod liver oil is acknowledged in one reading as providing "co-resistances in the vitamins that such carry into the body" — acknowledging that the value of cod liver oil is not

simply its vitamin D content but its combined vitamin complex that supports systemic resistance (1278-6).

Vitamin E — associated primarily with wheat germ oil as its preferred source, and appearing in contexts of general rebuilding and reproductive tissue vitality. Liquid wheat germ oil is described in one reading as "more effective than that prepared in the gelatin capsules" because freshness matters and because liquid form "is assimilated first with the upper gastric flow" (1158-36) — again reflecting the readings' preference for nutrients in their most bioavailable organic form. Wheat germ oil is recommended specifically for periods of hormonal adjustment in another reading — "for everyone when there is a period close to the menopause, or adjustments of any nature" (538-53) — consistent with Vitamin E's modern association with reproductive hormone function. A role in sensory tissue maintenance extending beyond reproductive function appears in one reading recommending wheat germ oil for eye strengthening: "the assimilations must carry more vital energies and thus suggestions for wheat germ oil, and B-1 vitamin complex" (5170-1).

Vitamin G — identified as supplying "the general energies, or the sympathetic forces of the body itself" (2072-9) — placing riboflavin in relation to the sympathetic nervous system's vegetative and regulatory functions. Vitamin G is listed among the vitamins carried by Codiron (alongside B, C, and A) in treating a glandular condition affecting the thyroid, noting that "all of these combined with the activities of the system...will aid in cleansing and correcting this condition" (584-6).

Vitamin K — identified alongside B-1 and G as deficient in arthritis cases where the diet is "too purified," with coarser foods recommended as sources: New Orleans molasses, black molasses,

corn bread, and dark leafy greens (mustard, spinach) (1224-5). This is consistent with modern understanding of Vitamin K's presence in dark leafy greens and fermented foods, and with its role in coagulation — which the readings emphasize throughout the blood factors sections.

Nicotinic Acid and Niacin: B-1's Product

The readings' treatment of nicotinic acid (now known as niacin, or Vitamin B3) is particularly instructive because it reveals how the readings understand the B vitamin complex as an interrelated system rather than a collection of independent compounds. One reading provides the clearest definition:

Nicotinic acid — it is that found especially in green leaves of lettuce, celery, cabbage and the like. It is a product of the B-1. It is that element which in the system aids in production of the leucocytes in the blood, or their element of activity. (257-236)

Three points in this reading deserve attention. First, nicotinic acid is described as a product of B-1 — arising from B-1's activity in the body rather than being a separate, independently ingested vitamin. This understanding is consistent with modern biochemistry in a general sense — niacin can be synthesized from the amino acid tryptophan — though the readings frame this as a derivative relationship to thiamine specifically rather than to tryptophan. Second, its primary food sources are identified as the outer green leaves of lettuce, celery, and cabbage — among the very foods that reading 257-236 recommends over the inner, paler portions typically consumed. Third, its primary function is identified as supporting leucocyte production and activity — connecting it directly to the immune and coagulative system described throughout Section 2.2.

Niacin appears by name in later-period readings, consistently paired with iron and the B complex as a blood-building and resistance-supporting nutrient cluster. The systemic consequences of niacin-iron-phosphorus deficiency are identified in one reading: "Unless corrected, these will eventually have much to do with a form of disturbance with kidneys and bladder, as well as the greater disturbance in lung area and the liver. For, the pressures are such as to cause an aggravation to the sympathetic nervous reactions" (3479-1). This multi-organ consequence of combined B complex and mineral deficiency reflects the readings' integrative view of nutritional insufficiency as a systemic rather than an organ-specific problem.

A particularly significant clinical statement appears in one reading — that adequate dietary niacin, iron, and B complex may serve as an alternative to thyroid medication in some cases: "if there is sufficient of the food values carrying iron, the B-Complex, niacin and the like, these with the proper stimulations should make for better conditions than for the glandular forces being dependent upon this particular form of activity" (2882-1). This links the niacin-iron-B complex cluster directly to glandular and thyroid support — consistent with the readings' understanding of these nutrients as gland food.

Food Sources and Vitamin Preservation

The readings consistently emphasize that vitamins are best obtained from fresh, minimally processed foods rather than from supplements. The preference is stated explicitly for B-1 in one reading: "the B-1 activity is much better taken in foods than in the segregated pellets or capsules. When it is impractical for obtaining the foods with sufficient quantities for the daily needs, very well to take B-1. But to overstress same may at times cause the reaction of the VERY distress that is attempting to be aided!" (257-236) — a

caution against over-supplementation striking for its period and consistent with modern understanding of nutrient excess.

The readings recognize that vitamins are destroyed by improper food preparation. One reading cautions that whole wheat should not be cooked "too long so as to destroy the whole vitamin force in same" (840-1). Another notes approvingly that properly cooked wheat germ does not destroy its vitamins (1688-2). Steam pressure cooking "rather preserves than destroys" vitamins — consistent with modern understanding that steam cooking better preserves water-soluble vitamins than boiling in water (462-14).

An important dietary principle connecting vitamin preservation to cooking method appears in one reading: vegetables should be prepared "in their OWN salts, or OWN fluids; NOT as cooked other than in a steamer or in Patapar paper. And use the juices of same as a portion of the diet, for the vitamins and the necessary salts that will create the fluids in the system are found in these" (631-6). The juices released during cooking — typically discarded — are identified as containing the vitamins and mineral salts of the food.

The readings also caution that fresh preparations are preferable to aged or preserved ones. Liquid wheat germ oil is described as superior to gelatin capsules not only for assimilation reasons but because "it is not always as fresh" in capsule form (1158-36) — emphasizing that the living, combative quality of vitamins described in reading 341-31 depends on freshness.

Vitamins and Physical Activity

One reading introduces a physiological principle about vitamins that has no parallel in modern nutritional science: vitamins require physical activity to become beneficial rather than accumulating as drosses. If the body is inactive, vitamins taken in "become drosses

and set THEMSELVES to become operative, irrespective of OTHER conditions" (341-31) — meaning they may accumulate and become pathologically active rather than nutritionally useful. This principle reflects the readings' broader understanding that assimilation and activity are inseparable: nutrients consumed without the physical activity that would put them into use may accumulate as drosses rather than being properly metabolized and utilized.

Modern Context

Modern nutritional science identifies thirteen essential vitamins — four fat-soluble (A, D, E, K) and nine water-soluble (C and the eight B vitamins) — each with specific biochemical functions. The readings' vitamin designations correspond approximately but not exactly to this modern classification. Vitamin G corresponds to riboflavin (B2); the B/B-1 distinction in the readings corresponds roughly to niacin/thiamine within the B complex; and nicotinic acid is described in reading 257-236 as a product of B-1 functioning in leucocyte production, which finds a general parallel in modern understanding of B vitamins and immune function.

The readings' characterization of vitamins as "bacilli-like" combative forces has no equivalent in modern nutritional biochemistry, which defines vitamins as organic compounds required in small amounts for normal metabolic function. However, the readings' practical emphases — food sources over supplements, fresh over processed, steam over boiling, cooking juices retained rather than discarded, physical activity required for vitamin utilization — all anticipate principles that modern nutritional science has independently arrived at through different theoretical pathways. The caution against over-supplementation (257-236) anticipates modern understanding of vitamin toxicity. The recognition that different tissues require different vitamins (2072-9) anticipates the modern

understanding of tissue-specific nutrient requirements. And the integration of vitamins with minerals as a coordinated nutritional system — rather than independent variables — anticipates the systems nutrition approach now emerging in contemporary research (Scott-Boyer et al., 2016).

2.3 Circulation

Overview

The physical readings treat circulation as one of the two primary organizing systems of physiology — coordinate in importance with the nerve system. Where the nerve system governs impulse, coordination, and the relationship between the body's voluntary and involuntary activities, the circulatory system governs supply and return. It regulates the continuous movement of blood, lymph, and vital forces through the body's tissues, delivering nourishment and removing waste. No organ functions normally without adequate circulation, and no pathological condition in the readings fails to involve some circulatory disturbance, whether as cause, effect, or both.

The readings organize circulation into two fundamental patterns — deep and superficial — whose proper coordination is as important as the adequacy of either individually. This deep/superficial distinction is one of the most clinically significant frameworks in the readings' physiological vocabulary, and it underlies much of what the readings describe throughout the blood supply section. Understanding these two patterns and their relationship to one another is therefore essential preparation for the organ and nerve chapters that follow.

Reading 4832-1 provides an explicit structural description of the deep circulatory pattern: "we have in this body a deep circulation

that is not governed as much as it should be by the capillary circulation, or the arteries carry away from the body, that is the heart and lungs, much more of the blood than comes back normally" (4832-1). This passage captures the directional logic of the deep circulation — arterial flow moving outward from the heart and lungs through the internal organs, with the return circulation potentially inadequate when the system is disturbed. The deep circulation's relationship to the hepatic system is established in another reading: "the indications of toxic forces that are as drosses or hindrances, by the non-activity of the organs of the hepatic circulation" (1021-1) — confirming that when the hepatic system is disturbed, its effects propagate outward through the entire body.

2.3.1 Deep Circulation

What the Deep Circulation Is

The deep circulation in the readings refers to the blood flow through the primary organs of the body's interior — principally the liver, kidneys, heart, lungs, and digestive system. The readings sometimes use "hepatic circulation" and "deep circulation" interchangeably, a usage that reflects the liver's central position in this internal circulatory pattern.

The Hepatic System and Its Organs

The term "hepatic circulation" is used in the readings in several overlapping senses, all of which center on the liver as the primary organ of the deep system. The liver and kidneys are identified in one reading as "the positive and negative poles of the system — or in the hepatic circulation" (908-1) — establishing the liver-kidney axis as the fundamental polarity of deep circulatory function. This battery metaphor — liver as positive pole, kidneys as negative pole — appears across the readings and reflects the understanding that the

liver and kidneys function as complementary and coordinated partners, each dependent on the other for normal physiological activity.

The readings describe several distinct aspects of the hepatic circulation: the upper hepatic circulation refers to the circulatory relationship between the liver, heart, and lungs; the lower hepatic circulation refers to the relationship between the kidneys and urinary system; and the hepatic circulation in its narrowest sense refers to the direct relationship between the liver and kidneys as paired eliminative poles. The liver's eliminative primacy within this system is stated explicitly: "the liver and the kidneys" represent "the positive and negative poles of the system" through which the hepatic circulation's balance is maintained (908-1). When this balance is disrupted — whether by torpidity in the liver, congestion in the kidneys, or nerve pressure impinging on either organ — the effects ramify throughout the entire deep circulatory system.

Twice Through The Liver

One reading contains a striking statement about the liver's circulatory primacy: "twice does the blood pass through the liver, to once in the heart" (341-31). This claim does not correspond to the standard modern description of the hepatic circulation, in which blood passes through the liver via the hepatic artery and the portal vein simultaneously rather than sequentially and in double quantity. However, it reflects the readings' consistent understanding that the liver's filtering and processing activity is more extensive and primary than the heart's pumping function — that the liver, not the heart, is the body's principal blood-conditioning organ.

This understanding is consistent with the readings' frequent description of the liver as the blood's "clearing house" (341-31) — the organ through which both the incoming blood from the digestive

system and the outgoing blood returning from the systemic circulation must pass before the blood is returned to the heart and lungs for reoxygenation. Whether the "twice through the liver" claim reflects a specific anatomical observation about the portal and hepatic circulations operating in sequence, or a more functional statement about the liver's relative importance, is a question the readings do not resolve explicitly.

Cold and High Hepatic Circulation

The readings describe two pathological states of the hepatic circulation with particular frequency: a cold or sluggish hepatic circulation, and a high or overactive hepatic circulation.

A cold hepatic circulation indicates blood flow through the liver and kidney system that is below normal in volume, temperature, and activity. The condition produces bearing-down pains in the right side, nerve contraction from inadequate circulation, and a general sense of heaviness and sluggishness in the torso, as one reading states directly: "the circulation between the liver and the kidneys of this body is below normal. Hence there are times felt by the body when there are pains, or bearing down pains throughout the right, and then changing to the left side, when the reaction or reality of pain is a nerve contraction by the lack of the proper incentive to nerve supply" (3721-1).

A high hepatic circulation indicates the opposite state — excessive blood flow through the liver and associated organs, typically arising as a response to infection, toxic accumulation, or a torpid liver attempting to compensate for its own sluggishness. One reading describes a case in which deep circulation through the viscera is "above normal" despite subnormal temperature — a dissociation in which the organs are overworked even as the body as a whole is depleted (4832-1). A characteristic high hepatic cascade is traced in

another reading: torpid liver → constitutional habit of non-activity → deep circulation increase → bladder irritation → kidney heaviness, all without organic disease in the kidneys themselves (2105-1).

The compensatory relationship between these two pathological states is well established: "The liver is torpid in its functioning, producing a high hepatic circulation. The kidneys, with high circulation, the excess of poisons to be eliminated, the body across the lower lumbar to knees, suffers from taxation to these portions of the body, from the inability of the system to throw off the toxins" (159-1). A torpid liver paradoxically produces high hepatic circulation — the system compensates for the liver's insufficient activity by increasing blood flow through the hepatic system in an attempt to force more work through a sluggish organ. The kidneys then bear the secondary burden of this excess.

The Day/Night Cycle of Hepatic Circulation

Several readings describe a rhythmical alternation in the hepatic circulation between upper and lower patterns — a day/night or active/rest cycle in which the balance between upper hepatic (liver-heart-lung) and lower hepatic (kidney-urinary) circulation shifts according to the body's state of activity and rest. One reading illustrates this principle in a clinical context, noting that skin itching is "more acute during the night and day" because of "the variation in the circulation in activity and in that period when the body attempts to adjust itself for rest" (437-7). The superficial circulation's behavior — including its elimination of toxins through the skin — varies with this circulatory rhythm, producing symptoms that come and go in correspondence with the body's daily cycle.

This upper-lower alternation is described in therapeutic terms in another reading, recommending spinal massage downward from

the 9th dorsal "over the 4th lumbar area, the coccyx area and the lower limbs and the feet" specifically at rest periods — working with the body's natural evening shift toward lower hepatic and return circulation (1195-2). Night sweats arise when the superficial circulation is unable to coordinate properly with the body's nocturnal circulatory shift, and respond specifically to treatments that support superficial circulation regulation (4320-2).

Nerve Pressures and the Deep Circulation

The deep circulation is directly dependent on adequate nerve supply to the organs it serves. The readings trace multiple cases of hepatic circulatory disturbance — both high and cold — to nerve pressures in the dorsal and lumbar spine that impinge on the nerve plexuses governing the liver, kidneys, and associated organs. One reading describes a case in which high hepatic circulation is produced directly by "condition in the hypogastric centers, shows how this condition affects the liver direct, though not organically, for both excretory and secretive system is worked above normal" (2229-1). The same mechanism is traced in another reading: "The seat, or beginning, was first from the nervous forces to the body. The trouble has come from the body being depleted by over-taxation" (4127-1).

This nerve-to-organ pathway — in which spinal pressure impairs the nerve supply to hepatic organs, producing functional disturbance in the deep circulation — is one of the primary reasons the readings so consistently recommend manual therapy alongside dietary and eliminative measures in cases of hepatic dysfunction. Without restoring proper nerve incentive to the liver and kidneys, dietary and eliminative treatment alone addresses effects rather than causes.

2.3.2 Superficial Circulation

What the Superficial Circulation Is

The superficial circulation refers to blood flow in the vessels nearest the body's surface — the capillary network, the venous return circulation, and the lymphatic channels of the skin and peripheral tissues. The clearest anatomical definition in the readings is: "the superficial circulation — which is that called the capillary and the exterior or the RETURN circulation, see, that goes through the arteries, then into the veins. The vein is the superficial" (312-1). This explicitly identifies the venous return as the superficial circulation's primary component — the blood flowing back from the peripheral tissues toward the heart, having delivered its nutrients and oxygen at the capillary level.

The same reading extends the definition with a functional insight: "The circulation doesn't get away fast enough!" — describing the primary pathological tendency of the superficial circulation as sluggishness of the venous return, allowing blood to pool in the peripheral tissues rather than moving efficiently back through the heart. This stasis underlies many of the superficial circulation's characteristic manifestations — the swelling, blotching, skin eruptions, and cold extremities described throughout the readings.

The Superficial Circulation and the Sympathetic Nerve System

One of the most important associative relationships in the readings' circulatory framework is the link between the superficial circulation and the sympathetic nervous system. This association positions the superficial circulation as the circulatory expression of sympathetic nervous activity — and therefore as the primary site where mental-emotional disturbances manifest in the blood supply.

One reading describes this association dynamically: "The central system responds FIRST sympathetically, and causes the blood to rush to central portions more" (5671-13) — meaning that when the sympathetic system is activated (as by emotional stress, excitement, or nervous strain), blood is drawn from the superficial periphery toward the deep interior. The superficial circulation diminishes; the deep circulation increases. This is the mechanism behind the characteristic pallor, cold extremities, and skin dryness that the readings associate with sympathetic dominance and nervous excitement.

Mental stress producing sympathetic activation causes "an ABNORMAL respiratory reaction, or perspiration in various portions of the body — as just sweat, that comes from the MENTAL reaction" — the sympathetically driven superficial circulation expressing the mental state through aberrant perspiratory elimination (908-1). A specific spinal mechanism is traced in another reading: injury at the 9th dorsal producing nerve plexus impingements that "left the system lacking in some directions in the ability for the proper nerve impulse or flow" — directly cutting off superficial circulation through the nerve pathway and producing the toxic accumulation and eliminative dysfunction that follows (1110-1).

Superficial Circulation, Elimination, and the Skin

The superficial circulation's primary eliminative function is through the skin — the perspiratory channel that the readings identify as one of the four primary channels of elimination. When the superficial circulation is functioning normally, toxins and drosses are carried to the skin's surface and eliminated through the pores in proper coordination with the other eliminative channels. When it is

impaired, this surface elimination either fails entirely or becomes excessive and uncoordinated.

The compensatory pattern is described as: "there are carried activities in the superficial circulation — and eliminations through the perspiratory or respiratory system — that should be carried through other eliminating channels. Thus large pores are produced, or the opening for blotches or spots on portions of the body, especially in exposed parts of the body. And AT TIMES there are the indications in the emunctory centers of such conditions being under the skin; as under arm, in groin, about scrotum. Gradually they are being eliminated through these channels, forming at times irritations" (877-3). When the bowel and kidneys fail as primary eliminative channels, the superficial circulation is pressed into compensatory eliminative service — producing the characteristic skin manifestations that the readings treat as systemic indicators rather than local conditions.

This is confirmed in another reading: "toxic forces find their way through eliminations in the cuticle or the skin and respiratory system, thus making for irritations in portions of the body in the form of crustations and the resultant conditions in the cuticle itself on parts of the body — as a rash, as irritations in the skin" (593-1). The rash is not primarily a skin condition — it is a circulatory and eliminative condition that expresses itself at the skin's surface because the superficial circulation is the body's final available channel for toxic clearance. The temporal dimension is added in one reading: the variation between day and night in the superficial circulation's eliminative activity accounts for skin conditions that fluctuate through the daily cycle — worse at night when the body shifts its circulation toward rest and the superficial channels are more active in their eliminative effort (437-7).

Deep/Superficial Incoordination: The Central Pathological Pattern

The most clinically significant circulatory pathology described in the readings is not a disturbance of either the deep or superficial circulation in isolation but the incoordination between them. The readings describe a reciprocal relationship in which an excess of deep circulation comes at the expense of superficial, and vice versa — and in which the failure of coordination between the two produces a characteristic and recognizable clinical pattern.

When the deep circulation is dominant at the expense of the superficial — the more common presentation in the readings — the consequences include poor venous return; accumulation of toxins and drosses in the peripheral tissues; compensatory eliminative overload on the skin; and a characteristic heaviness, stiffness, and poor tissue repair in the extremities. This pattern may be traced to hormonal dysfunction as well as eliminative failure: "there is a crystallization of hormones in the circulation of lymph. Thus incoordination exists between the lymph or superficial circulation and the deeper circulation. Hence there are unbalanced conditions in the chemical forces of the body, as may be indicated by the tautness and even swelling at times in feet, ankles, knees, hands, shoulders" (3363-1).

When the superficial circulation is dominant at the expense of the deep — less common but clinically significant — the consequence is inadequate organ supply, with the visceral organs receiving insufficient blood for normal function while the peripheral tissues are relatively plethoric. This specific pattern can produce high blood pressure when the superficial circulation is "slower in its action in the return to the heart than in its flow from the heart to portions of

the system. Hence producing in the heart's action itself a high pressure in the conditions of the system" (4345-1).

Chronic deep/superficial incoordination can progressively damage the structural tissues: "the effects of the torpidity in the liver, the pressures upon the nervous system, have produced those disturbances now between the deep circulation and the superficial — which cause the joints, the tendons, the structural portions of the body to become (from the effect of the calciums, or too much of calcium) almost brittle, as it were" (1269-1). The calcium deposition mechanism from Section 2.2.8 — excess calcium accumulating in areas of slow circulation — here finds its circulatory context. It is the failure of coordinated deep/superficial circulation that allows calcium to settle rather than being properly distributed and eliminated.

Even a specific daily symptom can be traced to this circulatory incoordination in which afternoon headaches arise reliably at three o'clock from "the incoordination between the deep circulation and the superficial circulation, as we have indicated in the head" (1074-1). This is the body's attempt to achieve circulatory balance at the secondary cardiac plexus cycle producing predictable pressure symptoms at a fixed time each day.

Superficial Circulation, Separation, and Psychic Experience

One of the more unusual clinical observations involving patterns of circulation is the relationship between deep/superficial incoordination and experiences of physical separation or dissociation:

Hence the conditions that arise often for there to be a tendency of portions of the body in the extremities to appear or have the feeling of being SEPARATED from the rest of the body. And also those influences that make

for the periods when vision or dream or experiences are as if the body were SEPARATING itself from its physical being while the mental activities VISION that going on. These are very well if controlled, for it shows the activity of the PSYCHIC forces and psychic influences in the body being able to operate either with or separate from the physical being. (440-2)

The readings interpret these experiences — which in modern medicine might be classified as depersonalization or dissociation — as a consequence of impaired superficial circulation producing a physical looseness in the body's coordination between its deep internal activity and its peripheral presence. The readings do not pathologize these experiences entirely, noting that they "are very well if controlled" and reflect psychic capacities operating through the body — but they identify the circulatory substrate as requiring correction for the body to "function the better" as an integrated whole.

Superficial Circulation and Blood Pressure

The relationship between slow superficial circulation and low blood pressure is established in one reading: "this we find tends to be slow, especially in the superficial circulation or the portions near the epidermis. And this slowing naturally causes a subnormal blood pressure; and the extremities become numb or inclined to fag easily" (1765-1). This is the complement of reading 4345-1's observation that slow superficial return to the heart produces high blood pressure. The mechanism is directional: if arterial flow to the periphery is adequate but venous return is slow, blood backs up in the systemic circulation and pressure rises. If both arterial delivery and venous return are slow, blood pressure falls and the extremities are under-supplied.

The progressive consequences of chronic venous pooling in the superficial circulation are described in another reading: "tendencies for the superficial circulation to more and more dilate the broken cells in the veins along the limbs, and these tend to make for not only swelling in the feet (by the poor circulation created, for there is the slow return of the blood to the centers through which it must be carried through the system for purification) but this slowness tends to make for the accumulation of drosses in the system" (243-18). Varicose dilation of the peripheral veins leads to systemic toxic accumulation as the return circulation fails to carry drosses efficiently back for elimination.

2.3.3 Lymph and the Emunctory Circulation

The lymph and emunctory circulation has been discussed in detail in Section 2.2.2, where its relationship to the white blood and the immune system was developed. In the circulatory context, several additional points deserve emphasis.

The readings treat the lymph as a distinct circulatory system alongside — but not identical to — the blood's deep and superficial patterns. The lymph circulation is particularly associated with the superficial circulation and with the emunctory centers — the lymph nodes and glandular filtering stations that intercept and neutralize toxic material before it can damage surrounding tissue. One reading identifies the lymph circulation explicitly with the superficial: "incoordination exists between the lymph or superficial circulation and the deeper circulation" (3363-1) — treating the two as synonymous for clinical purposes in the context of peripheral elimination.

The lacteal duct system — the lymphatic channels of the small intestine — represents the deep dimension of lymph circulation, associated with assimilation and the transport of nutritive material

from the digestive tract into the general circulation. When the lacteals are functioning normally, the nutritive lymph (chyle) flows freely from the intestine into the thoracic duct and thence into the venous blood. When they are congested, adherent, or functionally impaired with "drying, or a tendency for the adhering together of the ducts in the lacteal area" (908-1) — the consequences extend throughout the digestive, circulatory, and eliminative systems simultaneously.

The circulatory whole is summarized in one reading: "the metabolism of the system is disturbed at times, making for an incoordinant activity between the deeper circulation and the superficial activity; so that at periods the body becomes, as it were, irritated in the superficial circulation in portions of the body. These are only the reflex action, or the attempt of the body to adjust itself" (1021-1). Circulatory incoordination, in the readings' view, is always the body attempting to compensate for a deeper disturbance — and the superficial manifestations (rashes, skin irritations, swellings, fluctuating blood pressure) are always signs pointing toward the underlying imbalance rather than conditions in their own right.

Modern Context

Modern cardiovascular physiology distinguishes the systemic and pulmonary circulations, and within the systemic circulation further distinguishes arterial, venous, capillary, and lymphatic components. The readings' deep/superficial distinction does not map precisely onto any of these standard anatomical categories — it is a functional and physiological distinction rather than a strictly anatomical one. The deep circulation corresponds most closely to the visceral (splanchnic) circulation and the hepatic portal system; the superficial circulation corresponds most closely to the systemic

venous return, the capillary bed of the skin and extremities, and the peripheral lymphatics.

The readings' recognition that deep and superficial circulation must be coordinated for normal physiology — and that excess in either at the expense of the other produces characteristic pathological patterns — is consistent with modern understanding of cardiac output distribution and venous return dynamics. The concept that sympathetic activation shifts blood from peripheral (superficial) to central (deep) organs is well established in modern physiology as the basis of the fight-or-flight response, in which splanchnic blood flow increases and peripheral blood flow decreases.

The liver's prominent position in the readings' circulatory framework — as the primary blood-conditioning and filtering organ — is consistent with modern hepatology, which recognizes the liver as receiving approximately 25% of resting cardiac output and performing over 500 distinct metabolic functions including the processing of virtually all absorbed nutrients from the digestive tract. The readings' "twice through the liver" claim, while not anatomically standard, reflects a functional reality that the liver's processing load is disproportionate to its size and represents the primary determinant of blood composition reaching the rest of the body.

Chapter 3: The Nerve System

3.1 Overview

The Nerve Section in the Physical Reading

In a typical physical reading, the section addressing the nerve system follows the blood supply section. This sequence is not incidental. As the readings consistently make clear, the nerve system governs the incentives to the organs — the impulses that direct organ function, circulatory activity, and eliminative processes. The blood supply, in turn, reflects the quality of those incentives. The nerve section, in many readings, contains the deepest causal account of the disturbance — the blood section having identified what is disturbed, the nerve section identifying why.

This explanatory priority is stated plainly in one of the most direct formulations the readings offer on the subject: "IN THE NERVE SYSTEM, then, we find the greater distresses as are produced in this body — the causes for conditions, whether those as are seen in the apparent condition of blood, or whether those of functioning of organs of the torso, or of the sensory system." (5499-1) The nerve system is here described as the source of disturbances that only secondarily express themselves in the blood and the organs. This causal primacy of the nerve system is not universal across all readings — some conditions are primarily toxic, circulatory, or structural in origin — but it is sufficiently common that the nerve section is typically where the readings' deepest causal analysis resides.

The cause-and-effect discipline the readings apply to nerve system disturbances is rendered with particular precision in the following

passage: "here we find the greater distress, though this an affect and not THE effect. Not the cause, for where pressures have been produced in system, and where tissue (scar tissue), also that of adhesions — where portions of the organs themselves, or where the soft tissue in portions of the body has adhered to, by the deflected circulation, this naturally produces an accumulation of nerve plasms in these regions, and the distresses as are brought to the head..." (55-1) This reading is a reminder that the readings apply their cause-and-effect discipline rigorously — even nerve symptoms may themselves be effects of structural or circulatory causes rather than primary disturbances. The challenge of reading the physical readings lies in tracing these causal chains to their actual origin.

The Nerve System — or Systems

One of the most immediately striking features of the readings' nerve section is the plural — "the nerve system, or systems." The readings use this formulation explicitly and repeatedly (e.g., 5555-1, 2504-1, 5445-1). This is not a grammatical inconsistency but a deliberate acknowledgment of a fundamental feature of the readings' neurological framework. The human body does not possess a single unified nervous system but rather multiple systems that are distinct in their anatomy, their functional associations, and their relationship to the physical, mental, and spiritual dimensions of human life.

The nerve section of a typical physical reading deals primarily with two major components, with varying emphasis depending upon the nature of the disorder: the cerebrospinal system and the sympathetic system. Each of these is a distinct system with its own anatomy, its own functional character, and its own relationship to the whole. The readings' treatment of them as separate systems — coordinate rather than subordinate — reflects the historical neurological framework of the late nineteenth and early twentieth centuries, in which Gray's

Anatomy (1901) defined the nervous tissues of the body as "comprised in two great systems — the cerebro-spinal and the sympathetic." As discussed in Section 1.2.2, understanding this historical context is essential for interpreting what the readings mean by these terms — particularly since the modern division of the nervous system into central nervous system (CNS) and autonomic nervous system (ANS) does not map directly onto the readings' cerebrospinal/sympathetic distinction.

A technical note: some readings do include the sensory nerve system in the nerve section. Anatomically it is part of the cerebrospinal system. Functionally, it often mediates between the two greater systems and is addressed within the organs section (i.e., sensory organs and their innervation or "sensory system").

The Two Great Systems: A Historical, Terminological, and Conceptual Framework

The readings' description of the cerebrospinal and sympathetic as two great systems is consistent with the medical literature of their period, and reflects a conceptualization that is significantly different from what modern neuroscience would recognize. The most complete self-contained explanation of the two systems that the readings offer appears in reading 4125-5, introduced by the reading itself with the phrase "For the moment, let's understand what the sympathetic and the cerebro-spinal nervous system ARE within the human body!" — one of the occasional instances in the readings of an explicitly pedagogical orientation:

In the cerebro-spinal centers, here we have the brain, the spinal cord — which enters through all the cerebro-spinal system, passing through each vertebra, and the impingements on same often cause much of the distress to the body-physical. The sympathetic system — this is the system that runs on either SIDE of the cerebro-spinal

system, and in direct contact with same at each segment of the system — is rather that as receives the IMPULSES from the cerebro-spinal and they are the coordinators, as it were, between the involuntary and the voluntary activities of the body physical. The cerebro-spinal, the nerve cord itself, acts for the physical attributes of the body through the IMPULSES. The sympathetic is the greater IMPULSIVE system. (4125-5)

This passage makes several important points simultaneously. The cerebrospinal system acts as the carrier of nerve impulses to the physical body — to the organs, the locomotory centers, and the voluntary muscular system. The sympathetic system, running on either side of the spinal cord and connected to it at each vertebral segment, coordinates the involuntary and voluntary activities of the body, and is described as "the greater impulsive system." The term "impulsive" here carries the readings' specific technical meaning — not merely that the sympathetic system transmits impulses, but that it is the primary vehicle of those impulsive forces that the readings elsewhere associate with the soul's activity in the body.

The functional distinction between the systems is elaborated in more clinical terms in the following passage: "This is a reaction to not only the sympathetic or vegetative nerve system (which is the double system that runs along the cerebrospinal and functions for the coordinating or the governing between the mental body and the physical body), but to the cerebrospinal system (which is rather the deeper nerve forces that supply energies to the various portions of the body, the organs and the locomotory centers, for responses)." (1055-1) Here the sympathetic is described as governing the relationship between the mental body and the physical body — the mind-body interface. The cerebrospinal is described as supplying the deeper energies to the organs and the locomotory centers — the

mechanism of physical response. Together they constitute the two great coordinative systems of the body.

A critical terminological note, developed in detail in Appendix C, is that the readings' cerebrospinal system is not identical to what modern neuroscience calls the central nervous system (CNS). In the historical framework that the readings reflect, the parasympathetic nervous system — now classified as part of the autonomic nervous system (ANS) — was understood as part of the cerebrospinal system, since its preganglionic neurons reside in the brainstem and sacral spinal cord. Similarly, the readings' sympathetic system corresponds broadly to what modern anatomy calls the sympathetic division of the ANS — the paravertebral chain ganglia and the associated visceral plexuses — but carries a conceptual breadth far exceeding this modern designation. Equating the readings' cerebrospinal with the modern CNS, and the readings' sympathetic with the modern ANS, is therefore an oversimplification that can produce significant interpretive errors, particularly when the readings discuss incoordination between the two systems.

The Vegetative Nerve System

Some readings periodically reference a third nerve component — the vegetative nerve system. A clinical distinction is drawn in the following passage: "These are PRODUCED from conditions as come from rather the vegetative nerve system than of the sympathetic or cerebro-spinal, though these become involved in the condition when the pressure has reached, see, a condition as to produce inflammation in centers about which such poisons or such conditions exist." (2504-1) The vegetative nerve system here is distinguished from the sympathetic even while being closely related to it. The vegetative nerves are located precisely in reading 19-1: "the internal nerve system, or through the vegetative nerves, or those of

the intestines and the stomach, and the organs of digestion." This corresponds to what modern anatomy calls the enteric nervous system — the intrinsic nerve network of the gut — which historically was understood as part of the great sympathetic system but has since been recognized as a semi-autonomous third division of the ANS.

The vegetative-sympathetic relationship is placed within the circulatory framework developed in Chapter 2 by reading 480-28: "there are those connections between the vegetative or sympathetic nerve system and the cerebrospinal nerve system. Now the cerebrospinal in the ordinary sense or term is the deeper circulation; or the impulses that care for the activities of the heart, the liver, the lungs, the kidneys in their deeper circulation." This passage explicitly equates the cerebrospinal with the deep circulation and the sympathetic-vegetative with the superficial circulation — bridging the circulatory framework of Chapter 2 with the nerve framework of Chapter 3, and confirming that these two great physiological systems are not parallel but interpenetrating.

Reading 1079-1 uses "vegetative nerve forces" and "sympathetic nerve forces" in parallel: "it is from — primarily — those subluxations that react sympathetically through the incoordination between cerebrospinal and sympathetic nerve forces! — or vegetative nerve forces' impulses to activities of the organs themselves." This equivalence suggests that "vegetative" and "sympathetic" are sometimes used interchangeably in the readings, while in other contexts they are distinguished — a terminological flexibility that reflects the readings' engagement with the evolving neurological vocabulary of their period. Again, this conceptual sophistication resonates with modern classification of the enteric

(intestinal/vegetative) nerves as a third track of the autonomic system.

Incoordination as the Primary Pathological Theme

The most common pathological theme in the nerve section of the physical readings is some form of incoordination between the major nervous system components. The structural and functional dimensions of this incoordination are captured in the following passage: "In the effects as are produced — that tendency of non-COORDINATING between sympathetic and cerebro-spinal or so as to form, as it were, two separate functionings, rather than a coordinated functioning." (5555-1) The image of the two systems forming "two separate functionings" rather than a coordinated whole is one of the readings' most vivid descriptions of nerve incoordination. In health, the cerebrospinal and sympathetic systems operate as a unified whole — each informing and regulating the other through their connections at every vertebral segment and through the great nerve plexuses of the body cavity. In disease, they drift into independent activity — each functioning according to its own pattern rather than in coordination with the other — producing the complex, multi-system clinical pictures that characterize many of the more difficult cases in the physical readings.

Incoordination most commonly manifests between the cerebrospinal and sympathetic systems, but the readings also describe incoordination between the voluntary and involuntary aspects of either system, between the sensory system and the others, and — in the most severe cases — between all three systems simultaneously. The nature and location of the incoordination determines the character of the symptoms produced, through the mechanism of nerve reflexes described in Section 3.6 (Principles of Nerve System Function and Pathology).

Impulse and Activity: The Fundamental Nerve Physiology

Underlying the readings' entire nerve system framework is a fundamental physiological distinction between two types of nerve action: impulse and activity. This distinction is introduced in the context of electrical appliance therapy but carries general significance throughout the readings: "There are two impulses, see, in nervous action from brain through the nerve forces of system ... those of the white and the gray matter, as is termed, in nerve cords themselves, each with their vibration." (5533-1) Impulse is associated with white matter — the myelinated nerve fibers that transmit signals rapidly, sometimes over long distances. Activity is associated with gray matter — the nerve cell bodies and synaptic connections where processing, integration, and response occur. In the readings' framework, impulse and activity must be properly coordinated for normal nerve function: impulse without appropriate activity produces a kind of nerve excitation without effective physical response; activity without proper impulse produces physical action without conscious direction or voluntary control.

This impulse-activity distinction underlies the readings' recurring discussion of voluntary and involuntary nerve function — one of the most clinically significant concepts in the physical readings — developed in Section 3.6.

The Nerve System and the Soul

Perhaps the most philosophically distinctive claim about the nerve system in the readings appears in reading 4566-1: "In the nerve system, the strain between the physical and mental, with the spiritual attributes of the individual, finds expression not only in the brain itself, but in that of the sympathetic system or the brain manifestation of soul forces in the body." (4566-1) The sympathetic system as the "brain manifestation of soul forces in the body" — this

statement has no parallel in modern neuroscience and is one of the most challenging and distinctive concepts in the readings' physiological framework. It positions the sympathetic system as a primary anatomical structure through which the soul's activity is expressed in the physical body. The cerebrospinal system, by contrast, is more closely associated with the conscious mind and voluntary activity in the material world.

This soul-body function of the sympathetic system is not merely a metaphysical statement — it has clinical implications throughout the readings. Psychological and emotional disturbances, karmic patterns, and soul-level influences on health all find physical expression through the sympathetic system. This is why the readings' treatment of nervous system incoordination is never purely mechanical — it is always, at some level, a disturbance in the coordination between the body's physical functioning and the mental-spiritual forces that the sympathetic system mediates. This dimension of the sympathetic system is developed in detail in Section 3.3.

Modern Context

The readings' neurological framework reflects the medical understanding of the late nineteenth and early twentieth centuries, in which the nervous system was divided into two great systems — the cerebrospinal and the sympathetic — rather than the central nervous system (CNS) and autonomic nervous system (ANS) of modern neuroscience. This historical framework, codified in Gray's *Anatomy* (1901) and reflected in the clinical literature of the period, is the necessary starting point for interpreting the readings' nerve system terminology. The modern reorganization of the nervous system — initiated by Langley's (1921) establishment of the autonomic nervous system as a distinct classification — does not

map directly onto the readings' framework, and interpreting the readings through modern categories without acknowledging this historical difference produces interpretive distortions that this chapter aims to avoid. The historical and modern frameworks are compared in detail in the system-specific sections that follow and in Appendix C.

3.2 The Cerebrospinal System

Overview

The cerebrospinal system is the central nervous system of the body — the system whose nerve cell bodies reside in the brain and spinal cord, and whose fibers distribute through every vertebral segment to reach the organs, muscles, and tissues of the body. In the readings' terminology it is sometimes called the "cerebro-spinal" (hyphenated) and in later readings occasionally designated the "central nervous system," reflecting the evolution of anatomical terminology across the decades in which the readings were given. This terminological equivalence is made explicit in reading 568-5 — "the circulation through the sympathetic and the cerebro-spinal system (central nervous system)" — and in reading 1026-1, which refers to "the cerebrospinal system, or central nervous system" in a single phrase. This terminological evolution is noted where relevant, though the readings' predominant usage is "cerebrospinal" or "cerebro-spinal" throughout.

Anatomy

How the Readings Describe the Cerebrospinal System

As noted in the overview above, the most direct anatomical description of the cerebrospinal system available in the readings appears in reading 4125-5: — "In the cerebro-spinal centers, here we have the brain, the spinal cord — which enters through all the

cerebro-spinal system, passing through each vertebra, and the impingements on same often cause much of the distress to the body-physical. This may be represented as the PHYSICAL organism."

Three anatomical elements are named: the brain, the spinal cord, and the nerve centers at each vertebra through which the cord passes. The description is consistent with the definition in Gray's Anatomy (1901): "The cerebro-spinal system comprises the brain (including the medulla oblongata), the spinal cord, the cranial nerves, the spinal nerves, and the ganglia connected with both these classes of nerves" (p. 1113). The readings' description corresponds closely to this historical definition, emphasizing the vertebral distribution of the spinal cord and the potential for impingements at each vertebral segment as a primary source of distress to the body.

The characterization of the cerebrospinal system as representing "the PHYSICAL organism" is significant. It positions the cerebrospinal system as the nerve system most directly associated with physical, material activity — the conscious, voluntary, structural dimension of the body. This association is developed in detail in the Physiology subsection below.

One of the earliest readings (given in 1910) provides a vivid clinical description of the cerebrospinal system in terms of its functional connections — describing how the nerve centers along the spine "come in contact with the solar plexus nerve center here and with the cerebrospinal nervous system," and how the cardiac plexus comes "in contact with the sympathetic and cerebrospinal at the eighth dorsal and at the tenth and eleventh dorsal." (131-1) This passage illustrates the readings' consistent understanding that the cerebrospinal system is not isolated within the spinal column but is continuously connected to the sympathetic system through the great

plexuses of the body cavity — the solar plexus, cardiac plexus, and hypogastric plexus — at their respective vertebral levels.

The Three Primary Centers

The readings identify three primary centers that receive particular emphasis throughout the physical readings: the 3rd cervical, the 9th dorsal, and the 4th lumbar. Their coordinating function is described in reading 480-28:

... in a physical body, there are those connections between the vegetative or sympathetic nerve system and the cerebrospinal nerve system. Now the cerebrospinal in the ordinary sense or term is the deeper circulation; or the impulses that care for the activities of the heart, the liver, the lungs, the kidneys in their deeper circulation. Now, in the upper cervical we have those centers between the 3rd and 5th cervical where the sympathetic or vegetative nerve system coordinate with drainages from the superficial activity or to the outer portion of the body itself. Also we have those in the 9th dorsal center, which through the solar plexus area makes for those particular activities as related to the conditions that develop from the foetus force in the system, or the pregnancy. And the 4th lumbar, as coordinant with the 9th dorsal, where there is made for the gradual relaxation or drainages set so that the kidneys, the lower portion of the digestive system and all are made to coordinate. (480-28)

These three centers are not merely anatomical locations but functional coordinative hubs where the cerebrospinal and sympathetic systems make their primary connections to the body's major organ systems. The 3rd cervical governs drainages to the superficial circulation and upper body. The 9th dorsal coordinates through the solar plexus with the organs of the mid-abdomen and

the generative system. The 4th lumbar coordinates with the kidneys, lower digestive system, and pelvic organs. Together they represent the primary points at which spinal mechanics most directly affect organ function and circulatory coordination.

The significance of these three centers extends beyond the purely mechanical. The readings identify them as the centers through which kundalini or life-force energy is distributed spiritually through the body: "the 3rd cervical... the 9th dorsal... the 4th lumbar. .. These are the three centers through which there is activity of the kundaline forces that act as suggestions to the spiritual forces for distribution through the seven centers of the body." (3676-1) They are further described as centers "where the coordination between the impulse and the physical activity produces periods when there are the associations with not only the mental and physical but the spiritual activities — or the source of the ENTITY [SOUL] itself in its connection with the physical body." (1087-1) The physical significance and the spiritual significance of these three centers are not separate in the readings' framework — they are aspects of a single reality in which the nerve system serves simultaneously as the body's physical coordination mechanism and the soul's channel of expression in physical life.

The Medulla Oblongata

The medulla oblongata occupies a special position in the readings' cerebrospinal anatomy as the primary coordinating center between the cerebrospinal and sympathetic systems at the level of the brain itself. The readings describe it as "the governor of impulse through the medulla oblongata" (1625-1) — the primary regulator of nerve impulse coordination between the two great systems. The medulla houses the centers governing cardiovascular function, respiration, and the major vital processes — the automatic activities that sustain

life moment to moment — and is therefore the point at which cerebrospinal-sympathetic incoordination most directly threatens basic physiological integrity.

The readings' emphasis on the medulla as a governor rather than merely a relay station is consistent with its modern neurological understanding as the site of the reticular formation, the cardiovascular and respiratory control centers, and the nucleus tractus solitarius — the primary integrating center for autonomic and somatic nerve function. The readings' clinical discussions of epilepsy, unconsciousness, and severe incoordination consistently implicate the medulla as the anatomical locus of the most critical nerve disturbances (McMillin, 2022).

Physiology

The Cerebrospinal System and Voluntary Function

The readings consistently associate the cerebrospinal system with voluntary, conscious activity — with the deliberate, directed actions of the physical body under conscious control. The most concise formulation of this association in the readings is the following: "The cerebrospinal is to the whole of the physical body as of that of IMPULSE to carry out conditions of the living physical organism." (5601-1) The cerebrospinal system, in this formulation, is the carrier of impulse — the system that translates the intentions of the conscious mind into physical action throughout the body. This is reinforced by the characterization in reading 4125-5: "The cerebrospinal, the nerve cord itself, acts for the physical attributes of the body through the IMPULSES." The emphasis on impulse — on the transmission of directive signals from the brain downward through the spinal cord — identifies the cerebrospinal system as the primary instrument of conscious, voluntary physical activity.

This voluntary-conscious association is the complement of the sympathetic system's involuntary-unconscious character. The two systems together constitute the coordination between the body's voluntary and involuntary dimensions — what modern neuroscience would describe as the relationship between somatic and autonomic nervous systems, though as noted previously in Section 3.1, the readings' cerebrospinal-sympathetic distinction is not identical to this modern classification.

Impulse and Activity: White and Gray Matter

The readings' discussion of cerebrospinal function introduces a fundamental physiological distinction that applies to the nerve system as a whole: the distinction between impulse and activity, associated respectively with the white and gray matter of the nerve system. This distinction, introduced in the context of electrical appliance therapy but carrying general physiological significance, is stated as follows: "There are two impulses, see, in nervous action from brain through the nerve forces of system, both in cerebro-spinal and in sympathetic, those of the white and the gray matter, as is termed, in nerve cords themselves, each with their vibration." (5533-1) White matter — the myelinated nerve fibers that conduct signals rapidly over long distances — is the medium of impulse transmission. Gray matter — the nerve cell bodies and their synaptic connections — is the site of neural activity and processing. In the readings' framework, both elements are present in both the cerebrospinal and sympathetic systems, and both must function properly for normal nerve coordination. This is not merely a structural observation. White matter in the cerebrospinal system is anatomically obvious. However, the sympathetic system receives its initiating signals from the hypothalamus via descending white matter tracts, making the full sympathetic pathway — from brain to

target tissue — an alternating sequence of white matter impulse conduction and gray matter processing at every level.

The systemic consequence when this white and gray matter balance is disrupted is illustrated in the following clinical description: "In turn as the same effect on the white and gray matter of the nerve system produces the same effect on the splenic action, on the nerve, on the brain and produces a sick, droopy, achy feeling all through the whole system." (131-1) The white-gray matter disruption here is not localized to a specific segment but ramifies through the entire system — affecting the spleen, the brain, and the general sense of vitality throughout the body.

The functional role of the nerve centers in governing organ supply through this impulse-activity framework is clarified in the following passage: "True, impulse for physical consciousness reacts from nerve centers of the brain, but the SUPPLY of nourishment — as well as the ability of portions of the organs to receive that assimilated — comes from BLOOD supply, that is controlled by the ganglia along the nervous system — either the cerebrospinal or the sympathetic." (1158-31) This passage makes a critical distinction: the brain's nerve centers generate the impulse for physical consciousness, but the supply of nourishment to the organs is governed by the ganglia along the nervous system — the intermediary nerve centers through which the cerebrospinal's impulses are translated into circulatory and organ activity. The blood supply is thus not directly commanded by the brain but is mediated through the ganglionic centers that receive the cerebrospinal's impulses and translate them into circulatory action. This is why spinal nerve pressures affect organ function — they disrupt the ganglionic mediation of impulse into supply, producing functional organ disturbance without necessarily producing any organic damage.

The Cerebrospinal System and the Deeper Circulation

As established in Chapter 2 and in Section 3.1, the readings explicitly associate the cerebrospinal system with the deep internal circulation — the hepatic circulatory pattern governing the organs of the torso. This association is stated directly in reading 480-28: "Now the cerebrospinal in the ordinary sense or term is the deeper circulation; or the impulses that care for the activities of the heart, the liver, the lungs, the kidneys in their deeper circulation." (480-28) This equation — cerebrospinal system as the governing nerve authority over deep circulation impulses — places the cerebrospinal as the nerve system most directly responsible for the organs of the torso's deep circulatory system. The heart, liver, lungs, and kidneys receive their nerve incentives through the cerebrospinal system, which translates into the circulatory activity of the hepatic system. The sympathetic system, by contrast, governs the superficial circulation and its relationship to the emunctory and lymphatic channels.

This cerebrospinal-deep / sympathetic-superficial pairing is one of the most important integrative concepts in the readings' physiology, bridging the circulatory framework of Chapter 2 with the nerve framework of Chapter 3. It explains why spinal lesions at specific dorsal and lumbar levels produce organ disturbances — they disrupt the cerebrospinal impulses that govern the deep circulatory incentives to those organs. And it explains why osteopathic corrections at those same levels restore organ function — by removing the impediment to normal cerebrospinal impulse transmission.

Pathology

Impingements and Their Systemic Effects

The most clinically significant pathological mechanism associated with the cerebrospinal system in the readings is the impingement — a pressure on the cerebrospinal nerve at or near a vertebral segment that distorts or reduces the nerve impulse to the organs and tissues supplied by that segment. Impingements are named among the primary sources of physical distress in the readings' own anatomical description of the system: "the impingements on same often cause much of the distress to the body-physical." (4125-5)

Impingements may arise from lesions — the traditional osteopathic term for functional disturbances in spinal mechanics — or from subluxations — the chiropractic term for structural misalignment. The readings use both terms as appropriate for diagnosis and treatment of each individual (including the physician resources available). A detailed clinical example of how an impingement produces systemic effects through reflex action is provided in reading 4350-1:

In the nerve supply we find these conditions in the cerebro-spinal nerve centers we find the first and second lumbar region near the brush ends, you see, a lesion formed, that being the seat of the trouble, this being in the false pelvic cavity and near the ilium plexus center, see. This then, reflexly, see, produces another lesion at the 7th dorsal vertebra, which supplies and gives the incentives of circulation through the upper portion of body, namely through the secondary cardiac plexus center, through the neck, head and throat, that is, to the frontal portion of the body. In the sympathetic centers opposite to these lesions we find the reaction and the

refractory vibratory forces that produce this congestion in the functioning organs themselves, thus affected. (4350-1)

This passage illustrates several important principles simultaneously. A primary lesion in the lumbar region produces a secondary lesion at the 7th dorsal by reflex — demonstrating that spinal disturbances propagate through the system rather than remaining localized. The secondary lesion then disrupts the incentive through the secondary cardiac plexus to the neck, head, and throat — producing symptoms in locations remote from the original disturbance. And the sympathetic centers opposite the lesion are drawn into the disturbance — illustrating how a primarily cerebrospinal impingement inevitably involves the sympathetic system through their mutual connections at each vertebral segment.

A simpler but equally instructive example appears in reading 603-3, in which a lesion just below the 9th dorsal produces pressure on the solar plexus center, creating reflex disturbances to the gall duct area, the kidney, and the colon through their nerve connections at that segment. The clinical presentation — apparently diverse and unrelated symptoms affecting multiple organ systems — is traced to a single spinal impingement, the understanding of which makes the clinical picture coherent.

An important clinical principle regarding the relationship between symptoms and their underlying causes is stated in reading 2913-1: the symptoms produced by a subluxation are often "a reaction — rather than the conditions that NEED correction. These are effects and NOT the cause of condition." (2913-1) This is one of the most important clinical principles in the readings' nerve system framework. The presenting symptoms are effects of nerve system disturbance rather than diseases in their own right. Treating the

symptoms without correcting the underlying spinal mechanics addresses effects while leaving causes intact.

The Cerebrospinal System and Moral-Spiritual Integrity

The readings' understanding of cerebrospinal pathology extends beyond the mechanical and structural to encompass the moral and spiritual dimensions of the person. Reading 4125-5 contains an observation that goes well beyond anatomical description and that is important for understanding the readings' holistic conception of nerve function:

By destroying within the imaginative system much that had been builded morally and spiritually within self, became such a shock to the whole of the physical body as to produce — FROM the sympathetic system INTO the moral fibre of the cerebro-spinal system — those conditions that became as has been experienced by the body. Gradually, disassociation of ideas, disassociation of activities became active within the body. (4125-5)

This passage describes how damage to the "moral fibre" of the system — through the destruction of spiritual and moral integrity — propagates from the sympathetic system (where soul forces are expressed) into the cerebrospinal system (where physical impulse is generated), eventually producing the "disassociation of ideas" and "disassociation of activities" that the reading is addressing. Mental-spiritual disintegration manifests in cerebrospinal functional disintegration. The nerve system is not merely a physical apparatus but the medium through which the soul's integrity, or its deterioration, expresses itself in the body's physical functioning.

This observation connects the cerebrospinal system's clinical role — as the carrier of voluntary impulse, the governor of organ function through spinal mechanics — to the readings' broader understanding

of human nature as a unified physical-mental-spiritual entity whose health in any dimension affects all others.

Modern Context

In modern neuroscience, the central nervous system (CNS) consists of the brain and spinal cord — corresponding closely to the readings' cerebrospinal system as defined in Gray's Anatomy (1901). The cranial and spinal nerves that distribute from the CNS to the peripheral tissues correspond to what the readings call the cerebrospinal nerve supply to the organs and locomotory centers. The concept of spinal nerve impingement producing organ dysfunction through disrupted nerve supply is foundational to traditional osteopathic and chiropractic medicine and has received increasing research attention in modern neuroscience, where the relationship between spinal mechanics, autonomic function, and visceral health continues to be investigated.

The readings' impulse-activity / white-gray matter distinction maps roughly onto modern neurophysiology's distinction between action potential conduction along myelinated axons (white matter) and synaptic processing in neural circuits (gray matter). The readings' emphasis on the ganglia along the nervous system as the mediating agents between brain impulse and organ supply corresponds to the modern understanding of the dorsal root ganglia, sympathetic chain ganglia, and prevertebral ganglia as intermediary processing centers rather than simple relay stations.

The readings' three primary spinal centers — 3rd cervical, 9th dorsal, 4th lumbar — do not correspond to any single modern neuroanatomical classification, but each is recognized in osteopathic clinical literature as a segment of particular functional importance in spinal mechanics and visceral coordination. The 9th dorsal in particular is recognized in traditional osteopathy as a primary center

for the solar plexus and upper abdominal viscera — consistent with the readings' treatment of it as the primary mid-body coordinative center.

The readings' characterization of the cerebrospinal system as the vehicle of "moral fibre" — and of moral-spiritual disintegration as a form of cerebrospinal pathology — has no direct equivalent in modern neuroscience. Modern psychiatry and neuropsychology recognize the relationship between psychological states and neurological function, and research on the neurological correlates of character, moral reasoning, and personality integrity represents the closest modern parallel. The readings' framework, however, understands this relationship as operating in the reverse direction from most modern models. Rather than neurological states producing psychological and moral experience, it is the moral and spiritual condition of the person — expressed through the sympathetic system's imaginative dimension — that produces neurological integrity or disintegration in the cerebrospinal system.

3.3 The Sympathetic System

Overview

Of the nerve systems described in the physical readings, the sympathetic is the most complex, the most extensively discussed, and the most philosophically distinctive. It is the system about which the readings make their most unusual and challenging claims — and the system that, more than any other, reflects the readings' understanding of the human being as an integrated physical, mental, and spiritual whole. The readings' most direct characterization of this system appears in reading 4566-1: "the sympathetic system or the brain manifestation of soul forces in the body." To grasp what this means — and what it implies for the

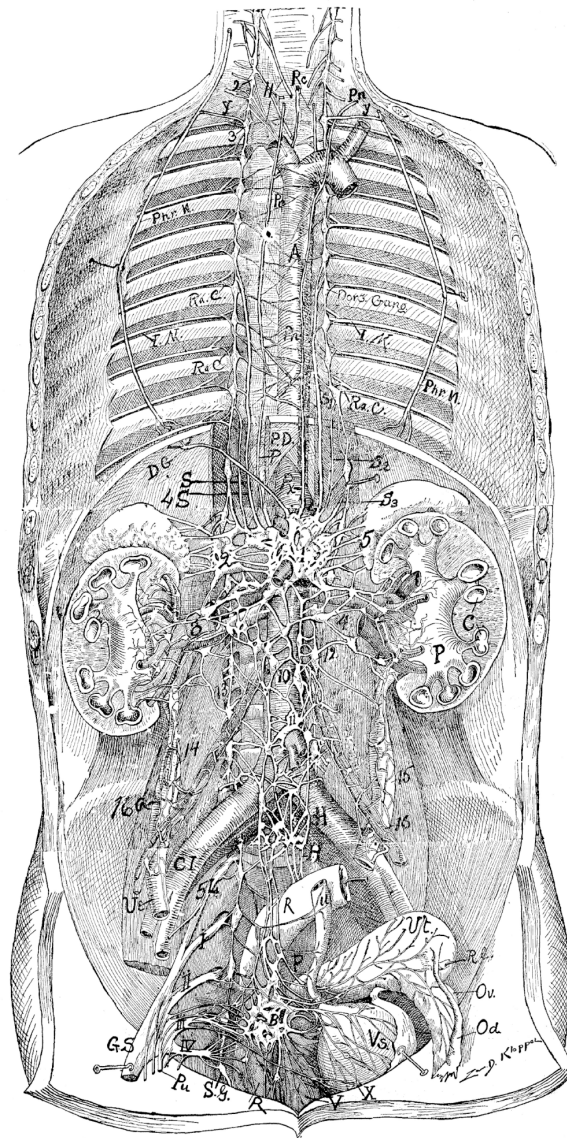


Fig. 3.3.1 An illustration of the sympathetic nerve, displaying the full extent of what 19th-century anatomists termed the Great Sympathetic System — the bilateral lateral chains descending from the cervical ganglia, the splanchnic nerves converging on the abdominal brain at center, and the pelvic plexus at the inferior terminus. Robinson regarded this system as the primary governing network of all visceral life, operating independently of and in coordination with the cerebrospinal system. Source: Robinson (1907), Fig. 1. Public domain

readings' approach to health and illness — requires understanding the sympathetic system in all its dimensions.

The readings approach the sympathetic system from several directions simultaneously: anatomical, functional, circulatory, psychological, and spiritual. No single angle of approach is sufficient. The present section organizes the material around the readings' own vocabulary, beginning with the anatomical description of the system, moving through its functional dimensions as the readings identify them, and concluding with its role as the primary vehicle of soul force in the physical body. The three great plexuses — solar, cardiac, and hypogastric — are introduced here in their anatomical context and developed in full in Section 3.5.

Anatomy

The Double System

The most important single anatomical statement about the sympathetic system in the readings appears in reading 443-4, which provides what may be the most complete anatomical description of the system available:

The expression of these is seen through the activity of the sympathetic nerve system, which is double in its nature, extending from the base of the brain — where it joins in the first cervical the glands — there is direct connection between the cerebro-spinal and the cranium nerve ducts, nerve activities and lobes themselves, and extend throughout the whole of the cerebro-spinal system. And along each side of same, nerves from the sympathetic join at every specific center the cerebro-spinal in the activity of glands and of organs in varied portions of the body. They extend internally and superficially, or externally, even more to the activity of

the sensory organs and to the whole of the sympathetic system, or to the outer portion of the body. (443-4)

Three anatomical features are identified in this passage. First, the sympathetic system is double in its nature — running as two cords, one on each side of the cerebrospinal system. Second, it extends from the base of the brain at the first cervical, connecting at that level with the glands and with the cranial nerve ducts. Third, it connects with the cerebrospinal at every specific center along the spine — joining the cerebrospinal at each vertebral segment in governing the activity of glands and organs throughout the body.

This description is confirmed and complemented in reading 4125-5: "There is lying along each side of the cerebro-spinal system a series, or on either side a cord known as the SYMPATHETIC nervous system. Not within the structural portions, but CONNECTING with same at DEFINITE points; though in many points connecting with same but at DEFINITE points." The qualification — "not within the structural portions, but connecting" — establishes the sympathetic system as anatomically distinct from the spinal cord itself while being functionally inseparable from it through its connections at definite points along each vertebral segment.

All three of the system's essential features are named simultaneously in the following formulation. The sympathetic system is "the double system that runs along the cerebrospinal and functions for the coordinating or the governing between the mental body and the physical body." (1055-1) Its anatomy (double, running along the cerebrospinal), its primary physiological function (coordinating), and its most distinctive role (governing between the mental body and the physical body) are encompassed in a single statement.

This anatomical description corresponds closely to what Gray's Anatomy (1901) called the "sympathetic system" — the two chains of paravertebral ganglia running on either side of the spinal column from the base of the skull to the coccyx, connected to the spinal nerves at each segment and extending through the great plexuses into the viscera. As discussed in Section 3.1, the readings' sympathetic system is considerably broader in its conceptual scope than the modern sympathetic division of the ANS — it corresponds more closely to what early anatomists called the "great sympathetic system," encompassing the vegetative, vasomotor, and imaginative dimensions described in the Physiology subsection below.

The Three Great Plexuses

Within the sympathetic system, the readings consistently emphasize three great nerve plexuses — interconnected networks of nerves and ganglia located in the body cavity that serve as the primary coordinative centers between the sympathetic and cerebrospinal systems and between the nerve system and the visceral organs. These are the solar plexus, the cardiac plexus (including the secondary cardiac plexus), and the hypogastric plexus.

The sympathetic nerves, as reading 443-4 establishes, "join at every specific center the cerebro-spinal in the activity of glands and of organs in varied portions of the body." The three great plexuses are the primary sites where this joining occurs — where sympathetic and cerebrospinal impulses meet, integrate, and distribute to the organs of the body cavity. The solar plexus, situated behind the stomach at the 9th dorsal vertebral level, governs the organs of the upper abdomen. The cardiac plexus, at the 5th and 6th dorsal level, governs the heart and lungs, with the secondary cardiac plexus receiving particular clinical prominence in the readings for its governance of the circulatory and nerve supply to the head and

neck. The hypogastric plexus, at the 4th lumbar level, governs the organs of the lower abdomen and pelvis. Each of these plexuses is developed in full anatomical and clinical detail in Section 3.5.

Physiology

The Sympathetic System and the Superficial Circulation

As established in Chapter 2 and in Section 3.1, the sympathetic system is associated with the superficial circulation — the venous, capillary, and lymphatic circulation of the body's surface and periphery. This association is stated directly in reading 264-55: the sympathetic is "the superficial circulation — and is of the lymph and emunctory" through which the body's surface elimination is governed. This is confirmed in reading 1158-31: "As the sensory forces (eyes, ears, nose, throat, sense of touch and the like) are the closer akin to the impulses of the body, their control is then NATURALLY more under the direction of what may be called the superficial or the sympathetic system."

This sympathetic-superficial equation has important physiological implications. The sympathetic system's governance of the superficial circulation means that the body's surface elimination — through the skin, the lymphatic channels, and the emunctory organs — is directly responsive to the state of the sympathetic system. When the sympathetic system is functioning normally, the superficial circulation maintains adequate lymphatic drainage, skin elimination, and peripheral circulation. When the sympathetic system is disturbed, these surface processes reflect that disturbance — a physiological relationship developed further in the Pathology subsection below.

The Three Faces of the Sympathetic System

The readings use a cluster of terms to describe different functional aspects or dimensions of the sympathetic system's activity. Taken together, these terms constitute what might be called the sympathetic system's multiple functional identities — different ways in which the same system expresses itself in different contexts. Based on analysis of the readings and the historical sources they reflect, three such faces can be identified: the vegetative, the vasomotor, and the imaginative (McMillin, 1997).

It is worth noting at the outset that the readings do not use the phrase "three faces" — this organizational framework is offered as an interpretive synthesis. It is also worth noting that the readings at times use the terms "imaginative" and "impulsive" in parallel or as interchangeable designations for a single dimension — as in reading 1063-1, which names "what may be termed the imaginative or impulsive system, through the forces to the sensory activity." The impulsive dimension, rather than constituting a fourth independent face, is treated here as a sub-dimension of the imaginative — the aspect of the imaginative face that operates most directly at the soul-body interface. This interpretation is the more conservative and is consistent with the readings' own tendency to treat imaginative and impulsive as overlapping rather than distinct categories.

The Vegetative Face

The vegetative face of the sympathetic system corresponds to its role in governing the automatic functions of nutrition, digestion, secretion, and elimination — the body's sustaining processes that operate continuously and largely below conscious awareness. This dimension is named explicitly in the characterization of the sympathetic as "the sympathetic or vegetative nerve system (which

is the double system that runs along the cerebrospinal and functions for the coordinating or the governing between the mental body and the physical body)." (1055-1)

The vegetative function is located specifically in reading 2504-1: "The digestive system, or the heart's action WITH the digestive system, finds its expression in those conditions in the sympathetic and cerebrospinal system, through the activity of the vegetative nerve centers." This positions the vegetative face of the sympathetic as the primary nerve governing digestion and assimilation — the processes through which the body extracts nourishment from food and converts it into blood-building and tissue-replenishing forces.

This is precisely the role that Cruveilhier (1844, p. 765) attributed to the great sympathetic system as "the apparatus of nutritive life". "The sympathetic nerve concerns itself with the life of the viscera. It presides over the visceral economy" (Robinson, 1907, p. 28). The vegetative sympathetic, in the readings as in this historical literature, is the nerve governing the body's self-sustaining biological processes.

The Vasomotor Face

The vasomotor face of the sympathetic system refers to its role in governing the diameter and tone of blood vessels throughout the body — regulating blood flow distribution, blood pressure, and the circulation to specific organs and tissues. In recognition of this function, Robinson (1907, p. 33) calls the sympathetic system "nervus vasomotorius."

A specific vasomotor disturbance is described in reading 5675-1: "the brain has been benumbed — a deadening of the vasomotory nerve force and its effect on the brain." A clinical overview of the vasomotor dimension appears in reading 3974-1, which describes

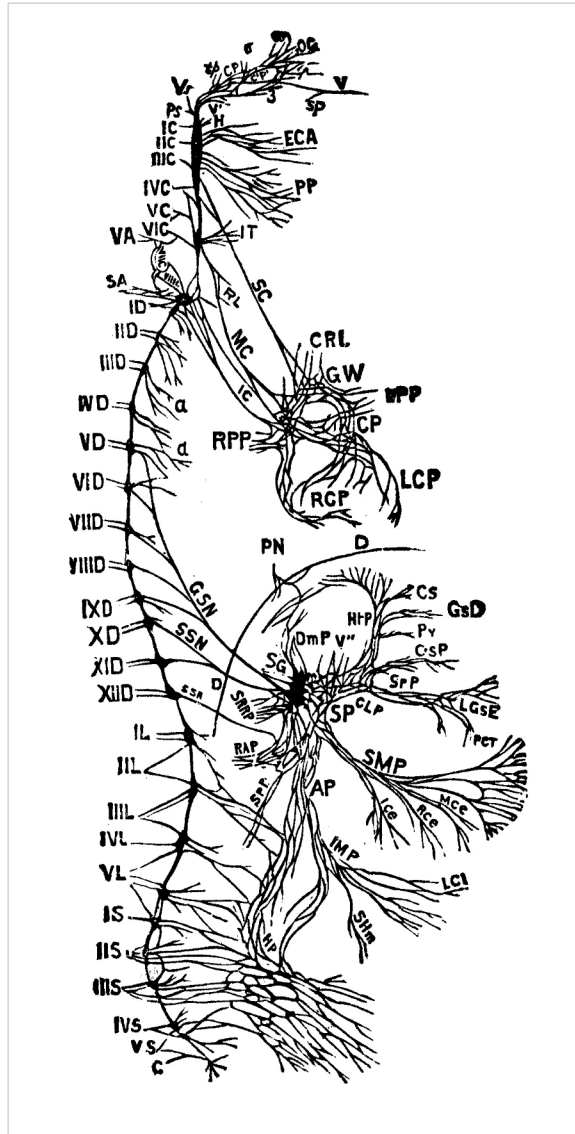


Fig. 3.3.2. Diagram of the nervus vasomotorius (sympathetic nerve) from the proximal ganglion of Ribes to the coccygeal ganglion of Luschka, presenting a lateral view of the truncus vasomotorius and the three prevertebral ganglia — cardiac (CP), coeliac (SP), and pelvic plexuses. The three cardiac nerves, three abdominal splanchnics (GSN, SSN, LSN), and pelvic splanchnics are visible as the primary outflow pathways of the vasomotor system.

how the whole system "responds occasionally to the vasomotor reaction in arteries and in the vein circulation, as it courses through tissue."

A specific vasomotor reflex chain is traced in reading 106-2: lumbar and 12th dorsal strain produces reaction in the cardiac and sympathetic nerves, bringing "distress in the vasomotor nerves" — with the consequence of pains in the head, eyes, and base of brain through the medulla oblongata. A more complex vasomotor pattern is described in reading 480-8, in which cerebrospinal centers under stress and strain produce "an overflow to those centers that sympathetically create the vasomotor conditions — a condition of dilation or contraction of the blood vessels supplying portions of the system, with the reflexes to the sensory system." Here the vasomotor system appears as the mechanism through which nerve center disturbances translate into circulatory changes — dilating or contracting blood vessels in specific body regions in response to nerve center overflow.

The vasomotor dimension was well recognized in the historical literature on the great sympathetic system. Howard (1885) spoke specifically of "the trophic and vasomotor functions of the 'great sympathetic system'". In modern terms, vasomotor control is understood as one of the primary functions of the sympathetic division of the ANS, governing peripheral resistance, blood pressure regulation, and the distribution of cardiac output to different organ systems — all of which are fully consistent with the readings' clinical descriptions of vasomotor disturbance.

The Imaginative Face

The imaginative face of the sympathetic system is the most distinctive and philosophically significant of the three. It is the dimension through which the unconscious psychological life of the

body — the mental and emotional patterns operating below conscious awareness — finds expression in physical functioning, and through which soul-level impulses are transmitted into the physical body. The readings define this dimension precisely in reading 5601-1: "The sympathetic system is rather that of the imaginative, or akin to the psychic and to the operative forces of the brain centers and impulses."

The word "imaginative" in the readings' usage requires careful attention. It does not refer to mere fantasy or creativity. Rather, it designates the body's capacity to be shaped and governed by unconscious patterns of thought, feeling, and soul experience — the way in which what is held in the imaginative body (the unconscious mental-emotional life) becomes operative in the physical body through the sympathetic nerve system. This is a major aspect of what the readings are referencing with the expression "mind is the builder."

The most sobering clinical illustration of this principle appears in reading 4125-5. A person who had "destroyed within the imaginative system much that had been builded morally and spiritually within self" experienced this as a shock to the whole physical body, producing "FROM the sympathetic system INTO the moral fibre of the cerebro-spinal system — those conditions that became as has been experienced by the body. Gradually, disassociation of ideas, disassociation of activities became active within the body." The moral and spiritual deterioration of the imaginative body produced, through the sympathetic system, a clinical condition of neurological disintegration.

A gentler version of the same mechanism is described in reading 480-9 wherein incoordination between the sympathetic and cerebrospinal "caused those disturbances in the mental reactions or

imaginative forces of the body (these are not the right words, but what they are termed in the physical forces of the body) to produce the disturbing factors — as the headaches, the painful menstrual periods." The parenthetical acknowledgment — "these are not the right words, but what they are termed in the physical forces of the body" — is a rare moment of explicit terminological humility in the readings, suggesting that "imaginative forces" is an imprecise but serviceable term for something that conventional anatomy does not fully capture.

As noted above, the readings at times use "imaginative" and "impulsive" as overlapping or interchangeable designations for this dimension. The impulsive sub-dimension refers specifically to the role of the sympathetic system as the primary channel through which soul-level impulses — impulses not generated by conscious thought or voluntary intention but arising from the deeper levels of the soul's experience and history — are transmitted into the physical body. Reading 4125-5 makes the foundational claim: "The sympathetic is the greater IMPULSIVE system." This does not mean simply that the sympathetic transmits many impulses — the cerebrospinal does that too. It means that the sympathetic system is the primary vehicle of that deeper class of impulse associated with the soul's activity in the body.

An abnormal expression of this impulsive sub-dimension is described in reading 2373-1: "IMPULSES as have come to the system has made for an impulsive force as prevents the body from responding in a normal manner. Not that of an abnormal MENTAL development, but an abnormal mental IMPULSE in the physical functioning." The distinction between an abnormal mental development and an abnormal mental impulse is precise. The problem is not in the quality of thinking but in the impulse that

drives physical functioning — a disturbance at the level of the sympathetic's impulsive dimension.

The glands are identified as the primary physical organs through which impulsive forces are translated into chemical and biological activity — consistent with the readings' broader emphasis on the glandular system as the physical interface between soul forces and body function. This aspect of sympathetic function (as the brain of the soul) provides a channel for the greater expression of soul experience through karmic patterns. This relationship between the imaginative-impulsive dimension of the sympathetic and the glandular system is developed further in Section 3.5 and in the chapters on the endocrine glands.

The imaginative face of the sympathetic is the primary mechanism of psychosomatic illness and healing in the readings' framework. Resentment, fear, anger, worry, and grief are all described as operating through the imaginative sympathetic to produce specific physical disturbances. And conversely, the cultivation of positive mental and spiritual attitudes — faith, hope, purposeful activity, right relationship — operates through the same imaginative sympathetic to support healing. This is the readings' most direct statement of the mind-body connection, and it is not metaphorical. It describes a specific anatomical and functional pathway, for mind is the builder.

The Sympathetic System as Soul-Body Bridge

The three faces of the sympathetic system — vegetative, vasomotor, and imaginative — find their unifying statement in reading 443-4, which also provides the most direct connection between the sympathetic system and spiritual reality:

The activities of psychic forces which are of the mental,
of the soul forces of the influences that direct between

the physical body and the soul-mental body, these are active through GLANDS internally. The expression of these is seen through the activity of the sympathetic nerve system. (443-4)

Soul forces, operating through the glands, find their expression in the body through the sympathetic nerve system. This is the readings' definitive statement of the sympathetic system's role as the soul-body bridge. The soul does not act directly on the physical organs — it acts through glands and nerves. The sympathetic system is thus the nerve system most intimately associated with the soul's presence and activity in the physical body.

The readings name this most directly in reading 4566-1: the sympathetic system is "the brain manifestation of soul forces in the body." If the cerebrospinal system represents the physical organism — as reading 4125-5 established — then the sympathetic system represents the soul organism: the anatomical structure through which the soul's intelligence, experience, and impulses manifest in physical functioning. The clinical implications of this are profound and pervade the readings' approach to health and illness. Because the sympathetic system mediates soul-body interaction, disturbances in the sympathetic system are never purely physical — they always carry a psychological and potentially a spiritual dimension. And conversely, disturbances at the psychological or spiritual level often find their physical expression through the sympathetic system in conditions such as schizophrenia (McMillin, 1991) and epilepsy (McMillin, 2022).

Pathology

The pathological consequences of sympathetic system disturbance in the readings are wide-ranging precisely because the sympathetic system's functional scope is wide. Disturbances may arise from

several directions simultaneously: from spinal mechanics affecting the sympathetic chain ganglia; from toxic accumulation in the superficial circulation; from emotional and mental states operating through the imaginative face; and from soul-level disturbances that propagate through the imaginative-impulsive dimension into physical functioning.

Circulatory Pathology

When the sympathetic system is disturbed, the superficial circulation reflects that disturbance directly. The sympathetic's governance of the lymphatic and emunctory channels means that skin manifestations, poor peripheral circulation, lymphatic congestion, and emunctory dysfunction are all potential expressions of sympathetic system disturbance at the circulatory level. The reflex chain from sympathetic disturbance to circulatory consequence is illustrated in reading 106-2, in which lumbar and 12th dorsal strain reacts with the cardiac plexus and sympathetic nerves, bringing "distress in the vasomotor nerves" — with consequences for blood pressure, peripheral circulation, and the sensory organs through their shared sympathetic nerve connections.

Emotional and Psychosomatic Pathology

The imaginative face of the sympathetic system is the primary anatomical pathway through which emotional and mental disturbances produce physical illness in the readings' framework. Reading 4826-1 describes a case in which the blood supply's abnormal condition is "being acted upon by the nervous conditions that exist in the body from time to time, but present a condition more of fear than of an organic condition." Fear, anxiety, and sustained psychological tension affect the solar plexus directly — the solar plexus being the primary site where emotional states find their

somatic expression through the sympathetic system's imaginative dimension.

The clinical symptoms of imaginative system overtaxation are described in reading 4393-1 as including "heaviness to the body, depressions in the feelings, as of far away feelings, as separations at times between the outer self and the inner self, as if the skin would dry, again as if the heart and lungs were too full for the body, heaviness in the lower portion of the torso, the feet feel as if they would drag, stretchy feelings through the lower portion of the limbs themselves." These are described as "rather indications than causes. These are reflexes from an overtaxed mental and physical being" — confirming that even the imaginative system's disturbances are understood as reflexes rather than primary diseases.

Glandular Repression and Organ Dysfunction

The imaginative-impulsive dimension of the sympathetic often operates through the glands. When glandular function is suppressed or disturbed, the sympathetic system's capacity to distribute soul-level impulses to the organs is impaired. Reading 5683-1 illustrates how glandular repression disrupts the imaginative system's coordinating function: "pressures that prevent their normal impulse of that received from the imaginative or the sensory system, or both, that makes for those conditions that become — in their reaction — as incoordinate, from impulses of activity to the various portions, to the centers themselves that are to carry out impulse as received." The result is a form of organ incoordination in which the organs fail to receive the soul-level impulses that the sympathetic system would normally distribute through the glands — producing functional disturbance without organic damage.

Moral-Spiritual Pathology

The most severe form of sympathetic system pathology in the readings is that which arises from moral and spiritual deterioration. As the soul-body bridge, the sympathetic system is uniquely vulnerable to disturbances that originate not at the physical or emotional level but at the level of the soul's integrity. As noted above, reading 4125-5 describes how the destruction of moral and spiritual integrity within the imaginative system propagates from the sympathetic (soul-body interface) into the cerebrospinal (physical impulse carrier). This is the reverse of the more common clinical direction in which spinal mechanics disturb the sympathetic through reflex. Moral-spiritual disintegration, in the readings' framework, is a genuine etiological category of sympathetic system pathology.

Modern Context

Modern neuroscience identifies the sympathetic division of the ANS as one of two divisions (alongside parasympathetic) governing the body's involuntary functions — primarily through the paravertebral chain ganglia and the prevertebral plexuses that distribute to the visceral organs. This corresponds to the anatomical structure the readings describe but encompasses only a fraction of the functional scope the readings assign to the sympathetic system.

The readings' vegetative dimension corresponds to what modern neuroscience calls enteric and autonomic nervous system function — the governance of digestion, secretion, and elimination through the visceral nerve supply. The vasomotor dimension corresponds to sympathetic regulation of vascular smooth muscle and blood pressure — one of the most thoroughly established functions of the sympathetic division in modern physiology. The imaginative dimension — and its impulsive sub-dimension — corresponds to

what modern medicine addresses under the headings of psychosomatic medicine, psychoneuroimmunology, and mind-body medicine, now among the most active research areas in contemporary health science. The soul-body interface through the sympathetic system and glands has no direct modern equivalent, though research on the relationship between the autonomic nervous system, the hypothalamic-pituitary-adrenal axis, and psychological states represents the closest modern parallel.

The readings' treatment of the sympathetic system reflects the understanding of the great sympathetic system as it existed in late nineteenth and early twentieth century medicine — before the modern autonomic nervous system framework established by Langley (1921) reorganized the field. In the historical framework, the sympathetic was understood as a "great system" on a par with the cerebrospinal — governing nutrition, secretion, circulation, and the body's vegetative life with a breadth and complexity that the modern sympathetic division of the ANS does not capture. As noted in Section 3.1, the historical cerebrospinal included what is now called the parasympathetic. Thus readings' emphasis on sympathetic-cerebrospinal incoordination can represent, in modern terms, multiple forms of neurological disturbance: incoordination between the modern ANS and CNS; incoordination within the ANS between sympathetic and parasympathetic divisions; voluntary-involuntary incoordination; and the imaginative-impulsive disturbances of the soul-body interface. Understanding these multiple possible forms of incoordination — and the historical context that makes each of them intelligible — is essential for the clinical application of the readings' nerve system framework.

The readings' characterization of the sympathetic as "the greater impulsive system" — governing not merely involuntary organic

function but the soul's activity in the body — represents the most distinctive and epistemologically challenging aspect of the readings' nerve system framework. It is also, arguably, the most clinically important. It positions the sympathetic system as the primary pathway through which mental-emotional and spiritual dimensions of experience manifest as physical health or illness, it provides the physiological basis for the readings' consistently holistic approach to diagnosis and treatment. This dimension of the sympathetic system's function has no modern scientific equivalent and is not offered here as a claim subject to modern evaluation. It is presented as the readings' own framework for understanding the relationship between soul, mind, and body in health and illness.

3.4 The Sensory Nerve System

Overview

The sensory nerve system is the third of the three nerve system components addressed in the physical readings. From an historical, conceptual perspective it is a subdivision of the cerebrospinal because its nerve bodies are located with the brain and spinal cord. The term "sensory nerve system" occurs in 23 readings; "sensory nervous system" in 27 readings; "sensory system" in 1326 readings. The relative abundance of "sensory system" citations is because it includes the sensory organs and is commonly addressed within the organ section of the reading. Thus in a typical physical reading, the sensory nerve system receives less detailed treatment than the cerebrospinal or sympathetic systems, consistent with its clinical role as a system whose disturbances are most often reflective and secondary rather than primary causes of illness.

The rarity of a finding of full systemic balance is underscored in reading 5717-3, one of the few readings that explicitly names all

three systems as fully balanced: "All balanced throughout with the nerve systems in cerebrospinal, sympathetic and sensory systems." The more typical clinical picture is one in which sensory system disturbances are the visible surface expression of deeper cerebrospinal and sympathetic disturbances — the sensory organs registering at the body's periphery what has gone wrong at the deeper levels of the nerve system.

Thus, most often, the readings use two terms nearly interchangeably for this system: sensory system and sensory organism. The term "sensory organism" appears consistently throughout the readings and seems to carry a slightly broader connotation — suggesting not merely the nerve pathways of sensation but the entire organized complex of sensory organs, their nerve supply, and their coordinated activity as an integrated perceptual system. When the readings say "the sensory organism is disturbed," they typically mean that the perceptual apparatus of the body as a whole — not just one organ or nerve — is affected.

Anatomy

The Sensory Organs and Their Nerve Supply

The sensory system in the readings refers primarily to the organs of sensation and their associated nerves — what one of the earliest readings (1911) calls "the five senses" and their "impressions to the brain."

First, we have the brain here in the head. Its impressions to the brain force are to those of the sensory system of the man. Those organs being known to the outside as the five senses. The impressions of all matter, to a living human being, are received through one of these senses, and impressed on the brain by the force, or the matter, which is digested and carried into the nerve force, and

thereby properly digested and thrown on, or impressed to, the brain, to be used at times that this body has need for it. (4841-1)

Several important points emerge from this passage. First, the sensory system is the primary interface between the external world and the brain — all impressions of matter are received through the senses. Second, sensory impressions are not merely electrical signals — they are described as being "digested and carried into the nerve force" and then "impressed to the brain." This language of digestion and impression suggests that the readings understand sensory processing as a metabolic-like activity, in which raw sensory data is transformed into a form the brain can use — analogous to the digestive transformation of food into assimilable nutrients.

The specific sensory organs most frequently mentioned in the readings are the eyes (vision), the ears (hearing — the most consistently prominent of the five), the nose (smell), the mouth and tongue (taste), and the skin (touch and feeling, discussed throughout the readings as part of the superficial circulation). These are listed with characteristic precision in reading 1158-31: "the sensory forces (eyes, ears, nose, throat, sense of touch and the like)." The inclusion of the throat is notable — the readings treat the throat, larynx, and vocal apparatus as sensory organs in their own right, receiving and transmitting vibrations that are as much sensory as motor in character. Thus speech is recognized here as a sensory phenomenon alongside the more familiar sensory function of taste. This is consistent with the anatomical reality that the cranial nerves governing these structures — particularly the vagus or pneumogastric — carry both sensory and motor fibers.

The Cranial Nerves and the Pneumogastric

The cranial nerves are generally regarded in the readings as part of the sensory system — consistent with the historical anatomical framework of Gray's Anatomy (1901), which included the cranial nerves within the cerebrospinal system's definition but recognized their particular association with the sensory organs and the viscera. The readings make frequent clinical use of the cranial nerves without always naming them anatomically, typically referring instead to the nerve supplying a specific sensory organ or visceral structure.

The most clinically significant cranial nerve in the readings is the pneumogastric nerve — the readings' consistent term for what modern anatomy calls the vagus nerve (10th cranial nerve). It appears prominently throughout the readings, confirming its clinical centrality. It is a nerve of exceptional complexity and reach, supplying the larynx, pharynx, heart, lungs, and most of the abdominal viscera with both sensory and motor fibers. In the readings' framework it occupies a position between the sensory system and the sympathetic system — governing the sensory activity of the visceral organs and their reflex connections to the brain.

The pneumogastric's anatomical centrality in the readings' nerve system framework is confirmed in reading 9-4, which provides the most anatomically specific description of its position: it is one of the four nerve components that meet at the first cervical junction — "the pineal nerve, pneumogastric nerve, sympathetic nerve (both ends) and the cerebro-spinal in its entrance to the cerebellum oblongata." This first cervical junction — at the base of the brain — is the anatomical meeting point of all four major nerve components of the readings' system: the two cerebrospinal components (spinal cord

and cranial nerves represented by the pneumogastric), the two sympathetic components (the sympathetic chain from both sides), and the pineal nerve as the integrating longitudinal axis.

The readings' approach to sensory organ pathology is characteristically spinal and circulatory rather than local. The nerve supply of the eye, for example, is traced in reading 132-1 not to the eye itself but to the spinal and circulatory conditions that govern its nerve supply: "The blood supply to these goes from its forces, or exterior forces, along the spine from the first and second cervical, the second lumbar and second dorsal." This approach — tracing sensory organ dysfunction to its spinal and circulatory origins — is consistent throughout the readings and is developed further in the Pathology subsection below.

Physiology

The Sensory System and the Sympathetic

The most important physiological relationship of the sensory system is its close association with the sympathetic system. This association is stated with particular clarity in reading 1158-31: "As the sensory forces (eyes, ears, nose, throat, sense of touch and the like) are the closer akin to the impulses of the body, their control is then NATURALLY more under the direction of what may be called the superficial or the sympathetic system." The sensory organs are "closer akin to the impulses" — meaning they operate nearer the surface of experience, both anatomically (as organs at the body's periphery) and physiologically (as receivers of external impression rather than generators of internal activity). For this reason, their nerve governance falls more naturally under the sympathetic system — the system associated with the superficial circulation, the lymphatic and emunctory channels of the skin and periphery, and the body's responsiveness to its environment.

This association is confirmed from the anatomical side in reading 443-4: the sympathetic nerve system extends "internally and superficially, or externally, even more to the activity of the sensory organs and to the whole of the sympathetic system, or to the outer portion of the body." The sympathetic system's extension to the sensory organs positions the senses as the outermost expression of the sympathetic's reach — the point at which the body's internal nerve activity meets the external world.

This sympathetic-sensory association has direct physiological implications. The sensory organs, being reflexly connected to the entire sympathetic system, register sympathetic disturbances even when they are not the primary site of that disturbance. The clinical consequence of this is illustrated in reading 304-2, in which a lesion at the second cervical produces sympathetic-cerebrospinal incoordination that "does not affect the eye, the sense of smell or taste, yet at times all feel the effect, especially just after this dizziness." The senses feel the effect of the underlying incoordination even when they are not the primary site of disturbance — because they are reflexly connected to the entire sympathetic system.

The Senses as Indicators of Systemic Health

One of the most consistent functional principles in the readings' treatment of the sensory system is that the acuity of the senses serves as a reliable indicator of the overall state of the nerve system and the body's vitality. This principle is stated explicitly in reading 1055-1: "A condition that may be an indication that this is the correct analysis is existent in the sensory forces; as to how acute has remained the taste, how acute has remained the vision and the hearing AT TIMES, when these were as the system's holding to those conditions that might be as WARNINGS to the body that a

disturbance was abroad in the physical functioning of the body itself."

This is a remarkable clinical principle. The sharpness or blunting of sensory acuity — how keen the taste, how clear the vision, how acute the hearing — is described as a warning signal from the body about the state of the deeper physiological systems. A body in good systemic balance maintains sharp senses; a body under physiological stress shows early signs of sensory compromise. The senses, being at the body's periphery and most exposed to the effects of circulatory and nerve disturbance, register systemic problems before those problems have fully manifested in the organs.

The mechanism underlying this indicator function is confirmed in reading 4841-1: sensory organ pathology arises from "the lack of nourishment from the same condition as we have through the muscular force, nerve force, or any organ in the system, when we have a lack of blood supply or proper condition to rebuild these as they are used." The sensory organs depend on adequate blood supply and nerve force for their continuous self-renewal — and when those supplies are compromised by systemic conditions, sensory function deteriorates. The eye is singled out as particularly sensitive to these supply conditions: "showing itself more in the eyes than we have in particles in other parts of the body." (4841-1)

Nerve Plasm and Sensory Transmission

The concept of nerve plasm — the material substance of the nerve through which impulses travel and within which normal nerve activity occurs — has particular significance for the sensory system as the substrate through which sensory impressions are carried from the sensory organs to the brain's processing centers. The relationship between nerve plasm and sensory function is described in reading

1068-1 in the context of difficulty retaining ideas from reading matter:

These become as plasms carried through the nerve energies themselves, in what is known as the white and the gray matter, in their reflexes from the system acting the same upon the reflexes to the sensory organism — as obtained through comparisons by seeing, the sense of smell, the sense of taste, the sense of hearing, as they respond to same. The plasm BROKEN, that makes for the replenishing of same, makes for that which becomes as a lapse, as it were, of retaining mentally — or of retaining the activity. For the whole CYCLE of same is not completed. (1068-1)

The "plasm" here refers to the nerve substance — the material that carries sensory impressions from the sensory organs through the white and gray matter of the nerve system to the brain's processing centers. When this plasm is "broken" — depleted or disrupted — the cycle of sensory impression, nerve transmission, and mental processing is incomplete, producing the lapse of retention or memory. This passage establishes the sensory system not merely as a passive receptor of external stimuli but as an active metabolic system requiring continuous renewal of its nerve plasm through adequate circulation and assimilation.

Vibration and the Sensory System

The concept of vibration pervades the readings' treatment of the sensory system in ways that are both physiologically precise and philosophically expansive. The readings use "vibration" in several distinct but related senses that are worth distinguishing.

At the most physiologically straightforward level, vibration refers to the oscillatory nature of sensory stimuli themselves. Sound is

vibration — waves of pressure in a medium that the ear translates into nerve impulse. Light is vibration — electromagnetic oscillation that the eye translates into visual impression. The vibratory resonance of a well-balanced body is described in reading 4841-1 as follows: "We produce on any of these any form or condition of grating, or forming a sound, as we have in the action of the forces onto the body, and if we have a body well-balanced, we produce a grating sound, and we are pretty apt to hear it at the other end, if it is balanced as we have the condition in this system." This is a remarkable statement — suggesting that the body in health produces a coherent vibratory resonance through all its channels, and that this resonance can be perceived and assessed.

At a second level, vibration in the readings refers to the characteristic oscillatory rate of nerve activity — the frequency at which a nerve center fires and the quality of impulse it generates. As noted in Section 3.2, the distinction between white and gray matter impulses in nervous action includes the observation that nerve cords possess "each with their vibration." (5533-1) White matter and gray matter each have their characteristic vibratory rate — and the coordination of these rates within and between the nerve systems is what constitutes normal nerve function. Spinal lesions and impingements alter the vibratory rate of the affected nerve centers, producing the functional disturbances that the readings trace through reflex chains to the sensory and other organs.

At a third and more subtle level, the readings speak of the sensory organs as capable of being attuned to different levels of vibration — not only the physical vibrations of light and sound but subtler vibratory influences that operate at the interface between the physical and the non-physical. The key statement on this point appears in reading 73-1: "The organs of the sensory system all

become attuned to the higher vibration under the strain as is produced upon the center regulating or guiding that of the return action to portions of the sensory organism to function. Hence the senses become accentuated in many instances." When the nerve centers governing the sensory organism are under strain, the senses can become attuned to higher vibratory rates — and in this state they become "accentuated," perceiving more than they would under normal physiological conditions. This is not described as pathological but as a natural consequence of certain types of nerve center activation.

The clinical application of vibratory attunement appears in reading 341-36, which uses the term in a specifically therapeutic sense — describing how osteopathic corrections to the cervical spine bring the sensory system into "an attunement for an even balance." Attunement here is not merely the absence of disturbance but a positive state of vibratory coordination in which the sensory system is properly calibrated to receive and transmit the impressions it is designed to carry.

The Senses Beyond the Physical: Extended Sensory Perception

The readings make an important distinction between the physical senses — the five organs of external sensory reception operating at their ordinary vibratory range — and a subtler form of sensing that operates through the same channels but at a different vibratory level. This extended sensory capacity represents the outer range of the sensory system's functional possibilities as the readings describe them — not a departure from normal physiology but a natural extension of the sensory system's vibratory attunement under specific conditions. The most explicit statement of this distinction appears in reading 900-236:

In the spiritual concept, coming from this Oneness, as is seen by the spiritual forces of the entity of this entity, [900], gains that full concept of how the force manifest in the material world gaining that inner consciousness without the material concept of same - same as is given that the voice - that is, that from within, so impresses - not through sensuousness - not through the sensory organism, either by feeling, touching, hearing, seeing or smelling, but by those conditions as awoken in action that same condition of SENSE of organization and realization, or consciousness from within. (900-236)

This passage explains sense operating "not through the sensory organism" (the five physical senses) but consciousness that reaches the physical mind through a different channel — "consciousness from within." This inner sensing is not opposed to the physical senses but operates in parallel with them — using the same organs but at a vibratory level that the physical senses in their ordinary functioning do not access.

The phenomenology of this extended sensing is described in reading 443-4 with remarkable specificity: "this body may be termed a very sensitive individual or body, and will respond from feeling (not from the sensory feeling), from sight (not just from the sensory sight but the feeling sight as well), from the auditory forces — that may be heard, not only from that which may be seen by self or about self, but as seen from within and from without." The parenthetical qualifications are key: "not from the sensory feeling," "not just from the sensory sight but the feeling sight as well" — the readings are carefully distinguishing between ordinary sensory function and a dimension of feeling-sight and feeling-hearing that operates through the same organs but encompasses a wider range of impression.

The relationship between this extended sensory capacity and the Leydig gland is described in reading 294-140. The Leydig gland is "the keeper — as it were — of the door, that would loose and let either passion or the miracle be loosed to enable those seeking to find the Open Door, or the Way to find expression in the attributes of the imaginative forces in their manifestation in the sensory forces of a body; whether to fingertips that would write, to eyes that would see, to voice that would speak, to the whole of the system as would feel those impressions that are attuned with those the infinite by their development." The sensory organs, under the influence of the Leydig gland and the imaginative forces of the sympathetic system, can become channels for impressions that originate beyond the physical world.

This extended sensory capacity is associated in the readings with psychic perception and spiritual development. One individual is described as "given in the psychic force through perception of sight rather than of other forces in this spiritual or soul development. Perspective insight, until it becomes as it were the abnormal or subliminal forces expressed through sight." (5717-3) The physical sense of sight here becomes a channel for psychic and spiritual perception — not by abandoning its physical function but by extending it into a higher vibratory range.

Pathology

Sensory Acuity as a Clinical Indicator

The readings' treatment of sensory pathology begins from the functional principle established in the Physiology subsection. Namely, sensory acuity is a reliable indicator of systemic health. When sensory acuity is compromised, the readings treat this not as a local pathology of the affected sense organ but as a systemic signal requiring investigation of the underlying circulatory and nerve

conditions that govern sensory organ supply. The eye is identified in reading 4841-1 as particularly sensitive to systemic supply conditions — registering deficiencies in blood and nerve supply before other organs show signs of compromise.

Nerve Plasm Depletion and Sensory Dysfunction

When the nerve plasm of the sensory pathways is depleted — through systemic debility, toxic accumulation, or inadequate circulatory supply to the nerve ganglia — the cycle of sensory impression, transmission, and mental processing is disrupted. As reading 1068-1 establishes, the "plasm BROKEN, that makes for the replenishing of same, makes for that which becomes as a lapse, as it were, of retaining mentally — or of retaining the activity. For the whole CYCLE of same is not completed." The clinical consequence is not merely sensory weakness but a failure of the complete sensory-to-mental processing cycle — the impression is received but cannot be fully carried through the nerve plasm to conscious registration and retention.

The specific clinical consequence of nerve plasm depletion in the optic pathway is described in reading 2406-1: "The ability of the nerve to supply that reflex necessary in this nerve plasm is lacking." The nerve plasm of the optic pathway has lost its capacity to generate the reflex response needed for normal vision. This is not a structural failure of the eye itself but a functional failure of the nerve plasm that carries the visual impulse.

Spinal and Circulatory Origins of Sensory Organ Pathology

The readings consistently trace sensory organ pathology not to the organ itself but to the spinal and circulatory conditions that govern its nerve and blood supply. The visual system provides the clearest illustration of this approach in reading 132-1, where the blood

supply to the eyes is traced to specific spinal levels — "from the first and second cervical, the second lumbar and second dorsal" — meaning that disturbances at these spinal levels produce visual disturbance through their effect on the blood and nerve supply to the eye rather than through any intrinsic pathology of the visual apparatus.

This spinal-circulatory approach to sensory organ pathology has direct therapeutic implications throughout the readings. Rather than treating the affected sense organ directly, the readings consistently recommend addressing the spinal mechanics and circulatory conditions that govern its supply. This is usually achieved via manual therapy corrections at the relevant spinal levels, hydrotherapy to improve the superficial circulation, and dietary and eliminative measures to reduce toxic accumulation in the lymphatic and emunctory channels through which the sensory organs' supply is compromised.

Sympathetic Disturbance and the Sensory System

Because the sensory organs are reflexly connected to the entire sympathetic system through their governance by the superficial circulation, disturbances in the sympathetic system produce secondary sensory effects even when the sensory organs are not the primary site of pathology. The clinical consequence of this sympathetic-sensory reflex connection is illustrated in reading 304-2 where a lesion at the second cervical produces sympathetic-cerebrospinal incoordination that affects the senses episodically even though the eye, smell, and taste are not the primary sites of the disturbance. The sensory organs, in the readings' framework, are the most peripheral and therefore the most exposed indicators of deeper sympathetic and cerebrospinal disturbances — registering those

disturbances in their acuity and function before the deeper organ systems show equivalent compromise.

Pneumogastric Disturbance and Visceral Sensory Pathology

The pneumogastric nerve — governing the sensory activity of the visceral organs through its extensive afferent fiber distribution — is particularly significant in the pathology of the sensory-sympathetic interface. When the pneumogastric is disturbed through pressure in the hepatic circulation or the hypogastric center, the consequences propagate both upward to the brain. This may operate through the pineal nerve connection described in reading 5454-1 and downward through the visceral organs it supplies. Nausea, described in reading 9-4 as "In the pneumogastric all nausea that comes with the continuation becomes apparent," is identified as a cardinal sign of pneumogastric involvement — the visceral sensory system's most immediate expression of disturbance in its primary governing nerve.

Modern Context

Modern sensory neuroscience identifies five classical sensory modalities — vision, hearing, taste, smell, and somatosensation (touch, pressure, temperature, pain) — each with specialized receptor organs and dedicated neural pathways to the brain. The cranial nerves govern the special senses of the head and face, with the vagus nerve — the readings' pneumogastric — being by far the most complex and widely distributed. Modern research on the vagus nerve has confirmed much of what the readings suggest about its role as a major interface between the sensory organs of the viscera and the brain. The vagus nerve carries approximately 80% of its fibers afferently — from the body to the brain — making it primarily a sensory nerve in functional terms, even though it is classified as mixed. The emerging field of interoception — the sensing of the body's internal state through vagal and other visceral afferents —

has demonstrated that the vagus nerve mediates a form of bodily self-sensing that profoundly influences emotion, cognition, and wellbeing (Berthoud & Neuhuber, 2000; Craig, 2009). This is consistent with the readings' treatment of the pneumogastric as a nerve bridging the sensory and sympathetic systems, governing both the organs' sensory reporting to the brain and the brain's reflexive response to that reporting.

The readings' concept of sensory vibration as the mechanism of sensory transduction finds a general parallel in modern sensory neuroscience, which understands each sense as a specific form of energy conversion at a characteristic frequency range. The characteristic frequency ranges of audible sound, visible light, and other sensory stimuli are precisely the vibratory ranges to which each sensory system is attuned — consistent with the readings' framework of vibratory attunement as the basis of sensory function. The more subtle vibratory attunement the readings describe — the capacity of the sensory organs to be attuned to higher vibratory influences through the Leydig gland and imaginative forces — does not correspond to a recognized modern scientific concept, but the growing body of research on neurological correlates of contemplative states and the relationship between autonomic nervous system activity and altered states of awareness represents the closest modern parallel.

The readings' concept of nerve plasm does not correspond precisely to any single modern neurological term, but it finds functional resonance with the modern understanding of axonal cytoplasm and the role of neurotrophic factors — substances required for the maintenance and regeneration of nerve tissue — in sustaining normal sensory nerve function. The concept of nerve plasm depletion as a cause of sensory dysfunction corresponds in a general

sense to modern understanding of the role of mitochondrial function and ATP production in sustaining normal neural activity, and to the clinical reality that nutritional deficiencies and systemic illness affect sensory nerve function before producing structural nerve damage.

To the extent that nerve plasm encompasses the gray matter dimension of nerve function — the synaptic processing through which nerve centers generate their incentives to the organs — the concept finds a partial resonance with the modern understanding of neurotransmitters as the chemical mediators of synaptic transmission. However, the readings' nerve plasm concept is considerably broader than this parallel captures, encompassing the structural substance of the nerve fiber, its nutritive replenishment from assimilation and glandular activity, and its role as the medium of impulse conduction along the nerve itself. So "nerve plasm" in the readings may include neurotransmitters, but is not limited in scope to neurotransmission and related chemical messengers.

The readings' distinction between ordinary sensory function and extended sensory perception — and the association of extended perception with the Leydig gland and the imaginative forces of the sympathetic system — has no direct modern scientific equivalent. Whether the readings' framework of higher vibratory attunement corresponds to anything in modern neuroscience or parapsychology remains an open question, a question itself is worth noting as a direction for future research.

3.5 Nerve Centers and Plexuses

Overview

The nerve centers and plexuses of the physical readings constitute the anatomical infrastructure through which the cerebrospinal and sympathetic systems interact with one another and govern the organs and tissues of the body. A center, in the readings' usage, is a

specific location along the nerve system where nerve impulses are concentrated, distributed, or coordinated — a point of functional significance rather than merely an anatomical intersection. A plexus is an organized network of nerves and ganglia, typically located in the body cavity, that serves as a primary coordinator between the sympathetic and cerebrospinal systems in governing a specific region of the body.

The readings describe a hierarchical architecture of centers and plexuses extending from the base of the brain to the coccyx. Understanding this architecture is essential for following the readings' clinical logic — particularly the reflex chains through which a disturbance at one center propagates to distant organs and tissues through the nerve system. The passage cited in Section 3.2 from reading 4350-1 illustrated this propagation: a primary lumbar lesion reflexly producing a secondary dorsal lesion, which then affects the cardiac plexus, which in turn disturbs the neck, head, and sensory organs. The centers and plexuses are the anatomical nodes through which these reflex chains operate.

Ten nerve centers and plexuses receive particular attention throughout the physical readings: the Pineal Nerve, the Solar Plexus, the Cardiac Plexus (including the Secondary Cardiac Plexus), the Hypogastric Plexus, the Pneumogastric Nerve, the Brachial Plexus, the Lumbar Plexus, the Sacral Plexus, the Ileum Plexus, and the Coccyx Plexus. These are presented in the subsections that follow in a consistent sequence from the brain downward. One exception to this sequence is the Pneumogastric Nerve, which despite its cranial origin is presented after the Hypogastric Plexus — reflecting the readings' consistent functional pairing of these two structures as complementary poles of the visceral nerve system rather than their anatomical sequence.

Anatomy

The Pineal Nerve

The pineal nerve is among the most unusual and distinctive anatomical concepts in the physical readings. It does not regularly appear in modern neuroanatomy by this name and requires careful attention to the readings' own descriptions before any modern interpretive framework is applied.

The readings describe the pineal nerve as a structure running alongside the spinal cord from the coccyx to the brain, traversing the entire length of the cerebrospinal system. Its full extent is described in reading 41-1 where pathology is described as "preventing the coordination from the first cervical to the end of the cerebrospinal system, which it traverses, this pineal nerve, with the spinal cord." Its clinical path is traced from the opposite direction in reading 4521-1 — from "the coccyx end and to the ilium and sacral plexus" through "the solar plexus, brachial plexus and at the first dorsal and first cervical plexus" to its terminus at the base of the brain. At its uppermost point, the pineal nerve occupies a position of particular anatomical significance — it is one of the four nerve components that meet at the first cervical junction: "the connection between the pineal nerve, pneumogastric nerve, sympathetic nerve (both ends) and the cerebro-spinal in its entrance to the cerebellum oblongata." (9-4) This first cervical junction is thus the anatomical meeting point of the pineal nerve, the pneumogastric, the sympathetic chain from both sides, and the cerebrospinal system — the point at which all major components of the readings' nerve system converge.

The pineal nerve is functionally distinct from the pineal gland, though the readings treat them as intimately associated. The clearest functional statement of this relationship appears in reading 4581-1: "the pineal gland and nerve being the seat of the forces as exercised

in the sympathetic nerve system. Hence the organs that are under the repression of the nerve system in the sympathetic receive the reaction in their functioning." The pineal nerve is thus described as the primary anatomical vehicle through which the sympathetic system's activity is distributed throughout the body — consistent with Section 3.3's description of the sympathetic as the soul-body interface and the pineal system as the coordinating center for soul forces in the physical body. Appendix A (Part 2: The Pineal System) provides comprehensive coverage of the current state of knowledge on the pineal nerve.

The Solar Plexus

The solar plexus is the largest and most clinically prominent of the three great sympathetic plexuses. Situated behind the stomach in the upper abdominal region, it consists of a dense network of nerve fibers and ganglia that constitutes — in the words of Byron Robinson (1907, p. 112) and consistent with the readings — what might be called the "abdominal brain." The readings simply call it the "solar plexus brain" (1800-15, 2259-1). It is a primary integrating center for the sympathetic governance of all the upper abdominal organs.

The solar plexus governs the organs of the upper abdomen, which appear prominently and consistently throughout the readings in association with this plexus: the liver, stomach, kidneys, spleen, pancreas, and adrenal glands. Its vertebral level is the 9th dorsal — the most important single spinal level in the readings' treatment of the solar plexus, confirming its identity as one of the three primary spinal centers established in Section 3.2. The 9th dorsal's functional scope is confirmed in reading 480-28: the 9th dorsal center "through the solar plexus area makes for those particular activities as related to the conditions that develop from the foetus force in the system" —

connecting the solar plexus not only to the upper abdominal organs but to the generative forces of the body more broadly.

The Cardiac Plexus and Secondary Cardiac Plexus

The cardiac plexus governs the heart, lungs, and associated thoracic structures at the level of the 5th and 6th dorsal vertebrae. Within the overall cardiac plexus system, the secondary cardiac plexus receives more clinical attention throughout the readings than the primary cardiac plexus itself — suggesting a functionally distinct and particularly significant substructure. The secondary cardiac plexus governs not merely the heart and lungs but the entire circulatory and nerve supply to the head and neck, as established in the clinical description in reading 4350-1: the secondary cardiac plexus supplies "the incentives of circulation through the upper portion of body, namely through the secondary cardiac plexus center, through the neck, head and throat, that is, to the frontal portion of the body." This broader governance — from the thoracic organs through the neck and head — makes the secondary cardiac plexus one of the most clinically significant coordinative structures in the readings' nerve system framework.

The Hypogastric Plexus

The hypogastric plexus governs the organs of the lower abdomen — particularly the liver-kidney axis of the hepatic circulation, the lower digestive tract, and the pelvic organs. It is situated at the level of the 4th lumbar vertebra and is associated with one of the three primary spinal centers established in Section 3.2. Its governance is consistently and prominently linked throughout the readings with the liver and kidneys — confirming its primary role as the nerve governing the lower hepatic circulatory system.

The therapeutic significance of the hypogastric plexus in the readings is consistently paired with the pneumogastric nerve as complementary structures governing the visceral nerve system. The therapeutic span described in reading 443-4 — "the hypogastric and pneumogastric area, from the 5th dorsal to the base of the brain" — encompasses both the upper and lower sympathetic plexuses, confirming that the hypogastric and pneumogastric function as complementary poles of the sympathetic system's visceral governance.

The Pneumogastric Nerve

The pneumogastric nerve — the readings' consistent term for the vagus nerve (10th cranial nerve) — is the single most clinically prominent individual nerve throughout the physical readings. Its dominance reflects its anatomical reality: the vagus is the most widely distributed cranial nerve, supplying the larynx, pharynx, heart, lungs, esophagus, stomach, liver, and most of the abdominal viscera with both sensory and motor fibers. In the readings' framework it occupies a position at the boundary between the sensory system and the sympathetic system — governing the sensory activity of the visceral organs and their reflex communication with the brain.

The most anatomically specific description of the pneumogastric's central position in the readings' nerve system appears in reading 9-4: it is one of the four nerve components that meet at the first cervical junction — "the pineal nerve, pneumogastric nerve, sympathetic nerve (both ends) and the cerebro-spinal in its entrance to the cerebellum oblongata." This first cervical junction — at the base of the brain — is thus the anatomical meeting point of all four major nerve components of the readings' system. The pneumogastric in the readings governs a wide range of visceral functions: gastric secretion

and digestion, hepatic function, cardiac rhythm, and pulmonary function — a functional distribution consistent with the anatomical reality of the vagus nerve's extensive reach through the thoracic and abdominal cavities.

The Brachial Plexus

The brachial plexus governs the nerve supply to the arms, shoulders, and hands, originating from the lower cervical and upper dorsal vertebrae — primarily the 1st and 2nd dorsal and the lower cervicals. Throughout the readings, cervical association is the most consistent feature of brachial plexus involvement, followed by clinical references to the arms and shoulders — confirming its primary anatomical role as the nerve governing upper extremity function. The brachial plexus is also connected to the thyroid gland and upper torso through its cervical origins, giving it a broader systemic significance than its primary association with the upper limbs might suggest.

The Lumbar Plexus

The lumbar plexus is centered at the 4th lumbar vertebra — one of the three primary spinal centers — and governs the kidneys, lower digestive tract (particularly the colon), and lower extremities (locomotory). The 4th lumbar is the key vertebral level for lower abdominal and renal nerve coordination throughout the readings. Its coordinating function in relation to the 9th dorsal is described in reading 480-28: the 4th lumbar coordinates "with the 9th dorsal, where there is made for the gradual relaxation or drainages set so that the kidneys, the lower portion of the digestive system and all are made to coordinate." This coordination between the 4th lumbar and the 9th dorsal through osteopathic treatment is one of the most frequently recommended therapeutic interventions in the physical readings — the two primary mid-body spinal centers working

together to restore organ coordination throughout the abdominal cavity.

The Sacral Plexus

The sacral plexus governs the pelvic organs, lower extremities, and the sciatic nerve distribution. Throughout the readings, its most frequent association is with the lumbar plexus — reflecting the readings' consistent treatment of the lumbar and sacral as a coordinating unit governing the lower body. The sacral and coccyx are frequently mentioned together in the readings, particularly in cases involving lower limb dysfunction, pelvic organ disturbance, and sciatic conditions.

The Ileum Plexus

The ileum plexus is one of the more anatomically specific plexus references in the readings — governing the nerve supply to the terminal small intestine (ileum), caecum, and the associated lacteal and lymphatic ducts of the mesenteric system. Its primary associations throughout the readings are with the lumbar plexus and the caecum, confirming its primary anatomical role in governing the ileocaecal junction and the assimilative functions of the lower small intestine.

The Coccyx Plexus

The coccyx plexus governs the terminal end of the cerebrospinal system — the nerve supply from the coccyx or tailbone. In the readings, the coccyx is treated not as an anatomically insignificant remnant but as a functionally important terminal center through which the base of the cerebrospinal system connects with the sacral, lumbar, and pelvic nerve plexuses. Its most significant anatomical relationship in the readings is its position as the origin point of the pineal nerve's longitudinal course — a disturbance at the coccyx can

propagate through the pineal nerve upward through every center and plexus of the body to the base of the brain, as described in Section 3.5 Pathology below.

Physiology

The Pineal Nerve

The physiological role of the pineal nerve in the readings is that of the primary longitudinal integrating axis of the sympathetic system's impulsive dimension — the anatomical path through which impulses from the soul's level are distributed from the base of the spine through every center and plexus to the brain. The functional statement of this role appears in reading 4581-1: "the pineal gland and nerve being the seat of the forces as exercised in the sympathetic nerve system. Hence the organs that are under the repression of the nerve system in the sympathetic receive the reaction in their functioning." The pineal nerve, as the seat of the sympathetic system's governing forces, is the physiological vehicle through which the soul's impulses — received through the sympathetic system's imaginative-impulsive dimension — are distributed to the body's organs and tissues through the great plexuses along its course.

The pineal nerve's unique traversal of the entire spinal axis — from coccyx to brain — gives it a coordinating function that no other nerve structure in the readings possesses. It passes through each of the major plexuses on its longitudinal course — the solar plexus, the brachial plexus, and the first dorsal and first cervical plexuses — integrating the activity of each center into a unified longitudinal nerve axis. This integration is developed further in the Hierarchy of Centers synthesis at the close of this section.

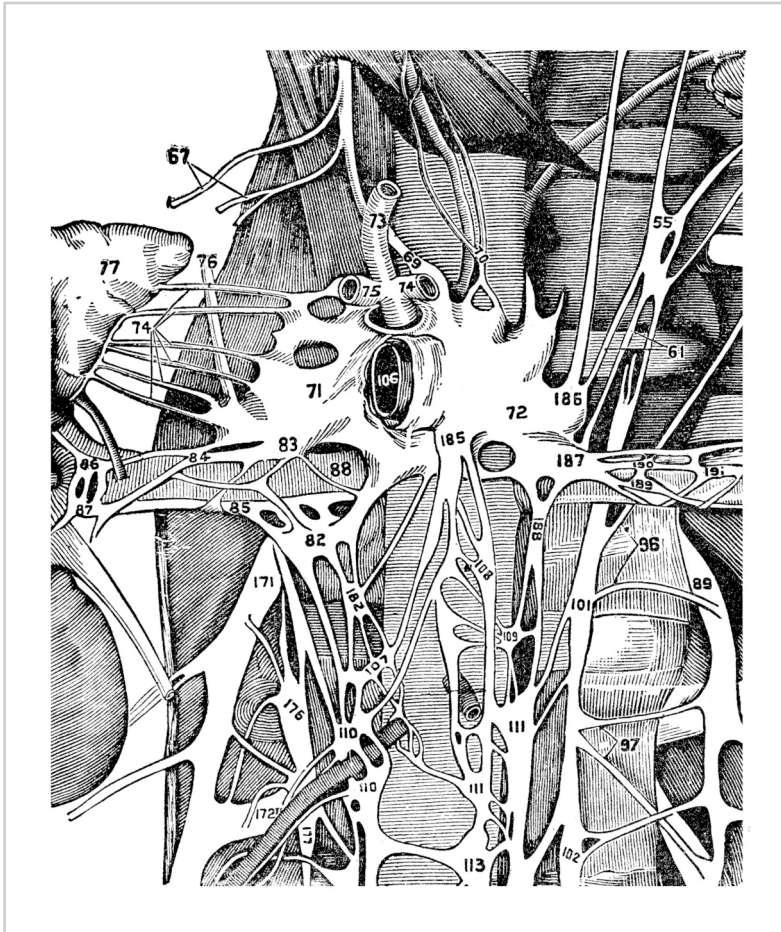


Fig. 3.5. The solar plexus, or abdominal brain (71, 72), drawn from cadaver dissection, illustrating its location at the convergence of the major visceral arteries — celiac (73–75), superior mesenteric (16), and renal (88) — with radiating plexuses extending to the upper abdominal viscera. Robinson described this ganglion complex as dominating visceral function "as to vascularity (blood and lymph), peristalsis, absorption, and secretion." Source: Robinson (1907), Fig. 37. Public domain.

The Solar Plexus

The physiological role of the solar plexus is that of a bidirectional nerve relay center governing all the upper abdominal organs through both afferent and efferent pathways. The afferent fibers from the solar plexus carry sensory information from the upper abdominal organs to the brain; the efferent fibers carry motor and

regulatory impulses back to those organs. This bidirectional activity makes the solar plexus both a receiver of organ status information and a transmitter of regulatory impulses — a true integrating center rather than a simple relay.

The solar plexus is also identified in the readings as one of the three centers through which kundalini or life-force energy is spiritually distributed through the body. Reading 3676-1 identifies the 9th dorsal as one of these centers "through which there is activity of the kundalini forces that act as suggestions to the spiritual forces for distribution through the seven centers of the body" — giving the solar plexus a spiritual physiological significance that extends beyond its role as an organ coordinator.

The Cardiac Plexus and Secondary Cardiac Plexus

The physiological role of the cardiac plexus centers on the governance of cardiac and pulmonary function and their circulatory coordination with the upper body. The secondary cardiac plexus in particular is described throughout the readings as particularly important for circulatory timing and the rhythm of the body's daily circulatory cycle — governing the incentives of circulation through the head, neck, and upper body through its position at the upper thoracic spinal level.

The complementary relationship between the cardiac plexus and the lumbar plexus in governing the body's overall circulatory balance is illustrated in reading 106-2, which traces how lumbar and 12th dorsal strain "reacts with the cardiac plexus and sympathetic nerves, bringing distress in the vasomotor nerves" — demonstrating that the cardiac plexus's physiological function is reflexly connected to the lower spinal centers and cannot be understood in isolation from the lumbar and sacral plexuses below it.

The Hypogastric Plexus

The physiological role of the hypogastric plexus is the governance of the lower hepatic circulatory system — the liver-kidney axis and the lower digestive and pelvic organs. Its complementary pairing with the pneumogastric nerve as the two poles of the visceral nerve system means that its physiology cannot be understood apart from the pneumogastric's governance of the upper viscera. Together they constitute the sympathetic system's complete visceral governance — the hypogastric governing the lower organs through the lumbar sympathetic chain, the pneumogastric governing the upper organs through its cranial origin, and the two together maintaining the balance between upper and lower visceral function that the readings associate with normal organ coordination.

The Pneumogastric Nerve

The physiological role of the pneumogastric nerve encompasses the sensory governance of the visceral organs and their reflex communication with the brain, as well as the motor governance of the upper digestive and respiratory tracts. Its most prominent physiological associations throughout the readings are with gastric secretion and digestion — confirming that the pneumogastric is understood as the primary nerve governing the upper digestive process from the pharynx through the stomach. Its governance of cardiac rhythm and pulmonary function reflects the vagus nerve's modern understood role as the primary parasympathetic supply to the heart and lungs.

The physiological pairing of the pneumogastric with the hypogastric plexus — as described in reading 443-4's therapeutic instruction to address "the hypogastric and pneumogastric area, from the 5th dorsal to the base of the brain" — reflects the readings' understanding that normal visceral physiology requires the

coordinated activity of both structures. The pneumogastric carries the parasympathetic dimension of visceral governance downward from its cranial origin; the hypogastric carries the sympathetic dimension upward from its lumbar origin; and together they maintain the autonomic balance through which the visceral organs function normally.

The Brachial Plexus

The physiological role of the brachial plexus is the nerve supply governing voluntary movement and sensation in the upper extremities, coordinated through the lower cervical and upper dorsal spinal centers. Its connection to the thyroid gland and upper torso through its cervical origins gives it a broader physiological significance — the brachial plexus participates in the governance of the upper body's circulatory and lymphatic activity through the sympathetic connections at the cervical and upper dorsal levels.

The Lumbar Plexus

The physiological role of the lumbar plexus is the nerve supply governing the kidneys, lower digestive tract, and lower extremities, coordinated at the 4th lumbar level as one of the three primary spinal centers. Its most significant physiological function in the readings is the coordination between the 4th lumbar and the 9th dorsal — the two primary mid-body spinal centers whose therapeutic coordination is the single most frequently recommended spinal intervention in the physical readings. This coordination governs the nerve incentives to the entire abdominal organ system — from the upper abdominal organs (through the 9th dorsal and solar plexus) to the lower abdominal organs and kidneys (through the 4th lumbar and hypogastric plexus).

The Sacral Plexus

The physiological role of the sacral plexus is the nerve supply governing the mesenteric and abdominal muscular system, the pelvic organs, and the lower extremities. Its coordinating relationship with the lumbar plexus means that the sacral plexus participates in the governance of the lower digestive and eliminative system as well as the lower limb's locomotory function. The readings consistently treat the lumbar and sacral as a functional unit — the lumbar governing the organ supply at the 4th lumbar level and the sacral extending that governance into the pelvis and lower limbs.

The Ileum Plexus

The physiological role of the ileum plexus is the nerve supply governing the assimilative functions of the terminal small intestine — the lacteal and lymphatic duct system through which fat-soluble nutrients are absorbed and lymphatic drainage from the small intestine is maintained. Its relationship to the lacteal ducts makes it a critical node in the connection between nerve system integrity and nutritive function — the point at which spinal mechanics directly affect the body's capacity to extract nourishment from food. When the ileum plexus is functioning normally, the lacteal ducts maintain adequate assimilation through the ileocaecal junction; when the ileum plexus is disturbed, assimilation is compromised and the lymphatic drainage from the small intestine is impaired.

The Coccyx Plexus

The physiological role of the coccyx plexus in the readings is the terminal coordinative function of the lower cerebrospinal system — the point at which the base of the cerebrospinal system connects with the sacral, lumbar, and pelvic plexuses and through which the pineal nerve's longitudinal course originates. The coordinating function of the coccyx plexus in relation to the 4th lumbar is

described in reading 619-4: "if there would be removed those pressures first in the coccyx end of the muscular forces, as related to the branch end of the cerebrospinal system, and coordinate the coccyx plexus and the 4th lumbar plexus, then we would find that we would bring to the lower portion of the body a nearer NORMAL condition." The coccyx and 4th lumbar together constitute the terminal and primary centers of the lower cerebrospinal system — their coordination being the physiological key to normalizing lower body function.

The coccyx-to-brain connection through the pineal nerve gives the coccyx plexus a physiological significance that far exceeds what its anatomical position as the terminal segment of the spine might suggest. It is, in the readings' framework, the energetic base of the body's primary integrative nerve axis — consistent with the readings' broader discussions of kundalini and spiritual energy distribution through the spinal centers, in which the base of the spine is understood as the origin point of the life-force energy that rises through the spinal centers to the brain.

Pathology

The Pineal Nerve

The pathological consequences of pineal nerve disturbance in the readings are among the most wide-ranging of any single nerve structure — reflecting the pineal nerve's longitudinal extent through the entire spinal axis and its contact with every major center and plexus along its course. The cascade of symptoms that follows repression of the pineal nerve and gland is listed in reading 4581-1 as dull headaches, eye disturbance, throat and bronchial congestion, disturbed heart action, impaired respiration, nausea and digestive disturbance, and kidney overtaxation. This multi-system cascade — affecting structures from the brain to the kidneys — is a direct

consequence of the pineal nerve's longitudinal distribution. A pressure anywhere along its course can produce reflex disturbances at any point on that course.

Fainting spells are linked to pineal nerve involvement in reading 308-7: "pressures upon the pineal nerve forces; also the inability of the impulses of those areas to coordinate with the reaction from the areas in the lower portion of the medulla oblongata." The pineal nerve here is identified as a critical mediator between the spinal centers and the medulla oblongata — and its disturbance produces the loss of coordinative function between the spinal and brain levels that manifests as fainting. Hallucinations are connected to pineal nerve center depression in reading 2197-1, which describes "hallucinations in the vibration to the brain center or through the cerebellum oblongata" — positioning the pineal nerve as a critical mediator of the vibratory coordination between the brain and the sympathetic system that is necessary for normal consciousness. The significance of birth mechanics for pineal nerve integrity is noted in reading 3792-1, which describes how strain on this nerve at birth — produced by the mechanics of delivery — can produce lifelong consequences throughout the body through its disruption of the pineal nerve's coordinating function.

The Solar Plexus

The pathological consequences of solar plexus disturbance center on the disruption of upper abdominal organ coordination and the somatic expression of emotional states. When the bidirectional flow of the solar plexus is disrupted — by spinal pressure at the 9th dorsal, by toxic accumulation in the hepatic system, or by emotional disturbance mediated through the sympathetic system's imaginative dimension — the solar plexus is unable to maintain normal organ

coordination for the liver, stomach, kidneys, spleen, pancreas, and adrenal glands.

The solar plexus is also the primary site where emotional states — particularly fear — find their somatic expression. A case in which the blood supply's abnormal condition is "being acted upon by the nervous conditions that exist in the body from time to time, but present a condition more of fear than of an organic condition" is described in reading 4826-1. The solar plexus, as the primary mediator of the sympathetic system's imaginative dimension to the upper abdominal organs, is the anatomical locus of this psychosomatic connection — the site at which fear, anxiety, and sustained psychological tension produce their most direct organ consequences.

The Cardiac Plexus and Secondary Cardiac Plexus

The pathological consequences of cardiac plexus disturbance involve both the thoracic organs and — through the secondary cardiac plexus — the head, neck, and upper body circulation. Nerve tension conditions acting through the cardiac plexus allow "the filling up of portions in the venous or vein circulation so as to give above the normal pressure" — connecting cardiac plexus disturbance directly to blood pressure abnormalities, as described in reading 4445-1. The reflex chain that produces secondary cardiac plexus disturbance from lower spinal causes is illustrated in reading 106-2: lumbar and 12th dorsal strain reacts with the cardiac plexus and sympathetic nerves, bringing "distress in the vasomotor nerves" — with consequences including pains in the head, eyes, and base of brain through the medulla oblongata.

The secondary cardiac plexus in particular serves as an intermediate relay point in reflex chains that originate in the lower spine and terminate in the medulla oblongata — illustrating why apparently

unrelated symptoms in widely separated body regions can share a common nerve pathway. Reading 2103-1 describes a reflex from the coccyx and lower lumbar area through the secondary cardiac plexus that produces throat, head, and cervical symptoms "sympathetically; not directly, but SYMPATHETICALLY in the cerebro-spinal we find the 3rd dorsal and in the 4th cervical reflexes that cause a reaction in the secondary cardiac reflexes." The distinction between direct and sympathetic action is characteristic of the readings' clinical precision. The secondary cardiac plexus can be disturbed either by direct pressure at the 5th or 6th dorsal or reflexively through the sympathetic chain from distant spinal levels.

The Hypogastric Plexus

The pathological consequences of hypogastric plexus disturbance center on the lower hepatic circulatory system and its organ governance. The readings' most direct illustration of the hypogastric plexus's clinical governance of the hepatic system appears in reading 2229-1 (cited in Chapter 2). High hepatic circulation is "produced by condition in the hypogastric centers, shows how this condition affects the liver direct, though not organically, for both excretory and secretive system is worked above normal." The hypogastric center's nerve disturbance produces a functional — not organic — overstimulation of the liver, demonstrating how a nerve center disturbance produces organ dysfunction without any structural damage to the organ itself.

The propagation of hypogastric disturbance through the pineal nerve upward to the brain is described in reading 5454-1: "Strain on the pneumogastric at the present time, produced by pressure in hepatic circulation, and in the hypogastric center especially, which brings the direct connection, or pressure on the center that leads to the base or through the pineal nerve." Hypogastric disturbance can

thus propagate not only to the hepatic organs but through the pineal nerve upward to the brain — illustrating how the lower plexus connects to the broader nerve axis of the body through the pineal nerve's longitudinal course.

The Pneumogastric Nerve

The pathological consequences of pneumogastric disturbance are primarily visceral — affecting the upper digestive system, cardiac rhythm, and pulmonary function through the nerve's extensive distribution. The cascade that follows pneumogastric disturbance is described in reading 4581-1: "Again the reaction to pneumogastric center and nothing seems to suit the appetite." Nausea is identified in reading 9-4 as a cardinal sign of pneumogastric involvement: "In the pneumogastric all nausea that comes with the continuation becomes apparent." This is consistent with the modern understanding of vagal irritation as a primary cause of nausea — the visceral sensory system's most immediate expression of disturbance in its primary governing nerve.

The readings frequently trace pneumogastric disturbance to its spinal and circulatory origins rather than to the nerve itself — consistent with the readings' general approach to nerve pathology as the consequence of spinal mechanics and circulatory conditions rather than intrinsic nerve disease. The pairing of pneumogastric and hypogastric disturbance in many readings reflects the readings' understanding that the two structures function in coordinated opposition — and that disturbance of one typically produces secondary disturbance of the other through their shared governance of the visceral nerve system.

The Brachial Plexus

The pathological consequences of brachial plexus involvement in the readings extend beyond the upper extremities to the broader systemic picture produced by cervical and upper dorsal spinal disturbance. A complex multi-system picture produced by brachial plexus involvement combined with cardiac and hepatic circulation disturbances is described in reading 265-6 — illustrating how upper and lower body symptoms can be connected through their common nerve origins in the cervical and upper dorsal spine.

An unusual extension of the brachial plexus's pathological significance appears in reading 4745-1 (discussed in Section 2.3.3), in which the nerve ganglia of this region are described as taking on an emunctory function when they are sufficiently weakened: "the nerve ganglia have become so weakened in times past as to become in such a manner that they partake of the action of the emunctory system." This observation — that nerve ganglia can assume a cleansing role when the lymphatic and emunctory channels are insufficient — illustrates the readings' understanding of the nerve system as dynamically adaptive rather than functionally fixed.

The Lumbar Plexus

The pathological consequences of lumbar plexus disturbance are among the most systemically wide-ranging in the readings, precisely because the 4th lumbar is one of the three primary spinal centers and its disturbance therefore affects the entire lower body's organ coordination. A characteristic lumbar plexus reflex chain is traced in reading 4530-1. Impingements at the 8th, 9th, and 10th dorsal and 3rd and 4th lumbar produce "improper incentives through the mesenteric system, or the intestinal tract" — leading to toxin production, organ disturbance affecting the circulatory system, and a cascade of headaches, sensory disturbances, kidney

dysfunction, and heartburn. This multi-symptom cascade from a few spinal impingements illustrates why the lumbar plexus — despite its anatomically low position — has such wide systemic consequences through the reflex patterns it mediates.

The Sacral Plexus

The pathological consequences of sacral plexus disturbance center on the mesenteric and abdominal muscular system and the pelvic organs. Pressures in "the last dorsal, in the last three lumbar centers, and in the sacral plexus and sacral coccyx plexus, reflexly" produce "irritation through their reflexes from these centers. Hence with the present condition we find the walls of the mesenteric system weakened in their nerve energy," as described in reading 2457-1. Mesenteric wall weakness leads to organ prolapse, poor assimilation through the lacteal ducts and a cascade of digestive and circulatory disturbances — all traceable to the sacral plexus disturbance at the bottom of the reflex chain.

The Ileum Plexus

The pathological consequences of ileum plexus disturbance center on the disruption of assimilation through the lacteal duct system and the ileocaecal junction. The clinical cascade that begins in the ileum plexus is described in reading 4350-1: "The condition in the intestinal tract there was the first beginning of the abnormal conditions at present existing, the lack of secretions being thrown in the system from the perennial gland causing the impacts in this portion of the body... This produced the high circulation. The action of this inflammation first began the lesion in the ilium forces." The ileum plexus is here identified as the site where digestive dysfunction initially manifests as a nerve lesion that then propagates upward through the sympathetic chain.

When the ileum plexus is disturbed — by lesions, adhesions, or toxic accumulation at the ileocaecal junction — lacteal duct function is impaired, assimilation of fat-soluble nutrients is compromised, and the lymphatic drainage from the small intestine is disrupted. The consequence of this disruption is named directly in reading 2457-1: "the assimilation through the lacteal and lachrymal ducts bring poor stimulus to the recuperative forces in body." The ileum plexus is thus a critical node in the connection between nerve system integrity and nutritive function — the point at which spinal mechanics directly affect the body's capacity to extract nourishment from food.

The Coccyx Plexus

The pathological consequences of coccyx plexus disturbance are disproportionate to the coccyx's anatomical position precisely because of its role as the origin point of the pineal nerve's longitudinal course. A disturbance at the coccyx can propagate through the pineal nerve upward through every center and plexus of the body to the base of the brain, as described in reading 4521-1: pressures in "the coccyx end and to the ilium and sacral plexus, bringing pressure on the nerves of the false pelvis, which pressing on the pineal nerve brings then the whole reaction to those centers as brought in the system in the junction with the pineal nerve's reaction in the organs through which it passes, and the center through which it becomes entwined, as we have in the solar plexus, brachial plexus and at the first dorsal and first cervical plexus." The coccyx disturbance here propagates through the pineal nerve through the solar plexus, brachial plexus, and first cervical plexus to the base of the brain — producing systemic consequences through every major center along the pineal nerve's course.

The therapeutic priority of coccyx plexus correction in lower body dysfunction is described in reading 619-4: coordinating the coccyx

plexus and the 4th lumbar plexus brings "to the lower portion of the body a nearer NORMAL condition." The coccyx is thus not a vestigial terminal structure but a functionally important starting point for the body's primary integrative nerve axis — and its correction is a prerequisite for normalizing the lower body's function through the lumbar and sacral plexuses above it.

The Hierarchy of Centers: An Integrated View

The ten nerve centers and plexuses described in this section do not operate independently but form an integrated hierarchical system in which each center is connected to adjacent centers through the sympathetic chain and to the cerebrospinal system at its vertebral level. The integration of multiple centers in severe multi-system disease is described in reading 5700-1: "the perineurial of almost all centers in the sacral, ilium and hypogastric plexuses show inflammation. These make pressure on those direct to the brain through the pineal nerve through the cerebro-spinal and both branches of the sympathetic." The pineal nerve, as the longitudinal integrating axis, is the anatomical pathway through which disturbances at multiple centers are simultaneously relayed to the brain — producing the systemic clinical pictures that characterize the most complex cases in the physical readings.

From a therapeutic standpoint, the three primary centers — 3rd cervical, 9th dorsal, and 4th lumbar — are identified in reading 1087-1 as the therapeutic priorities precisely because they govern the three great plexuses through which the remainder of the body's nerve coordination is organized: the brachial-cervical complex, the solar plexus and its upper abdominal organs, and the hypogastric-lumbar complex with its lower abdominal and pelvic organs. Osteopathic corrections at these three levels, coordinated

appropriately, address the largest proportion of the body's nerve centers through their reflex relationships to the three great plexuses.

Modern Context

Modern neuroanatomy recognizes the brachial, lumbar, and sacral plexuses as defined nerve networks arising from the spinal cord at their respective vertebral levels — consistent with the anatomical locations the readings identify. The solar plexus is recognized as the celiac plexus — the largest autonomic nerve plexus in the abdomen, governing the upper abdominal viscera through both sympathetic and parasympathetic fibers. The hypogastric plexus is recognized as the superior and inferior hypogastric plexuses governing the pelvic organs. The cardiac plexus governs the heart and lungs through parasympathetic and sympathetic fibers from the vagus and thoracic sympathetic chain respectively.

The pneumogastric nerve corresponds to the vagus nerve — perhaps the most intensively studied nerve in contemporary clinical neuroscience, particularly since the development of vagus nerve stimulation as a therapeutic modality for epilepsy, depression, and inflammatory conditions. Modern research has confirmed the vagus nerve's role as the primary afferent pathway for visceral sensory information to the brain — with approximately 80% of vagal fibers being afferent rather than efferent — consistent with the readings' treatment of the pneumogastric as a primary sensory nerve of the visceral organs. The emerging field of interoception, and the growing clinical application of vagus nerve stimulation across a wide range of conditions, represents one of the most active areas of modern neuroscience and finds consistent resonance with the readings' treatment of the pneumogastric as a primary integrative nerve of the body's internal environment (Khalsa et al., 2018; Chen & Liu, 2025).

The ileum plexus corresponds in a general sense to the nerve supply of the ileocaecal region through the superior mesenteric plexus and the enteric nervous system of the terminal ileum — though no specific modern anatomical structure is designated by this name. The readings' consistent association of the ileum plexus with lacteal duct function and mesenteric assimilation finds resonance with the modern understanding of the enteric nervous system's governance of intestinal motility, secretion, and lymphatic function in the terminal small intestine.

The pineal nerve has no equivalent in modern neuroanatomy. No nerve structure is recognized as traversing the full length of the spinal cord alongside it in the manner the readings describe. The filum terminale — the fibrous extension of the spinal cord to the coccyx — is the closest anatomical parallel, but it carries no recognized nerve function. Whether the readings' pineal nerve describes a functional entity that modern anatomy does not recognize, or uses the term in a sense that is not directly anatomical, is a question the readings themselves do not resolve. Its consistent association with the pineal gland, the sympathetic system, and the soul-body interface suggests that it is understood in the readings as a functional-vibratory structure rather than a purely anatomical one — consistent with the readings' broader framework in which anatomical and energetic dimensions of the body are not sharply distinguished. Appendix A (Part 2: The Pineal System) provides an extensive review of the pineal nerve concept with regard to the current neuroscience literature.

3.6 Principles of Nerve System Function and Pathology

Overview

The preceding sections of Chapter 3 have established the anatomy and physiology of the readings' nerve system — its three major divisions, their centers and plexuses, and their functional associations with the body's circulatory, organ, and eliminative systems. This final section addresses the conceptual principles through which the readings understand how the nerve system works, how it fails, and how it can be restored to normal function.

These principles differ in character from the anatomical and physiological material of Sections 3.2 through 3.5. They are not structures with a describable location, nor are they functions associated with a specific system or plexus. They are explanatory frameworks — the conceptual vocabulary through which individual clinical cases are understood and through which the nerve system's behavior in health and disease becomes intelligible. As noted in the Introduction to this volume, some sections of the book fall more naturally into a less structured discussion than the Anatomy / Physiology / Pathology framework that organizes the system and center sections; this section is one of them. Its organization is thematic rather than architectural, following the internal logic of the readings' own clinical reasoning rather than the anatomical sequence of the sections that precede it.

The principles addressed in this section are: coordination and incoordination; voluntary and involuntary nerve activity; impulse and activity in white and gray matter; nerve plasm; spinal lesions and subluxations; nerve reflexes; the imaginative system as a principle of nerve pathology and therapeutics; and locomotion.

These are not independent clinical topics — they are aspects of a single integrated framework in which health means the continuous, dynamic coordination of the nerve system's multiple components, and disease arises when that coordination fails at any level.

Coordination: The Central Principle

Of all the principles in the readings' nerve system framework, coordination is the most fundamental — appearing throughout the physical readings and accounting for nearly the entire conceptual vocabulary of what the readings understand by health in the nerve system. The readings use coordination not merely as a technical term but as a comprehensive description of what health itself means at the level of the nerve system. Incoordination — the failure of coordination — is consistently identified as the central pathological mechanism of the nerve system, appearing with sufficient frequency throughout the readings to confirm it as the dominant clinical theme of the nerve section.

The most philosophically precise statement about coordination in the readings appears in reading 3049-1, which describes what incoordination between the body's three dimensions actually means for the human being:

The incoordination that exists in the general physical forces of the body, also those activities between the sympathetic and the central nervous systems, and the voluntary and involuntary nerve forces, indicate the real existence of those spheres so often mentioned through this channel, — of body, mind and soul, and their relationships one to another. They are one, if they are coordinant, they are recognized as being separate when — as here — they do not coordinate. (3049-1)

When the body's physical, mental, and soul dimensions are coordinant — when the cerebrospinal, sympathetic, and sensory systems work in proper harmony — the three dimensions are experienced as one unified whole. When incoordination develops, the dimensions are experienced as separate — the body refusing to do what the mind directs, the mind unable to connect with the soul's deeper purposes, the soul's impulses failing to find expression through the physical body.

This framing positions coordination not as a mechanical property of the nerve system but as the physiological expression of the human being's integrity as a unified physical-mental-spiritual entity. Health, in the readings, is not merely the absence of symptoms — it is the lived experience of wholeness that flows from full coordination among the body's dimensions. The therapeutic implication is made explicit in reading 2675-8: "Coordinate that of the mental with that of the physical, in this sense and manner... the mental being related to the spiritual, needs that full cooperation that is necessary for a well-rounded life." Coordination is at once a nerve system concept, a health concept, and a spiritual one.

The unity of the body — in which a disturbance anywhere propagates everywhere through the nerve system's reflexes — is the physical expression of the same principle of oneness that applies to the body-mind-soul relationship. This is stated with elegant economy in reading 1710-10: "Remember, — as the body, mind and soul are one, so is the circulation of the body. Congestions that affect the toe may also affect the nostril, or the head." No part of the body is isolated from any other; no dimension of the person is isolated from the others. The reflex network of the nerve system is the physiological mechanism through which this unity — and its disruption — expresses itself in clinical reality.

The clinical consequence of progressive coordination failure is described in reading 5385-1 as nerve exhaustion: "the incoordination between the sympathetic and the cerebrospinal nervous systems; and thus the lack of the ability of the body to store energies, and thus a general relaxed condition of the nerve forces of the body, or nerve exhaustion, so that with any general activity of the body, long on the feet, or in associations where arguments or any conditions where disputations might occur it brings on associations as a weakness and a dizziness to the centers where the cerebrospinal and sympathetic coordinate." When coordination fails, the nerve system loses its capacity to store and deploy energy efficiently — and the simplest physical or mental demands become exhausting. Appendix C focuses on nervous system coordination/incoordination in the context of epilepsy. However the concepts apply to interactions at all levels of nerve activity and across diverse diagnostic categories.

Voluntary and Involuntary Nerve Activity

The distinction between voluntary and involuntary nerve activity is one of the most clinically significant conceptual pairs in the readings' nerve system framework. The voluntary impulses are those associated with conscious intention — the cerebrospinal system's carry-out of directed mental activity in the physical world. The involuntary impulses are those associated with the automatic, unconscious governance of the body's vital processes — the sympathetic system's continuous management of organ function, circulation, digestion, and elimination.

The most direct clinical description of what happens when voluntary and involuntary activity lose their proper coordination appears in reading 3158-1:

The voluntary and involuntary reaction or impulse, as carried in the white and gray matter of the nervous

systems tends in certain centers to run together and become confusing to the body. Hence oft the things the body would do seem apparently unable to reach the consciousness. Things the body in itself promises not to do, it does. (3158-1)

"Run together and become confusing" — this phrase is clinically precise. When the distinction between voluntary and involuntary impulses breaks down at specific nerve centers, conscious intention and automatic bodily activity can no longer be clearly distinguished. The body acts when the mind has not directed it to; the mind's directions fail to produce physical action. The result is a form of functional incoordination in which the person's conscious will and their body's spontaneous behavior are partially dissociated.

A milder form of this inversion in the extremities is described in reading 21-1: "Rather the voluntary action of involuntary muscular forces." The involuntary muscular forces — those normally governed by the autonomic and reflex systems — are here being activated by what should be voluntary pathways, and vice versa. The result is impaired use of the extremities — not from structural damage to the muscles but from the crossing of voluntary and involuntary nerve pathways at the plexus level.

The connection between this voluntary-involuntary inversion and the imaginative and sensory systems is described in reading 5683-1: "pressures that prevent their normal impulse of that received from the imaginative or the sensory system, or both, that makes for those conditions that become — in their reaction — as incoordinate, from impulses of activity." The imaginative system's unconscious impulses and the sensory system's conscious impressions normally work in coordinated opposition — the imaginative carrying the involuntary dimension of nerve activity, the sensory receiving and

translating voluntary impressions from the external world. When these are incoordinate, the body's capacity to respond appropriately to both its internal soul guidance and its external environment is compromised.

Throughout the physical readings, voluntary and involuntary aspects of nervous system functioning are discussed with sufficient consistency to confirm this as a major clinical theme. The most severe expressions of this incoordination produce the condition described in reading 3049-1 — the inability of activities that should be fully voluntary to remain under conscious control, or involuntary activities requiring excessive conscious effort to manage.

Again, Appendix C addresses this topic in the context of epilepsy, but has wider implications for the role of nervous system coordination in conscious/unconscious and voluntary/involuntary interactions.

Impulse and Activity: White and Gray Matter

The distinction between impulse and activity — associated respectively with white and gray matter throughout the nerve system — provides the readings' most granular account of how the nerve system actually works at the tissue level. This distinction, introduced in Section 3.2 in the context of cerebrospinal function and in Section 3.4 in the context of sensory nerve plasm, applies equally to both the cerebrospinal and sympathetic systems and underlies the readings' understanding of nerve system failure at the most fundamental level.

The pathological consequence of impaired white-gray activity is described with particular vividness in reading 3602-1: "The activities are then being depleted and these prevent the white and gray impulses in nerve plasma from reacting." When the nerve plasm is

depleted — from systemic debility, from toxic accumulation, or from the nerve system simply running down — the white and gray matter impulses can no longer react effectively. The nerve system has not been structurally damaged; its capacity for normal reaction has simply been depleted.

The production of this depletion through mental strain is described in reading 4393-1: "that the body from the mental portion has been under strain is evidenced by the characterization in many of the centers along the cerebro-spinal nervous system, especially in those ganglia along the 3rd, 4th and 5th dorsal centers. WITH the unbalanced condition in the elements of the system, the organs that function under the impulse of those ganglia or centers show that there is a congestion at times in the FUNCTIONING of digestive and assimilation." Mental strain depletes the ganglionic nerve centers' capacity to generate proper impulse — and the organs supplied by those centers reflect this depletion in their functional disturbances. The connection between mental-emotional experience and ganglionic nerve center depletion illustrated here is one of the clearest expressions in the readings of the physiological mechanism through which psychological states produce organ dysfunction.

Gray's Anatomy (1901) provided the historical context for this distinction:

All these nervous tissues are composed chiefly of two different structures – the gray or cineritious and the white or fibrous. It is in the former [gray], as is generally supposed, that nervous impressions and impulses originate, and by the latter [white] that they are conducted. (Gray, 1901, p. 1113)

In the readings' framework, this anatomical distinction becomes a physiological and clinical principle: gray matter is where neural

activity is generated and processed; white matter is where impulses are transmitted. When either dimension is compromised — by pressure on the nerve, by depletion of nerve plasm, or by the incoordination of the systems that supply each — normal nerve function is impaired at its most fundamental level.

Nerve Plasm

Nerve plasm — introduced in Section 3.4 in the context of the sensory system — deserves full development here as a distinct and important principle of the readings' nerve system physiology that applies across all three nerve systems. In the readings, nerve plasm refers to the material substance of the nerve — the living medium through which impulses travel and within which normal nerve activity occurs. Its role as the conductor of nerve transmission is positioned precisely in reading 2114-1: "it is through the nerve plasm that the nervous systems carry impulses to the various forces of the system."

The nerve plasm can be depleted, damaged, or revitalized depending on the body's systemic condition. The goal of treatment in terms of nerve plasm restoration is described in reading 2433-1 as the need "to revitalize those sources from which nerve plasm in the body receives its impulse." The clinical consequence of inadequate nerve plasm is identified in reading 1811-1 as insufficient energies to create impulses through the ganglia, impaired energy to the locomotory centers, and reduced capacity for normal organ function. The mechanism of depletion in a specific clinical context — an optic nerve condition — is described in reading 2406-1: "The ability of the nerve to supply that reflex necessary in this nerve plasm is lacking" — the nerve plasm of the optic pathway has lost its capacity to generate the reflex response needed for normal vision.

The readings' preferred therapeutic approach to nerve plasm depletion is the low-voltage electrical appliance — particularly the Wet Cell Battery — through which vibratory forces and dissolved minerals, especially gold, are administered to the nerve system directly. The mechanism of this therapeutic approach is explained in reading 2406-1: "This vibratory activity of the Wet Cell Appliance adds an element for strengthening the nerves of a body, for it — the Gold — is a basic metallic principle of the nerve itself." Gold, as a basic metallic principle of the nerve, has a direct affinity for the nerve plasm and replenishes it through the vibratory activity of the appliance. A broader statement of this therapeutic principle appears in reading 2436-3: "in this body, the lacking element has been gold; such influences that go to make activities in the sensory system as combined in the responses from brain."

The concept of nerve plasm connects to the readings' broader nutritive theory of nerve function: the nerve system, like every other system of the body, requires adequate nourishment — specific minerals, adequate blood supply through the ganglionic circulatory channels, and freedom from toxic accumulation — to maintain its functional capacity. When these nutritive requirements are unmet, the nerve plasm is depleted, and the impulses it carries become weaker, slower, and less coordinated. This nutritive dimension of nerve system function is one of the readings' most consistent and clinically practical contributions to their nerve system framework.

As noted previously, to the extent that nerve plasm encompasses the gray matter dimension of nerve function — the synaptic processing through which nerve centers generate their incentives to the organs — the concept finds a partial resonance with the modern understanding of neurotransmitters as the chemical mediators of synaptic transmission. However, the readings' nerve plasm concept

is considerably broader than this parallel captures, encompassing the structural substance of the nerve fiber, its nutritive replenishment from assimilation and glandular activity, and its role as the medium of impulse conduction along the nerve itself. So "nerve plasm" in the readings may include neurotransmitters, but is not limited in scope to neurotransmission and related chemical messengers.

Spinal Lesions and Subluxations

Pressures on peripheral nerves — particularly those associated with the spinal column — are cited throughout the readings as among the primary sources of underlying systemic problems. The readings use two primary terms for these structural disturbances: lesion (the osteopathic term) and subluxation (the chiropractic term). Both refer to conditions in which spinal mechanics produce functional disturbance of the nerve supply, though they carry slightly different connotations.

A lesion in the readings' usage refers to a functional disturbance in the spinal mechanics — a change in the normal relationship between vertebrae, intervertebral discs, and associated soft tissues that produces pressure or tension on the nerve exiting at that level. Lesions in the readings are not always structural in the sense of being visible on imaging — they are functional, meaning that the normal nerve activity at that level is impaired even when gross structural change is absent. As illustrated in reading 4350-1 in Section 3.2, a lesion in the lumbar region produces a secondary lesion at the 7th dorsal by reflex — demonstrating that lesions propagate through the system rather than remaining isolated.

A subluxation in the readings refers to a partial displacement — a vertebra out of its normal position in relation to adjacent vertebrae, producing pressure on the nerve root exiting at that level. A clinical

illustration of how a subluxation at the 2nd dorsal produces reflex effects through both the sensory and sympathetic systems appears in reading 2913-1, affecting the vocal and auditory forces above and the digestive system below through the hypogastric and pneumogastric plexuses.

The readings' most explicit definition of the lesion-reflex mechanism in terms of systemic consequences appears in reading 4872-1:

Pressure in an area that through the nerve system produces REFLEX action in organs that are involved by pressures in that area, see? As seen here: The temperature that is produced in system (that is, abnormal temperature) by pressure on the sympathetic, in the cerebrospinal and sympathetic coordinating center in the coccyx area, makes for a high hepatic circulation. How? Reflexly! The temperature, then, is a reflex action. The reflex action in the glands of the system, as produced by abnormal conditions in the lacteals, causes the over-excess of activity to those of the thyroids — in CLEANSING the system — REFLEXLY. (4872-1)

This passage defines both the lesion-reflex mechanism and the concept of a reflex in a single statement. A pressure at one location produces reflex effects in distant organs — the coccyx area pressure producing high hepatic circulation, the lacteal abnormality producing thyroid over-activity. Each of these is a reflex, not a direct effect. The word "REFLEXLY" — capitalized and repeated — is the readings' own emphasis on the indirect, propagated nature of the symptom-producing mechanism.

The most important clinical principle that flows from this understanding is stated in reading 109-1: "through those subluxations as have existed, and in part exist in the physical forces or structural portions of body, these have and do produce the

variation in the reflex action of the nerve system, to the extent that many organs function improperly, so that the changes of distresses have been of a variegated or a varied nature... weakness in various functioning organs is a result of same." The organ weaknesses are secondary consequences of the subluxation-reflex mechanism — and addressing the subluxation addresses the cascade. The readings consistently recommend osteopathic correction as the primary therapeutic approach to lesions and subluxations — not because osteopathy is the only therapy but because it addresses the structural-mechanical cause rather than managing symptoms.

Nerve Reflexes

The nerve reflex — the mechanism by which a disturbance at one nerve center produces effects in organs and tissues remote from the site of disturbance — is the primary pathological mechanism through which lesions and subluxations produce their diverse clinical pictures. Understanding reflex patterns is therefore essential for following the readings' clinical logic in any individual case.

The readings' own definition of the reflex mechanism, established in reading 4872-1 and cited in the preceding subsection, is precise: a pressure at one location produces reflex action in organs involved by pressures in that area — not a direct effect but an indirect, propagated consequence mediated through the nerve system's connections between the disturbed center and the organs it governs or shares pathways with.

The reflex propagation between anatomically remote structures is illustrated at the simplest clinical level in reading 1710-10: "Congestions that affect the toe may also affect the nostril, or the head... When pressures are produced, their reflex action is to the passages of the nose and the throat." The toe and the nostril, remote as they appear anatomically, share sympathetic and emunctory

reflex connections through the nerve system — and a congestion in one can produce reflex congestion in the other. This holistic understanding of the body as a reflex network — in which any disturbance can propagate anywhere through the nerve system — is one of the most characteristic features of the readings' clinical approach.

The metabolic basis of the reflex system is grounded in the readings' understanding of eliminative physiology. Each activity of the body, as reading 480-8 establishes, "whether the pulsation of the heart or the movement of the hand, the use of the vision, speech, walking, or WHAT activity, is USING energy in the body, and this energy leaves what may be called ash — or what we have chosen to term the DROSSES." When the eliminative channels fail to clear these drosses through their proper pathways, the nerve system distributes them reflexly to whatever eliminative channel remains available — producing reflex skin eruptions, reflex congestion in the sensory organs, or reflex toxic accumulation in the joints and tendons of the extremities.

The readings' frequent referral to osteopathic physicians was based directly on their understanding of nerve centers and reflexes. As reading 4872-1 confirms, osteopathic drainage — the therapeutic manipulation of nerve centers to regularize blood and lymph flow — works precisely through the reflex mechanism. By modifying the nerve center's activity, the osteopath modifies the reflex patterns through which that center governs distant organs and tissues. The reflex, in the readings' framework, is not merely a pathological inconvenience — it is also the mechanism through which therapeutic intervention propagates from a local spinal correction to systemic organ restoration.

The Imaginative System as a Principle of Nerve Pathology and Therapeutics

The imaginative system — identified in Section 3.3 as the face of the sympathetic system through which unconscious psychological activity governs physical function — requires attention here not as an anatomical or physiological description (which Section 3.3 has provided) but as a conceptual principle of nerve pathology and therapeutics. The principle is this: disturbances in the imaginative dimension of the sympathetic system are always reflexes from mental and emotional conditions operating below the threshold of conscious awareness. Therefore therapeutic restoration of the imaginative system requires addressing those mental and emotional conditions alongside any physical intervention.

The clinical symptoms of imaginative system involvement, described in reading 4393-1, include "heaviness to the body, depressions in the feelings, as of far away feelings, as separations at times between the outer self and the inner self, as if the skin would dry, again as if the heart and lungs were too full for the body, heaviness in the lower portion of the torso, the feet feel as if they would drag, stretchy feelings through the lower portion of the limbs themselves." These are described explicitly as "rather indications than causes. These are reflexes from an overtaxed mental and physical being" — confirming that even the imaginative system's most distinctive symptoms are understood as reflexes rather than primary diseases.

The mechanism through which glandular repression disrupts the imaginative system's coordinating function is described in reading 5683-1: "pressures that prevent their normal impulse of that received from the imaginative or the sensory system, or both, that makes for those conditions that become — in their reaction — as incoordinate,

from impulses of activity to the various portions, to the centers themselves that are to carry out impulse as received." The imaginative system's contribution to normal organ function — the unconscious psychosomatic dimension of organ regulation — is disrupted when the glandular centers through which it operates are under pressure.

The therapeutic principle for imaginative system disturbance is stated directly in reading 4393-1: "were there not the equal balance brought in the mental, the physical, the imaginative body," the conditions would become frank disease. The imaginative body — the unconscious mental-emotional body that expresses itself through the sympathetic system — must be included in any complete therapeutic approach, alongside the physical and mental dimensions. No physical correction of spinal mechanics, no circulatory improvement, no dietary or eliminative measure is complete in the readings' framework if it does not also address the mental-emotional and soul-level conditions that the imaginative sympathetic mediates. This is the clinical application of the coordination principle stated in reading 3049-1 — the body, mind, and soul must be treated as one, because in the nerve system's framework they are one.

Locomotion

The locomotory system — the nerve and muscular apparatus governing body movement — represents the most directly visible expression of the nerve system's coordination in the physical world. Its nerve mechanism is described in reading 480-8 in terms that make explicit the underlying coordination required: the locomotory centers at the brachial area (for arm and hand movement) and at the lumbar area (for lower limb movement) must be coordinated with the 9th, 10th, and 12th dorsal centers that govern pelvic organ

coordination. Locomotion, in the readings, is not simply a muscular function — it is a nerve coordination function, dependent on the proper integration of cerebrospinal impulses through the locomotory centers.

The depletion of locomotory function in terms of the nerve plasm and white-gray impulse mechanism is described in reading 3602-1: "The incoordination between the locomotories of the body — both as to arms and the lower limbs — are slower in their reflexes and impulses. The activities are then being depleted and these prevent the white and gray impulses in nerve plasma from reacting." Slow reflexes and slowed impulses in the nerve plasm — rather than muscular weakness per se — are identified as the primary mechanism of locomotory dysfunction. The muscles are not intrinsically weakened; the nerve plasm through which their governing impulses travel has been depleted.

The therapeutic approach follows directly from this principle. Restoring nerve plasm energy is the prerequisite for restoring locomotory function. As reading 1811-1 confirms, treatment must "add to the nerve plasm sufficient energies to create impulses through the ganglia along the cerebrospinal system and build up nerve energies for the locomotories." Before the muscles can respond normally, the nerve plasm through which their governing impulses travel must be adequately supplied — which in turn requires adequate blood supply to the ganglionic centers, freedom from toxic accumulation, and correction of any spinal mechanics that are impeding normal impulse transmission.

The locomotory system also serves as a clinical indicator of broader nerve system coordination. When the readings note that locomotory centers are not coordinating normally — that the brachial plexus and the lumbar plexus are not in proper relationship to one another and

to the dorsal centers between them — they are describing a systemic nerve coordination failure that typically has organ and eliminative consequences alongside the more obvious movement limitations. Locomotory dysfunction, in the readings' framework, is rarely an isolated finding — it is most often a visible indicator of the deeper incoordination that pervades the entire nerve system.

Coordination as the Goal of Treatment

The conceptual principles described in this section — coordination, voluntary-involuntary distinction, impulse-activity, nerve plasm, lesions and subluxations, reflexes, the imaginative system, and locomotion — are not independent clinical topics but aspects of a single integrated framework. They all describe different dimensions of the same underlying clinical principle: that health in the nerve system means the continuous, dynamic coordination of its multiple components, and that disease arises when that coordination fails at any level.

The therapeutic goal in terms that encompass all dimensions simultaneously is stated in reading 2675-8: "Coordinate that of the mental with that of the physical... The mental being related to the spiritual, needs that full cooperation that is necessary for a well-rounded life." Treatment directed only at the physical dimension — only at the spinal mechanics, only at the blood supply, only at the organ function — is incomplete in the readings' framework unless it simultaneously supports the mental and spiritual coordination that the nerve system also mediates.

This holistic coordination principle — physical, mental, and spiritual coordination working together through the nerve system — is the conceptual foundation on which the entire nerve system chapter rests. It is also the bridge to the organ system chapter that follows. The organs, whose function depends on adequate nerve

supply through the cerebrospinal and sympathetic systems and whose pathology is so often traced in the readings to nerve system incoordination at specific spinal levels, will be understood in Chapter 4 as the third dimension of a physiological whole whose circulatory and nervous dimensions have been established in Chapters 2 and 3. The readings' approach to organ health is inseparable from their approach to nerve system health — and the conceptual principles of this section are the explanatory framework within which the organ chapters can be fully understood.

Modern Context

Modern neuroscience addresses each of the principles discussed in this section, though rarely within the integrative framework the readings provide. The voluntary-involuntary distinction corresponds to the modern distinction between somatic and autonomic nervous system function — the somatic system governing voluntary muscular activity under conscious direction, the autonomic system governing the involuntary processes of organ function, circulation, and elimination. The clinical phenomenon of voluntary-involuntary confusion that the readings describe — the "running together" of impulses at specific nerve centers — finds partial modern parallels in conditions such as dysautonomia, movement disorders, and certain functional neurological syndromes in which the boundary between voluntary and involuntary activity is pathologically disrupted (Hallett et al., 2022).

Spinal lesions and subluxations are addressed by modern osteopathic and chiropractic medicine, and the concept of somatic dysfunction — the osteopathic term for the functional spinal disturbance that impairs nerve activity — is recognized in the medical literature as a clinically significant entity. The concept of reflex viscerosomatic and somatovisceral connections — through

which spinal disturbances produce organ consequences and vice versa — is an established area of osteopathic research that corresponds closely to the readings' reflex mechanism. Nerve reflexes are a foundational concept in neurophysiology and clinical medicine, and the readings' understanding of reflex propagation through the nerve system's plexus network finds consistent resonance with modern understanding of autonomic reflex arcs.

The readings' concept of nerve plasm does not correspond precisely to any single modern neurological term, but it finds functional resonance with the modern understanding of axonal cytoplasm, myelin integrity, and the role of neurotrophic factors in sustaining normal nerve function. The concept of nerve plasm depletion as a cause of functional nerve impairment — without structural damage to the nerve itself — corresponds in a general sense to modern understanding of functional neurological conditions in which nerve conduction is impaired by metabolic, nutritional, or toxic factors rather than by structural nerve lesions. Nerve plasm in the readings may overlap with the modern concept of the neurotransmitter, but probably is more extensive in its nutritive and metabolic aspects.

The readings' concept of coordination as the expression of body-mind-soul unity is perhaps their most philosophically distinctive contribution to the nerve system framework — one for which modern neuroscience has no direct equivalent, though systems neuroscience, psychoneuroimmunology, and the emerging science of interoception all represent partial modern approaches to the integrative coordination the readings describe. The growing recognition in modern medicine that physical, psychological, and — increasingly — spiritual dimensions of human experience are physiologically interconnected represents the closest modern parallel to the readings' coordination principle. The readings'

framework, however, goes beyond modern integrative medicine in one fundamental respect: it understands coordination not merely as a therapeutic goal but as the ontological condition of the human being — the state in which body, mind, and soul are experienced as the unified whole they actually are.

Chapter 4: The Organs

4.1 Overview

The Organ Section in the Physical Reading

The organ section is the third and final of the three primary clinical sections of a typical physical reading, following the blood supply and the nerve system. Its position in the reading reflects the readings' causal logic. The blood supply reveals the body's circulatory and chemical state; the nerve system reveals the incentive and coordination mechanisms governing organ function; and the organ section then describes what the organs are actually doing — how they are performing their individual and collective functions given the blood and nerve conditions that precede them.

The readings use two variant phrasings to introduce this section — "IN THE ORGANS OF THE BODY" and "IN THE FUNCTIONING OF THE ORGANS THEMSELVES" — and the variant "functioning of the organs" is itself significant. The readings are often more concerned with how the organs are performing their functions than with their structural condition. Reading 4176-1 illustrates this from the opening sentence of the organ section: "Now, there are some few abnormal conditions that exist in this body. These have to do with that which is carried into the circulation, rather than the functioning of the organs or organic conditions." The contrast drawn here — between something carried in the circulation and something arising from the organs themselves — reflects the fundamental analytical framework the readings apply throughout this section.

The Head-to-Toe Sequence

In reviewing the functioning of the organs, the readings typically begin at the head and proceed down the body as if conducting a

systematic scan. The brain is usually the first organ mentioned when organ pathology at the head is relevant; the sensory organs follow; then the respiratory system; then the heart; then the digestive organs in sequence from stomach through intestines and the hepatic system; then the kidneys and pelvic organs; and finally the endocrine glands when their function is at issue. Most often, however, only the organs most directly involved in the individual's pathology are discussed in detail. Thus the organ section is selective rather than comprehensive, focused on the organs through which the pathological cascade described in the blood and nerve sections most directly expresses itself.

Organs addressed in a typical reading may include any or all of the following, in approximate anatomical sequence: brain and sensory organs; respiratory system (throat, bronchials, lungs, larynx); heart; digestive organs (stomach, intestines, lacteal ducts, gallbladder, pancreas, spleen, liver); kidneys and urinary organs; pelvic and reproductive organs; and endocrine glands. Chapter 4 follows this sequence, with each organ or organ system addressed in a dedicated subsection.

The Organs as Third in a Causal Chain

Understanding the organ section correctly requires recognizing its position as the third element in a causal sequence that begins with the blood supply, passes through the nerve system, and arrives at the organs as their joint downstream expression. The organs, in the readings' framework, are not the primary causes of illness — they are more often its downstream expressions. Reading 4708-1 states this directly: "THE NERVE SYSTEM is the greater trouble, or the cause of the distresses and abnormalities in the functioning of the organs." Reading 953-1 traces a representative cascade: low hepatic circulation leading to over-stimulation of the kidneys, disruption of

lacteal forces, and impaired new blood supply — all originating in nerve and circulatory conditions, with each organ responding to what has been created upstream.

This downstream character of organ pathology does not mean that organ disturbance is clinically unimportant. It means that addressing organ disturbance at the organ level alone, without tracing the condition back through the nerve system and blood supply to its actual origin, is likely to produce only temporary relief. Reading 4330-1 illustrates the consequence of incomplete treatment: "each portion of the body must be kept in proper coordinating form that the eliminations as are set about in the system may not become overbalanced and simply transfer the condition to various portions of the organism that would produce a disturbance in an organic manner as to be the latter condition worse than the first, physically." Organ treatment without systemic coordination can shift the condition rather than resolve it.

Each Organ Reproduces Itself from What It Receives

One of the most fundamental principles governing organ function in the readings is that each organ is understood as a self-renewing entity — capable of continuously reproducing and maintaining itself by extracting from the blood supply and nerve incentive the specific forces it needs. Reading 4176-1 states this clearly: "each organ is supposed to function within itself, or to take through the circulation those units or forces or cellular building forces to build and supply the body as is shown in a growing body, or a body developing."

This self-reproductive understanding of organ function is also the readings' definition of glandular activity. The readings place great importance and significance on glandular functioning, and assert that the role of a gland is to assist the body in replacing itself through cellular reproduction. From this perspective, almost any organ can

be considered a gland. Every organ draws from the blood supply and glandular system those specific elements needed to continuously renew itself. The endocrine glands are the most concentrated expression of this principle, but the secretory-reproductive capacity the readings describe in glandular terms applies throughout the organ system.

The self-reproductive capacity of each organ depends on two conditions: adequate blood supply carrying the appropriate nutritive elements, and adequate nerve incentive directing the organ's activity at the appropriate level. When either is compromised — when the blood supply is deficient in quality or quantity, or when the nerve incentive through the cerebrospinal or sympathetic system is impaired by spinal lesions or systemic disturbance — the organ's capacity for self-renewal is reduced, and it begins to operate below normal capacity.

Secretion and Excretion: The Two Primary Organ Functions

The readings consistently describe the organs in terms of two primary functions: secretion and excretion. Secretive function produces substances the body needs and distributes them through the system. Excretory function removes waste products and used forces from the system. The liver is described as unique in performing both simultaneously — a point the readings return to repeatedly — but the secretion-excretion distinction applies throughout the organ system. The kidneys both secrete hormones and excrete waste products. The stomach secretes gastric juices and excretes cellular material. The lungs excrete carbon dioxide through the respiratory channel. The skin secretes oils and excretes toxins through the perspiratory channel.

In each case, normal organ function means maintaining the proper balance between secretory and excretory activity. Reading 953-1

illustrates what happens when this balance is disrupted: "The liver becomes rather the excretory rather than secretive in its functioning. .. A sympathetic condition rather than an organic." The liver, under the strain of cold hepatic circulation and systemic toxic accumulation, has shifted toward excretory activity at the expense of its secretory functions — and the reading explicitly notes that this is a functional rather than organic condition, one that "might become so without the proper adjustments."

Functional vs. Organic Pathology

The distinction between functional and organic conditions is the most important clinical framework in the readings' treatment of organ pathology, and it applies throughout Chapter 4.

A functional condition describes a disturbance in how an organ performs its activity without implying structural damage to the organ itself. The organ's tissue is intact; its nerve supply is impaired, its blood supply is altered, or its secretory-excretory balance is disturbed — but these are in principle reversible. Reading 4176-1 illustrates: "This is a reflex condition, not organic. Not a condition existing or produced by the organs themselves, but reflexly to these organs." The conditions affecting the vocal cords, glands, and sensory organs in that reading are all functional consequences of upstream circulatory and nerve disturbances, and will resolve when those upstream conditions are corrected.

An organic condition implies structural change in the organ itself — degeneration, fibrosis, calcification, or actual tissue damage representing a more fixed and potentially less reversible state. The readings consistently warn that functional conditions, if uncorrected, become organic. Reading 953-1's qualifier — "A sympathetic condition rather than an organic, though it might become so without the proper adjustments" — is characteristic.

Reading 331-1 follows this progression explicitly for the liver: "with the continuation of torpidity in liver, it must also bring something of a hardening [cirrhosis] of the liver — unless conditions are corrected." The functional moves toward the organic when the causes are not addressed.

The Organs as an Interdependent System

A central principle of the readings' organ framework is that the organs function not as isolated entities but as an interdependent system in which each organ's performance affects the others. The liver's condition affects the kidneys; the kidneys affect the blood supply the heart must manage; the heart's circulation affects the lungs' oxygenation; and the lungs' respiratory function affects the eliminative capacity of the whole system. Reading 359-2 captures this interdependence through a mechanical analogy: the heart "is purely a reflex condition, produced by the inefficient quantity of the circulation and the organ attempting to use ALL that is in the system for the sustenance of same, see? Just as might be an illustration of an engine attempting to pull a heavy load with too little steam!" The heart cannot be treated in isolation from the circulatory and organ conditions that have created its burden.

The multi-organ interdependence described in reading 953-1 illustrates this principle in a single clinical narrative: cold hepatic circulation over-stimulates the kidneys; the kidneys' over-stimulation strains the lacteal forces; the lacteal disturbance impairs new blood supply; the impaired blood supply further compromises the liver's secretory function — a self-reinforcing cycle in which each organ's disturbance compounds the others'. It is for this reason that the readings' therapeutic recommendations so often address multiple organs simultaneously rather than focusing on one in isolation.

The Organs and the Nerve System: Incentive as the Key Link

The connection between the nerve system and the organs is mediated through the concept of incentive — the nerve-derived directive that governs how actively and in what pattern each organ performs its functions. Reading 4708-1 traces how nerve lesions at the 7th, 8th, and 9th dorsal produce their effects "through the solar plexus center, from the brachial plexus centers, and from the lower coordinating or locomotory centers" — manifesting as disturbed organ function in the eliminating organs of the pelvis, the bladder, and the kidneys, all governed through those ganglionic centers. Reading 4237-1 describes the consequence of inadequate incentive most directly: "the nerve forces course through the system, and are given the incentives for the development of the body. This has been the hindrance that has presented itself." Without adequate nerve incentive, the organs cannot fulfill their self-reproductive capacity.

The term "incentive" is itself significant. The readings do not describe the nerve system as simply commanding the organs — they describe it as providing the motivating impulse that allows the organs to fulfill their self-reproductive potential. This implies organ autonomy: the organ is capable of self-renewal and proper function, but requires the nerve incentive to activate that capacity. When the incentive is impaired, the organ's latent functional capacity is suppressed rather than destroyed — which is why restoring proper nerve incentive through manual therapy, electrical therapy, or other means can produce functional recovery even in organs that have been performing below capacity for extended periods.

The Endocrine Glands as Spiritual Centers

The endocrine glands occupy a position of special philosophical and physiological significance in the readings' organ framework. Beyond their recognized chemical secretory functions, the readings describe

the endocrine glands as spiritual centers — structures that regulate the life-force energy of the body in addition to producing the hormones for which they are conventionally known. The adrenal glands and thyroid are among the most frequently mentioned endocrine glands across a wide variety of pathological conditions, reflecting their broad systemic influence. The pineal and Leydig (lyden) glands are especially prominent in certain conditions — particularly those involving psychopathic or neurological dimensions such as epilepsy and schizophrenia — where the soul-body interface mediated through these glands is directly implicated in the clinical picture.

This spiritual dimension of glandular function is not incidental to the readings' organ framework — it is an expression of the same holistic principle that runs through the entire physiological system. Just as the sympathetic nerve system is described in Chapter 3 as the "brain manifestation of soul forces in the body," the endocrine glands are the physical organs through which the soul's activity is most directly expressed in chemical and biological terms. In particular, the pineal-Leydig axis, the pituitary, the adrenals, and the gonads together form what the readings describe as the physiological pathway through which spiritual forces become material reality in the body.

The Liver and Kidneys as the Hepatic Axis

The liver and kidneys occupy a position of special clinical prominence in the readings' organ framework — constituting the positive and negative poles of the hepatic circulatory system as described in Chapter 2. Reading 4007-1 identifies the liver, kidneys, heart, and lungs as the "batteries of the nervous system" — the primary organs through which the body's vital forces are stored, distributed, and renewed. The liver governs the upper hepatic

circulation and serves simultaneously as the body's primary blood-cleansing and secretory organ; the kidneys govern the lower hepatic circulation and serve as the primary excretory pole of the hepatic axis. Their coordinated functioning is the foundation of the body's overall eliminative and blood-quality health. This relationship is developed in the dedicated subsections for each organ below.

Organization of Chapter 4

Chapter 4 follows the head-to-toe sequence characteristic of the physical readings' organ section:

- Section 4.2 — The Brain and brain forces
- Section 4.3 — The Sensory Organs
- Section 4.4 — The Respiratory System
- Section 4.5 — The Heart
- Section 4.6 — The Digestive Organs (stomach, intestines, lacteal ducts, gallbladder, pancreas, spleen, and liver)
- Section 4.7 — The Kidneys and Urinary Organs
- Section 4.8 — The Pelvic and Reproductive Organs
- Section 4.9 — The Endocrine Glands

Each subsection addresses the readings' own description of the organ's anatomy, physiology, and pathology, with modern anatomical and physiological context offered as interpretive aid. The secretion-excretion and functional-organic distinctions are applied consistently throughout, and dedicated database searches provide the primary reading evidence for each organ.

4.2 The Brain

Overview

It is notable that the readings typically address the brain in the organ section of a physical reading rather than in the nerve system section — even though the brain is, anatomically, the primary organ of the

cerebrospinal nerve system. This placement reflects a distinction the readings maintain between the brain as a governing nerve center (its role in Chapter 3) and the brain as a functioning organ with its own nutritional requirements, circulatory supply, and capacity for pathological disturbance (its role here). In the nerve system section, the brain functions as the apex of the cerebrospinal system — generating and distributing impulses through the spinal cord is the primary concern. In the organ section, the brain's functional quality as an organ is assessed. How well are its perceptive, discriminative, and coordinative capacities working, and what systemic or structural conditions may be impairing them?

The readings' characteristic term for the brain in the organ section is "brain forces" — a phrase that recurs consistently throughout the readings addressing this organ. This language of "forces" rather than structure is consistent with the readings' broader functional orientation. The brain is assessed not by its anatomy but by the quality and coordination of its activity. Brain forces can be "very good," "good," "not as keen as they should be," "disturbed," or "benumbed" — a vocabulary that describes functional states rather than structural lesions.

Anatomy

The foundational anatomical description of the brain as an organ appears in reading 4841-1, in a passage that situates the brain at the apex of the sensory and nervous hierarchy:

First, we have the brain here in the head. Its impressions to the brain force are to those of the sensory system of the man. Those organs being known to the outside as the five senses. The impressions of all matter, to a living human being, are received through one of these senses, and impressed on the brain by the force, or the matter,

which is digested and carried into the nerve force, and thereby properly digested and thrown on, or impressed to, the brain, to be used at times that this body has need for it. Hence, any expression or any impression or any thought or any expression to a body, at any time received, when we have use for preservation of the body, we act on it, whether we stop to think or know it or not; because the abnormal self [the subconscious or soul?], whether you know it or not, never forgets any impression ever made upon it. (4841-1)

Several important anatomical points emerge from this passage. The brain is positioned as the terminal organ of sensory impression — the point at which sensory data, "digested and carried into the nerve force," is processed and stored. The five senses are understood as the brain's peripheral organs of reception, and the brain's anatomical location "in the head" is described in relation to this sensory hierarchy rather than in terms of gross structural anatomy.

A second anatomical distinction of foundational importance follows from reading 2114-1, which draws an explicit line between the physical structures of the brain and the mental consciousness they serve: "while the brain and the cords through which the nerves function are the channels, these are not the mental consciousness; though it is through the nerve plasm that the nervous systems carry impulses to the various forces of the system." The brain and spinal cords are the anatomical channels of the nerve system — necessary structures for the conduction of impulses — but they are not, in the readings' framework, the seat of mental consciousness itself. The brain is the physical instrument through which consciousness operates; it is not consciousness itself. More directly: "Thy BRAIN is not thy mind, it is that which is used by thy mind!" (826-11).

Reading 5675-1 captures the brain's unique dual anatomical status — as both a functioning organ and the governing center of the nerve system — in a single clinical assessment: "the action of the brain center over the system to control within the system is very good. The cerebro-spinal nervous system over the whole body... The sympathetic nervous system, we find, is very good." The brain here is evaluated first as a center of governance — the control organ through which the cerebrospinal and sympathetic systems are directed — and then the reading proceeds to assess the downstream organs in the head-to-toe sequence. Both dimensions of the brain's anatomical identity are present: its status as governing center and its status as a functioning organ subject to the same nutritional and circulatory requirements that apply to every other organ in the body.

Physiology

The readings evaluate brain function through a consistent cluster of functional qualities that together constitute what they call "brain forces." The most frequently assessed are discrimination and discernment, keenness of perception, will force, and the coordination between mental and physical activity.

The most precise expression of the discriminative function appears in reading 4758-1: "in the brain forces we find these, as suggested, active, in that the discriminations, the discernments, the activities of the mental forces are good; not always are they coordinative with the abilities to carry out in the cerebro-spinal's reactions those mental forces of the body, and it makes for a combativeness in the activities." This passage draws a physiologically important distinction: the brain's discriminative and discernment capacities — the ability to perceive differences, make judgments, and process complex information — are assessed as functions independent of the body's capacity to carry those mental forces into action through the

cerebrospinal system. A brain may discriminate clearly while the cerebrospinal system fails to translate those discriminations into coordinated physical action — producing the "combativeness" of a person whose mind works well but whose body does not consistently carry out what the mind intends.

A subtler form of brain force assessment appears in reading 4345-1, which describes not gross dysfunction but a reduction in perceptual acuity: "The brain forces at times are not as keen in their perception, and the body at times feels there is not as keen a response to the manner the body would think things out in its way of discernment." This reduced keenness — the feeling that thinking is slightly slower, perceptions slightly less sharp, mental responsiveness slightly diminished — is described as "rather of a subtle nature" and referable to systemic conditions rather than any organic brain pathology. The brain itself is structurally intact; the quality of its forces is reduced by upstream circulatory and nerve conditions.

The readings also assess what they call "will force" as a distinct brain-related functional capacity. Reading 4456-1 observes: "The brain forces very good — development of will force has been a great factor for the body." Reading 2243-1 similarly notes: "Brain forces proper very good. Mentally strong, yet strength of mental and physical overtaxed at times through mental action, yet sheer will force often carries the body on in its physical action." In this context will force in the readings appears to be understood as the brain's capacity to direct and sustain physical and mental activity even under stress — a functional reserve that can compensate for physical depletion but that has its own limits.

The most clinically important dimension of brain physiology in the readings is the coordination between the brain's mental forces and the cerebrospinal system's capacity to carry those forces through to

physical expression. Reading 4486-1 illustrates this: the nervous system "presents one well balanced through all the mental forces and faculties of the brain force, itself, yet does not give full expression of its full mentality as it should, especially, in its control over self." The brain forces are adequate; the failure of full expression lies in the coordination between the brain's mental forces and the cerebrospinal system's capacity to carry those forces through to physical activity and self-governance.

Brain force quality is consistently linked throughout the readings to systemic conditions — particularly circulatory adequacy and toxicity — rather than to any intrinsic pathology of the brain itself. When the blood supply is insufficient to replenish used nerve energy throughout the system, brain force is among the first capacities to be compromised. Reading 3768-1 traces this mechanism directly: the blood forces are "deficient in their real or in their intense force of their replenishing the used nerve energy of the whole body, hence the condition we have over the system of the inability of the body to make the necessary replenishing forces in the system to supply the needs of the body when it rebuilds itself, whether it be a mental action or a physical." The brain, with its particularly high demand for continuous nutritive renewal, is acutely sensitive to any reduction in circulatory supply.

The mechanism of vasomotor compromise is described in reading 5675-1: "the brain has been benumbed — a deadening of the vasomotory nerve force and its effect on the brain." When the vasomotor nerve force governing cerebral circulation is reduced — through sympathetic system disturbance, toxic accumulation, or structural impediments along the vasomotor pathways — the brain's blood supply is impaired and its forces are correspondingly "benumbed." Reading 5506-1 describes a more complex pattern in

which lower dorsal and lumbar nerve pressures produce lapses in sympathetic coordination that affect brain force indirectly: "the brain force in itself is NOT even SENSITIVE of that taking place" — the brain's own awareness is compromised by the systemic sympathetic disturbance, even as the organs of the torso continue to function automatically below the threshold of conscious perception.

Reading 4841-1 describes this dependency on adequate blood-borne nourishment from the sensory angle: "The condition we have in this system of a sensory organ or one of the senses becoming affected is through the lack of nourishment from the same condition as we have through the muscular force, nerve force, or any organ in the system, when we have a lack of blood supply or proper condition to rebuild these as they are used." The brain, as an organ, requires continuous blood-borne nourishment to rebuild its cellular forces as they are consumed — and when that supply is inadequate, the brain's functional capacity declines in exactly the same way that any other organ's secretory or excretory capacity declines when its nutritional supply is compromised.

The overcharge pattern represents the opposite physiological failure. Reading 4828-1 describes what happens when the brain's governance function is overwhelmed by excess stimulation: "the impressions as carried to the brain forces have been that of an overcharged condition or that which would give the imperfect coordination through the actions of the brain and the muscular forces or to the system itself in its physical force. Through the various plexuses we find the reflex of this condition as has been produced between the junction." The brain, receiving an excess of circulating impressions through overcharged nerve forces, loses its capacity to coordinate the muscular and physical forces effectively. This overcharge — not structural damage, not deficiency, but excess

stimulation through the nerve plexuses — is itself a form of brain force disturbance producing incoordination in the physical forces.

Underlying all of these functional assessments is the foundational physiological principle stated in reading 2114-1: "the brain and the cords through which the nerves function are the channels, these are not the mental consciousness." The brain is the physical instrument of consciousness — necessary for its expression in the material world, but not its source and not its substance. Mental consciousness in the readings is associated with the mental body — a dimension of the human being that operates through the brain and nerve plasm but is not reducible to them. When the readings describe brain force impairment, they are describing a compromise of the physical instrument through which mental consciousness expresses itself — not a pathology of consciousness itself. The mental body may remain intact while the brain forces are compromised by circulatory deficiency, toxic accumulation, or nerve pressure. Conversely, when brain forces are restored through improved circulation, cleared toxicity, and osteopathic correction of nerve pressures, the mental consciousness that was always present but imperfectly expressed can once again find full expression through its now-adequate physical instrument.

Pathology

The large majority of brain force disturbances described in the readings are functional in character — reduced keenness, impaired coordination, vasomotor sluggishness — arising from upstream circulatory and nerve conditions rather than from structural pathology in the brain itself. The readings also address, however, a range of more severe conditions that illuminate how the framework applies to major neurological and psychiatric pathology.

The readings' approach to stroke is illustrated by reading 358-4, addressing a patient who had suffered a paralytic stroke: "This did not occur in the brain proper but rather in the circulation — and found lesion in the brain through the circulation." The stroke, in this reading's analysis, originated in the circulatory system — toxic accumulations producing hemorrhage in the blood vessels — and the brain lesion that resulted was a secondary consequence of the circulatory event rather than its origin. The causal analysis traces the hemorrhage to toxic accumulation and poor elimination as upstream vascular causes, consistent with the readings' characteristic emphasis throughout on the blood supply as the primary determinant of organ health.

Dementia is addressed in reading 3997-1 through a specific nerve pressure mechanism: cervical nerve pressures impaired the normal development of the pineal gland and its connection to the Leydig center, "producing such depression and activity to the action of the imagination, or the activity of the gray matter in nerve reaction, until dementia is the result." The dementia here is described not as a primary brain disease but as the downstream consequence of a specific nerve pressure pattern affecting the pineal-Leydig axis. Notably, the prognosis offered is conditional rather than hopeless: "were corrections made of those conditions existent in the cervicals, and that added to system that would first subjugate or prevent those reactions through the glands' forces, then builded properly through normal suggestion — and the proper accentuations given to the development of glands in the digestion... we would bring — in the third cycle — a near normal reaction for this body."

The most philosophically comprehensive account of severe brain pathology appears in reading 281-24, which addresses insanity through three distinct mechanisms. The first is structural disruption

— "through pressure upon some portion of the anatomical structure that would make for the disengaging of the natural flow of the mental body through the physical." The second is nutritive failure — "the lack of the necessary 'vitale' for the resuscitating of the energies that carry on through brain structural forces of a given body," producing disintegration and dementia praecox [now called schizophrenia]. The third is supersensitivity — those who "may have more of a closeness to the universal than one who may be standing nearby," able to perceive at the border of normal and exceptional consciousness, but "awry when it comes to being normally balanced or healthy for their activity in a material world."

This three-mechanism framework — structural, nutritive, and supersensitive — positions severe mental illness as arising from disturbances in the relationship between the physical brain, the mental body, and the soul body. It is one of the most philosophically sophisticated clinical frameworks in the readings, and it is consistent with the broader tripartite ontology — physical, mental, and soul dimensions of the human being as genuinely distinct yet functionally interdependent — that the readings apply throughout the physiological system.

Modern Context

Modern neuroscience understands the brain as the primary organ of the central nervous system, composed of approximately 86 billion neurons supported by an equal number of glial cells. It is the most metabolically active organ in the body, consuming approximately 20% of the body's oxygen and glucose despite representing only about 2% of total body weight — a finding consistent in a general sense with the readings' consistent emphasis on the brain's particular sensitivity to any reduction in blood supply and nutritional support.

The readings' characterization of brain force quality as dependent on circulatory adequacy finds resonance with modern understanding of cerebral autoregulation — the brain's mechanisms for maintaining constant blood flow despite fluctuations in systemic blood pressure — and with the clinical recognition that even mild circulatory compromise, as in hypotension, anemia, or reduced cardiac output, produces measurable cognitive impairment. The readings' description of vasomotor nerve force impairment producing "benumbing" of brain force corresponds in a general sense to modern understanding of how autonomic dysregulation affects cerebral circulation and cognitive performance.

The readings' account of stroke as a circulatory event producing a secondary brain lesion — rather than a primary brain pathology — is consistent with modern classification of both hemorrhagic and ischemic stroke as vascular events. The specific causal mechanism the readings emphasize — toxic accumulation and poor elimination as upstream causes of vascular rupture — does not have a direct modern equivalent, though the general relationship between systemic metabolic disturbance and cerebrovascular risk is well recognized in contemporary medicine.

The readings' distinction between the brain as a physical channel and mental consciousness as something that operates through but is not reducible to the brain represents the most fundamental philosophical divergence from modern neuroscience, which generally treats consciousness as an emergent property of brain function. The readings' framework reflects a consistently tripartite ontology — physical, mental, and soul dimensions of the human being as genuinely distinct — for which modern neuroscience has no direct equivalent. How these dimensions relate is a question that neuroscience and the philosophy of mind continue to explore, and

the readings' perspective represents a distinctive contribution to that ongoing inquiry that cannot be evaluated simply by the standards of contemporary brain science.

4.3 The Sensory Organs

Overview

The sensory organs are addressed in the organ section of the physical readings immediately after the brain — consistent with the head-to-toe sequencing that characterizes the readings' organ assessment. As noted in Section 3.4, the readings treat the sensory system from two perspectives: as a nerve system component (its sympathetic and cerebrospinal associations, its vibratory attunement, its relationship to the imaginative forces) and as a collection of individual organs with specific anatomical supply requirements and specific pathological vulnerabilities. Section 3.4 developed the nerve system perspective. The present section addresses the sensory organs as physical structures — how the readings describe their nourishment, what causes them to fail, and how systemic conditions express themselves through sensory organ dysfunction.

The governing principle for sensory organ pathology in the readings is stated directly in reading 4841-1: "The condition we have in this system of a sensory organ or one of the senses becoming affected is through the lack of nourishment from the same condition as we have through the muscular force, nerve force, or any organ in the system, when we have a lack of blood supply or proper condition to rebuild these as they are used." The sensory organs usually fail not because they are intrinsically diseased but because they are inadequately nourished through the blood and nerve supply that sustains their

continuous self-renewal. Systemic causes, local expression — this is the readings' foundational framework for sensory organ pathology.

Anatomy

The Sensory Organism as a Clinical Unit

Before addressing the individual sensory organs, it is important to understand how the readings treat the sensory system as a whole. The term "sensory organism" appears consistently throughout the readings addressing this system. It refers to the integrated perceptual apparatus of the body: eyes, ears, nose, taste, throat, speech, and the sense of touch, together with their coordinating nerve centers. The readings regularly assess the sensory organism as a unit rather than organ by organ, recognizing that systemic disturbance typically affects all the senses simultaneously rather than producing isolated dysfunction in one.

Reading 5499-1 establishes the nerve pathway anatomy common to all the sensory organs: "the eye, the ear, the nose, and the throat — ALL have their ganglia base in either the cervical or upper dorsal region, that communicate, as it were, directly to the sympathetic and cerebro-spinal ganglia." The critical spinal levels for the sensory organs — cervical and upper dorsal — make this region the primary site where spinal mechanics affect sensory function. When lesions or subluxations develop in the cervicals or upper dorsal, the ganglionic bases of the sensory organs are disrupted and the reflex consequences manifest throughout the sensory system.

Reading 132-1 provides the most anatomically specific description of an individual sensory organ's supply pathways in the readings. The blood supply to the eyes is described as coming "from its forces, or exterior forces, along the spine from the first and second cervical, the second lumbar and second dorsal" — four specific vertebral levels

identified as the primary spinal origins of the eye's circulatory supply. The Eustachian tube is identified in reading 5499-1 as the anatomical link through which upper respiratory and sinus conditions communicate their disturbance to the auditory apparatus — connecting the nasal and sinus region to the middle ear through a shared mucosal pathway. The larynx and vocal apparatus receive their governing supply from both above and below: from the cervical region through the laryngeal nerve supply, and from the secondary cardiac plexus at the 5th and 6th dorsal, as reading 4975-1 describes.

Speech occupies a distinctive anatomical position in the readings' sensory framework. Reading 16-1 describes speech as "the highest developed vibration in an organism, for it partakes of the vision, the hearing, the feeling, and ALL to combine same." This characterization positions speech not merely as a motor act — the production of vocal sound — but as the most complex and integrated sensory-motor activity of the organism, drawing on every other sensory modality in its expression. Anatomically, this means that the laryngeal apparatus requires coordination across the full range of cervical and upper dorsal nerve centers that govern all the other sensory organs — making it uniquely vulnerable to any disturbance in that region.

Physiology

The Sensory Organism in Normal Function

Reading 681-2 expresses the unity of the sensory organism as a physiological principle: "the body must see, to be rejuvenated, the body must be kept in a condition of construction; to ever find that the heart, the digestive organs' combination, the elimination and assimilation, the hair, the scalp, the nasal, the eye, the ear, the throat, the bronchi, the lungs, the structural forces of the body work as a

UNIT — or as ONE! And then we may find, and do find, the body BUILDING, ever." The sensory organs do not function in isolation from the rest of the body — they are sustained by the same systemic processes that sustain every other organ, and their health both reflects and depends upon the health of the whole.

Each sensory organ, like every other organ in the readings' framework, continuously consumes cellular energy in the performance of its function and produces used forces that must be cleared through the blood and lymphatic supply. Reading 4841-1 establishes this mechanism: every sensory function continuously consumes cellular energy and produces used forces that must be cleared. When the systemic blood and nerve supply is adequate, these used forces are continuously cleared and the sensory organs maintain their full functional capacity. When the systemic supply is compromised, the used forces accumulate and sensory function declines in proportion to the degree of compromise.

The physiological assessment of individual sensory capacities follows this same framework for each modality. Vision is assessed in terms of the quality of the nerve forces governing sight and the adequacy of the blood and lymphatic circulation supporting the optic apparatus. Reading 3931-1 states the principle directly: "The trouble is not so much in the eye but in the forces — in the eyesight, seeing in the body or impression carried." The visual difficulty is in the nerve forces governing sight rather than in the optical structure of the eye. Hearing is assessed through the adequacy of circulatory impulse through the auditory nerve centers. Reading 681-2 specifies that "there must be in each center the proper impulses for the circulation that is revived to pass through all of those centers that make for the relief or the building to the auditory forces." Taste is physiologically linked to the condition of the gastric juices, the

saliva, and the mucous secretions of the upper digestive tract. Its sensitivity reflects the acid/alkaline balance of the saliva, the quality of gastric secretions, and the state of the pneumogastric nerve, which governs both gastric secretion and the sensory impressions of the upper digestive tract.

The sensory organs serve not only their primary perceptual functions but function in the readings as systemic indicators — among the most sensitive available. A reduction in visual acuity, a change in hearing quality, an alteration in taste, or the onset of tinnitus may reflect not a local sensory organ disease but a systemic circulatory or eliminative condition not yet producing symptoms in the primary organs. The readings use these sensory signs precisely in this diagnostic way — as early warnings of systemic imbalance that, if corrected at their source, will resolve the sensory symptoms without any direct treatment of the sensory organs themselves.

Reading 4841-1 addresses tinnitus — "roaring in the head" — through this same physiological logic. The entire body with its nervous, vascular, and alimentary tubing produces a kind of vibratory resonance. In a well-balanced body this resonance is harmonious; when the system is disturbed, the resonance becomes discordant and audible as roaring, buzzing, or ringing. The spinal treatment recommended in that reading — along the entire spine to restore unified action of the sympathetic and cerebrospinal systems — addresses the systemic vibratory imbalance rather than any local ear condition.

Pathology

Systemic Causes of Sensory Organ Dysfunction

The most characteristic finding about the sensory organ in the readings is that dysfunction in individual organs is most often a

local expression of systemic disturbance rather than a primary disease of the organ itself. Reading 4555-1 provides the clearest illustration of how systemic strain manifests across the sensory organism:

Sensory organism all under strain. All more or less in that condition of being either over supplied or under nourished, and one showing one way, one another — that is, in the auditory and in the sight, in the effect as is produced in the taste, or sense of smell — both working opposite in each instance, see? That is, overtaxed in certain portions, the sense of hearing acute; overtaxed in others the sense of hearing deficient; of sight and of taste deficient, and vice versa in feeling and in the sight and speech. (4555-1)

The effects are not uniform — one organ is overtaxed while another is deficient, one sense is hypersensitive while another is dulled. The same underlying systemic condition produces opposite effects in different sensory channels depending on which specific nerve and circulatory pathways govern each organ and how those pathways respond to the overall disturbance. This variability makes sensory organ assessment clinically complex and is one of the reasons the readings assess the sensory organism as an integrated unit.

Visual Pathology

The readings' approach to visual disturbance consistently traces it to circulatory and nerve supply impairment rather than to primary eye pathology. Reading 132-1 describes how lesions at the vertebral levels governing the eye's supply produce circulatory impairment:

The seat of the trouble we have here is produced from the lesions formed along the muscular force of the spine leading to the head, and the blood supply to the head in itself until we form an out of channel of the supply of

blood to the head. The blood don't go to the head right, or the supply is changed from the ordinary or normal channel of the supply of blood to the head, which shows itself more in the eyes than we have in particles in other parts of the body, producing then, to the eye in itself, not a removing of the used forces by the sense of sight in its action onto the brain through the optic nerve of the eye. (132-1)

The eye, like every other organ, must eliminate its used forces through the blood and lymphatic supply. When that supply is diverted by spinal lesions, the used forces accumulate in the eye rather than being cleared, producing congestion, inflammation, and eventually visual impairment. Eye pathology in the readings is primarily a failure of cellular elimination — analogous to the systemic toxic accumulation described in Section 2.2.5 but localized to the visual apparatus.

Reading 3931-1 illustrates this mechanism clinically. Visual strain producing pains through the head and across the nasal bridge is traced not to the eye itself but to "overtaxation from the nerve supply and brought about by non-acting of the blood supply to rebuild the forces through the lymphatics and capillaries." The treatment recommended — open air, shaded light, rest from strain, improved digestion — addresses the systemic conditions undermining the visual nerve supply rather than treating the eye directly.

Reading 5499-1 traces more complex visual pathology — continuous irritation and inflammation in the orbit — to a cascade originating in throat and bronchial congestion. This produced lesions in the upper dorsal and lower cervical, which then "multiplied" into "continual irritation to both the ear and to the eye, through that of the connection especially to the Eustachian Tube, and to the optic nerve

itself." The optic nerve is described as being "deadened" by this reflex process — not destroyed organically but rendered less responsive through chronic reflex irritation from distant nerve centers. This is consistent with the readings' understanding of optic neuritis and inflammatory conditions of the optic nerve as primarily reflex conditions rather than primary diseases of the nerve itself.

Auditory Pathology

The readings' treatment of hearing disturbance follows the same systemic-causation framework as vision, with the Eustachian tube functioning as a key anatomical link between systemic conditions and auditory function. Reading 5499-1 describes the progression from systemic disturbance to hearing loss. Mucous membrane lesions in the nasal and sinus region, produced by chronic congestion and poor elimination, extend their influence through the Eustachian tube to produce "dull thumping, roaring at first, then gradually (apparently) hardening, or less capable of hearing." This progressive pattern — from tinnitus-like sounds to gradual hearing reduction — is traced entirely to reflex consequences of upper dorsal and cervical nerve center disturbance rather than to primary ear pathology.

Among the most striking illustrations of the systemic reflex model applied to hearing is reading 578-12, which traces a patient's hearing loss to pelvic inflammation: "The very inflammation, or forms of inflammation in the pelvic region, tends to work on the auditory forces — or the nerves of the sensory system. And as the weakness of this body has been in those inclinations of the auditory system, the reflex action is found in same." Pelvic inflammation reflexing to the auditory nerve — through the sympathetic chain connecting the lower body to the cervical-dorsal sensory ganglia — illustrates how anatomically remote the origin of sensory pathology can be from its

clinical expression. The therapeutic implication is correspondingly systemic: treat the pelvic inflammation first, before addressing the hearing directly.

Nasal and Olfactory Pathology

The nasal passages occupy an important position in the readings as both a sensory organ and an eliminative channel. The mucous membranes of the nose serve both to perceive olfactory stimuli and to filter, warm, and eliminate materials from the circulation through the respiratory channel. Reading 5499-1 traces nasal and sinus congestion as a primary stage in the cascade that eventually impairs vision and hearing. Conditions in the throat and bronchials gave trouble first, then nose and nasal cavity, then the sinus region — these "gradually formed hindrances in proper elimination, building up in the mucus portions of these a form of lesion, or obstruction." The nose, as the entry point of the respiratory channel, is vulnerable to accumulation of the drosses that the respiratory system is attempting to eliminate when the bowel and kidneys are insufficient in their eliminative activity. Chronic nasal congestion and sinusitis in the readings are therefore often addressed through improving systemic elimination rather than through local nasal treatment.

Reading 304-2 notes that cervical lesions "does not affect the eye, the sense of smell or taste, yet at times all feel the effect, especially just after this dizziness" — illustrating that the sensory organs can register the reflex of systemic and spinal disturbances even when they are not directly impaired. The senses function as systemic indicators as well as primary perceptual organs.

Disturbances of Taste

Taste disturbance is consistently associated with disturbances in the gastric juices, the saliva, and the mucous secretions of the upper

digestive tract. Reading 4555-1's observation that taste can be simultaneously "deficient" in one context and "vice versa" in another reflects the readings' understanding that taste disturbance is more likely a consequence of fluctuating systemic conditions than of any fixed pathology of the taste organs themselves. The tongue and taste apparatus change their sensitivity in response to the acid/alkaline balance of the saliva, the quality of the gastric secretions, and the state of the pneumogastric nerve — which governs both gastric secretion and the sensory impressions of the upper digestive tract.

Speech and Laryngeal Pathology

The larynx and vocal apparatus are consistently associated with two primary causes of dysfunction: cervical nerve pressures affecting the laryngeal nerve supply, and chronic congestion from inadequate emunctory and lymphatic drainage. Reading 304-2 traces laryngeal congestion directly to cervical lesion. A second cervical subluxation causes the throat and larynx to be "easily susceptible to congestion in other portions of the body, taking on the condition sympathetically." The larynx, in this reading, is not primarily inflamed from external infection but from impaired lymphatic drainage of materials the lymphatics are attempting to eliminate through the upper respiratory channel.

Reading 4975-1 identifies the secondary cardiac plexus (5th and 6th dorsal) as an additional governing center for the larynx and upper bronchials — producing as reflex consequences "the rise at times of mucus in the throat and easily at times for congestion of colds in the head."

Speech impairment — whether delayed development in children or loss of voice in adults — is addressed in the readings through identifying the nerve pressure or circulatory deficit upstream that is impeding adequate incentive to the laryngeal apparatus, correcting

that condition, and allowing vocal function to restore itself as the nerve and blood supply normalize. Reading 16-1's case of a child who had not developed speech is treated through correction of sacral and cervical pressures that were preventing the full vibratory coordination necessary for voice production — not through direct laryngeal treatment.

Systemic Toxicity and Catarrhal Conditions

A recurring pattern across all the sensory organs is the role of systemic toxicity in impairing sensory function. When the primary eliminative channels — bowel, kidneys, respiratory system, skin — are insufficient, the blood carries toxic material through the sensory organs' circulatory supply, producing congestion and impaired self-renewal. Reading 681-2 describes the mechanism for catarrhal conditions: "the catarrhal condition is the lymph becoming so overcoated with the air in such measures or manners, not being properly balanced to produce the correct circulation." Catarrh — the chronic mucous congestion of the sensory passages — is understood as lymph overloaded with eliminative material that has lost its normal circulatory quality. The result is the characteristic mucous accumulation in the nasal passages, sinuses, throat, and ears.

Reading 4975-1 illustrates how hepatic circulation disturbance reflexes to sensory function through the secondary cardiac plexus. The sensory organs develop intermittent disturbances "not hindrances to the individual functioning of the organs but become, at times, a matter of worry to this body." The sensory disruptions are variable and systemic rather than fixed and local, arising when the hepatic disturbance exceeds the body's compensatory capacity and subsiding when systemic conditions improve. Across the readings that discuss sensory organ dysfunction, the cause is often variable, systemic-dependent, reflex in origin, and responsive to correction of

upstream conditions — which is more characteristic than fixed, locally-caused, structural disease.

Modern Context

Modern ophthalmology, audiology, and otolaryngology address the sensory organs primarily at the level of the organs themselves — examining the lens, retina, and optic nerve; the cochlea, ossicles, and auditory nerve; the nasal turbinates, sinuses, and olfactory epithelium. The readings' consistent emphasis on systemic and spinal causes of sensory organ dysfunction has no direct equivalent in these specialties, though the field of neuro-otology — which addresses hearing and balance disorders through their neurological substrates — comes closest to the readings' nerve-supply framework.

The readings' identification of specific spinal levels (1st and 2nd cervical, 2nd dorsal, 2nd lumbar) as governing the eye's blood supply corresponds in a general sense to modern understanding of the sympathetic innervation of the eye and the role of the cervical sympathetic chain in ocular circulation — though the specific anatomical details differ from modern descriptions (Cabral et al., 2022; McDougal & Gamlin, 2015). The Eustachian tube's vulnerability to upper respiratory congestion and its role in hearing loss are fully recognized in modern medicine and are consistent with the readings' repeated identification of this connection as a primary pathway for auditory pathology. The role of chronic catarrhal congestion in producing sensory organ dysfunction corresponds in general terms to modern understanding of chronic rhinosinusitis and its relationship to systemic inflammatory states (Fokkens et al., 2020; Lin & Yeh, 2022).

The readings' identification of pelvic inflammation as a reflex cause of hearing loss (578-12) has no direct modern equivalent in

otolaryngological practice, though the general principle of remote sympathetic reflexes affecting distal organs is recognized in the broader framework of autonomic neurology.

4.4 The Respiratory System

Overview

The respiratory system in the physical readings encompasses the throat, larynx, bronchials, and lungs — the full passage through which air is drawn into and expelled from the body. In the organ section of a typical reading, this system follows the brain and sensory organs in the head-to-toe sequence, and it receives considerable clinical attention because of the dual functional role the readings assign to it. The respiratory system is both an oxygenation organ — taking in oxygen and expelling carbon dioxide — and an eliminative channel — clearing from the blood certain toxic materials and drosses that must be removed from the body. This dual character, and the consequences of its disruption, is the central theme of the readings' respiratory organ framework.

The assessment of "The lung force is very good" — appearing consistently throughout the readings' organ sections — is one of the most common reassuring statements of organ assessment, confirming that respiratory function is frequently intact even when other systems are significantly disturbed. When the readings do identify respiratory disturbance, they almost invariably trace it to upstream causes rather than primary lung disease — a pattern consistent with the organ section's position as the downstream expression of blood and nerve conditions.

Anatomy

Respiratory Nerve Supply and Spinal Mechanics

As with every organ system in the readings, the respiratory system's function depends critically on adequate nerve supply through the cerebrospinal and sympathetic systems. The primary spinal levels governing the respiratory organs are in the mid-to-upper dorsal region — particularly the 4th, 5th, and 6th dorsal — corresponding to the cardiac plexus and the thoracic sympathetic ganglia that govern the bronchial smooth muscle and the pulmonary blood vessels.

The anatomical precision with which the readings locate respiratory governance is illustrated in reading 4527-1, which traces respiratory disturbance to a 6th dorsal lesion: "we find at the 6th dorsal a lesion that affects this condition through the circulation in the larynx and through the bronchials and lungs, and then, of course, of the impingement in certain conditions of the nerve forces as governing this portion of the body. Not to the extent as to cause a non-activity of the centers, or of the sensory activity of that portion of the body, but to such an extent as to affect the functioning of the organs themselves." The lesion here is precisely localized, and its consequence is equally precise; not gross failure of respiratory activity but a subtle functional impairment affecting oxygenation quality and eliminative capacity.

The respiratory system also receives governance from remote nerve centers through the sympathetic chain. Reading 2722-1 describes how pelvic nerve reflexes — propagating through the sympathetic chain from the lower body to the thoracic region — produce lymphatic overactivity in the respiratory area, altering the secretory balance of the bronchial mucous membranes. "The lung force is very good, save as reflexes through nerve centers from the lower part of

the body, or from the pelvis region, producing a difference in the condition of the respiratory system, so that the action of the lymphatics to feed, or to produce their proper functioning channels go to excess with the secretions they send up to the cuticle" (2722-1). The lung forces themselves are described as "very good" — structurally intact — but functionally influenced by a reflex from organs anatomically remote from the chest.

The sympathetic reflex pattern is further illustrated in reading 5685-1: "In the lungs whole of respiratory system, very good save when some minor irritation by disturbances of the sympathetic reflex makes for some restlessness." The sympathetic reflex here produces intermittent respiratory restlessness — not bronchospasm or structural disease but a functional irritability that comes and goes with the sympathetic system's activity pattern.

The respiratory and perspiratory systems are anatomically paired as the two primary surface eliminative channels of the body — the respiratory system eliminating through the breath, the perspiratory system through the skin and sweat. They are distinguished from the bowel and kidneys, which eliminate through internal secretory-excretory pathways. Reading 270-32 names this pairing explicitly: "the humor which arises from the poisons in the system, that disturb the coordination between the respiratory eliminating system and perspiratory and the alimentary canal." All three — respiratory, perspiratory, and alimentary — must coordinate their eliminative activity for the body to clear its toxic burden effectively.

Physiology

The Respiratory System as an Eliminative Channel

The most important conceptual point for understanding how the readings treat the respiratory system is one that distinguishes the

readings' framework from modern pulmonology. The readings consistently identify the respiratory system as one of the four primary channels of elimination, alongside the bowel, kidneys, and skin. This eliminative role — clearing toxic material and drosses from the blood through the breath — receives emphasis throughout the readings addressing this system.

Reading 4614-1 describes the mechanism directly: "The eliminating of the quality of these from the system, these used ends that should be eliminated from, would be through the capillary circulation, to the respiratory organs, the lungs, out through the breath, also through the kidneys, by which most of the dross of the body should be eliminated through these." The lungs here function as a blood-cleansing organ — receiving used material through the capillary circulation and eliminating it through the breath — in coordination with the kidneys' excretory function. The two organs together constitute the body's primary upper channels of systemic elimination, coordinated through the hepatic circulation described in Chapter 2.

The consequence of bowel elimination failure falling on the respiratory system is described in reading 660-1: "the plethora in the colon itself — that makes for the backing up of the gastric flows to the liver, spleen, pancreas activity, thus causing much that should be eliminated through the alimentary canal to be thrown off in the circulation — that produces in various portions of the body the tendency for the respiratory and the sweat system, or the perspiratory system, to throw off poisons that should be carried off through the alimentary canal." When the primary eliminative channel fails, the respiratory and perspiratory systems absorb the compensatory burden — a mechanism established in Section 2.2.5 and confirmed here at the organ level.

This eliminative dual role means that respiratory symptoms — coughing, increased mucous production, shortness of breath, or the feeling of fullness and congestion in the chest — are frequently not signs of primary lung disease in the readings but of systemic eliminative overload being expressed through the respiratory channel. Reading 5499-2 illustrates this in a case where eliminations are "incoordinating in their activity" — sometimes good through the alimentary canal, sometimes deficient through the kidneys, and at other times expressed as "cold perspiration of evenings or night" or variable respiratory activity. The respiratory system's behavior cycles with the systemic eliminative pattern.

The coordination of the respiratory-perspiratory pairing in eliminative activity is further described in reading 5499-2: "again we find the respiratory system, as of cold perspiration of evenings or night, and again it's hard for perspiration to be seen on body, except on forehead or arms, or thighs." The respiratory and perspiratory systems cycle together in their eliminative activity, with nighttime perspiration representing the body's nocturnal shift toward surface elimination through both channels simultaneously. When this coordination is disturbed by auto-intoxication, the pattern becomes erratic and insufficient.

Oxidization: The Readings' Term for Lung Oxygenation

The readings use the term oxidization — and occasionally "oxidation" — for the process of oxygenating the blood in the lungs: the exchange of carbon dioxide for oxygen that is the respiratory system's primary biochemical function. This term reflects the late nineteenth and early twentieth century chemical vocabulary in which the oxygenation of blood was understood as a combustion-related process analogous to the oxidization of metals.

The most explicit clinical description of failed oxidization appears in reading 4527-1: "the blood become full and pass back through the system without perfect clarification or oxidation in the lungs themselves, for the condition existing through the bronchials themselves make the depression in the circulation as passes into and through the lungs themselves." When the bronchials are congested or the lung circulation is depressed by a spinal lesion at the 6th dorsal, the blood passing through the lungs is not fully oxidized. It returns to the systemic circulation without having completed its gas exchange. The consequence is a plethoric condition in the lung and a reduction in the oxygenation available to peripheral tissues, producing the heaviness, congestion, and poor elimination through the extremities that reading 4527-1 describes.

An overtaxed liver can cause "an opening of the cells or expansion or quickness of the breath at times, and fill the lungs too full, until enough of the carbon is carried into the system to help the forces from burning out of the organs of the body in itself" (4614-1). The lungs here compensate for hepatic overload by increasing their respiratory rate and volume, attempting to supply additional carbon cycling to prevent organ depletion. The respiratory system in this reading acts as a compensatory regulator of the systemic metabolic state, not merely a gas exchange organ.

The Lung Force Assessment

In the organ section, the lung force receives a concise functional assessment such as "The lung force is very good" or "The lung forces are good, showing [specific qualifier]." This assessment reflects the lungs' general resilience and their capacity to maintain adequate function even when other systems are significantly disturbed. The frequency with which positive lung force assessments appear throughout the readings confirms that the lungs often function

adequately despite systemic disturbances — and that when respiratory impairment is found, it is typically described as mild, functional, and reflex in character rather than primary and organic.

Reading 5685-1 exemplifies the typical qualified positive assessment: "In the lungs whole of respiratory system, very good save when some minor irritation by disturbances of the sympathetic reflex makes for some restlessness." Reading 4933-1 offers another: "Through the lung force proper we find very good respiratory system, though blocked at some of the cycles by the action of the forces over this body." In both cases the fundamental lung force is intact; the impairment is cyclical, reflex, and upstream in origin.

Pathology

Plethoric Lung Action

The term plethoric — appearing in the readings in respiratory contexts — refers to a state of overfilling or excessive blood congestion in the lung tissue. The lungs are receiving more blood than they can process effectively, producing congestion, difficult breathing, and impaired oxygenation.

The mechanism is described in reading 4527-1: bronchial congestion from a 6th dorsal lesion depresses the circulation through the lungs, causing blood to pool and creating "a plethoric condition when the body is especially in certain positions, or the cycles of circulation reach a given point." The plethoric condition is worse in certain positions — particularly when reclining — because the gravitational distribution of blood further loads the already-congested lung circulation.

The systemic dimension of plethoric lung action is described in reading 3951-1: "The lungs and bronchials show the effect of the strain on the circulation in that there are cells and air chambers of the

lungs proper that have become plethoric in their action." When the circulation throughout the system is strained — from nerve system disturbances, hepatic overload, or systemic toxic accumulation — the lungs reflect that strain by becoming plethoric in their local cellular and air chamber activity.

Plethoric lung action contrasts with the more common finding of depleted lung function. The readings distinguish between an overloaded respiratory system (plethoric) and an under-supplied one (poor blood quality, inadequate oxygenation). Both are pathological, and both have different upstream causes requiring different therapeutic approaches. This precision in distinguishing pathological states by their upstream origins rather than their local presentation is characteristic of the readings' clinical framework throughout.

Tuberculosis

Tuberculosis is addressed in the readings with particular sophistication — understood not as a primary infectious disease in the modern sense but as a condition that develops when the blood's inability to properly coordinate its assimilation with the respiratory tissue's needs creates an environment in which destructive cellular forces can establish themselves. Reading 369-5, addressing incipient tuberculosis, states: "the tissue in the respiratory system, as related between that assimilated and the character of that produced by the blood's entry into the circulation, has NOT ALWAYS, and DOES not ALWAYS, wholly coordinate. This is a wonderful study — in the condition, and at the case — of tuberculosis — in the beginning of cellular forces." Tuberculosis, in this reading, begins as a failure of coordination between what the body assimilates and what the blood carries to the respiratory tissue — creating the conditions in which

the mycobacterial bacilli find their foothold in tissue that has been inadequately nourished and poorly oxidized.

Reading 5618-1 describes a clinical picture of contained but potentially reactivating tuberculosis: "old tubercular cells in the left lung, some of which have renewed activity, though no broken cells — they are within themselves still being supplied by lymph and forces by circulation" — traced to a cascade of digestive, hepatic, and cardiac plexus dysfunction rather than to primary pulmonary pathology. The readings' approach is thus not to address the bacillus directly but to restore the conditions — proper oxygenation, adequate blood quality, restored eliminative coordination — that would prevent the bacillus from re-establishing itself.

Asthma

Numerous readings address asthma pathology as a neurovascular disorder produced by somatic dysfunction of the upper dorsal spinal centers. Chapter 5 contains a thorough literature review and commentary on this disorder. Essentially asthma begins as a functional disorder where improper vasomotor regulation results in hypersensitivity to a wide variety and diversity of factors that can trigger an episode. Manual therapy of the dorsal spine is the standard primary treatment, with dietary and lifestyle suggestions to reduce sources of irritation to lung tissue.

Bronchial Congestion and Progressive Structural Change

The progression from functional respiratory congestion toward organic structural change is described in reading 304-7: "With the constant coughing and breaking of tissue, and with the constant filling up and slowing up of circulation and of the ability of lungs to discharge their proper functions, the irritation gradually pulls away, or takes off portions of tissue in lungs proper. Hence the change as it

were in the structural portions of the body proper, or the thinning of the sides, in chest or upper portion of chest." The condition began as a functional disturbance of circulation through the bronchials; uncorrected, it has moved toward structural change in the lung tissue itself. This is the functional-to-organic progression principle — established in Section 4.1 — applied specifically to the respiratory system.

Severe Respiratory Depletion

Severe respiratory depletion is described in reading 4590-1, where "the physical forces are near dormant in some portions, and the replenishing and rebuilding supply or body is very low." The therapeutic recommendation in this case is supplemental oxygen: "necessary that under the present condition there be the preparation for more oxygen for the body" — through inhalation or "electrification of pine to the respiratory system." This recommendation reflects the readings' recognition that when the respiratory system's oxidizing capacity is severely depleted, it may need direct supplementation rather than simply systemic correction of upstream conditions.

Modern Context

Modern pulmonology understands the respiratory system primarily as a gas exchange apparatus — delivering oxygen to the blood and removing carbon dioxide — and secondarily as a component of the immune system through its mucociliary clearance mechanisms. The readings' identification of the respiratory system as simultaneously a gas exchange organ and a primary eliminative channel for systemic toxic material corresponds to modern understanding only partially. Modern medicine recognizes that the lungs clear some volatile metabolic products through the breath — including acetone in diabetic ketoacidosis and alcohol — but does not describe this as

a major eliminative pathway in the way the readings do. This represents a genuine divergence between the readings' framework and modern pulmonology. The readings assign to the respiratory channel a systemic eliminative role that has no direct modern equivalent.

The readings' term oxidization, reflecting the late nineteenth and early twentieth century chemical vocabulary for pulmonary oxygenation, corresponds to what modern physiology describes as pulmonary gas exchange — the diffusion of oxygen into and carbon dioxide out of the alveolar capillary blood. The readings' plethoric lung condition corresponds in a general sense to what modern medicine calls pulmonary congestion or pulmonary hyperemia — an excess of blood in the pulmonary circulation most often associated with cardiac or hepatic pathology, which is precisely the association the readings describe.

The readings' understanding of spinal lesions at the dorsal level as affecting bronchial and pulmonary function is consistent with the modern osteopathic understanding of thoracic somatic dysfunction and its effects on pulmonary mechanics and autonomic regulation of the airways. The therapeutic recommendations of inhalants, herbal expectorants, and spinal manipulation for respiratory conditions are consistent with early twentieth century medical practice and with contemporary osteopathic and naturopathic approaches to respiratory care.

4.5 The Heart

Overview

The heart occupies a distinctive position in the readings' organ framework — one that differs substantially from its central role in modern cardiology. Where modern medicine treats the heart as the

primary pump of the circulatory system whose dysfunction is a leading cause of disease and death, the readings consistently treat the heart as a reflex organ. Its disturbances are almost invariably the downstream consequences of upstream circulatory, nerve, and systemic conditions rather than primary pathological events in their own right. This characterization is not an occasional finding but the dominant pattern in the readings addressing the heart, in which explicit statements that the heart condition is not organic — not the primary source of its apparent disturbance — recur throughout.

The readings' primary assessment terms for the heart are heart action and pulsations — functional vocabulary consistent with the readings' general approach. The heart is usually assessed by how it is performing, not by the structural state of its tissue.

Anatomy

The Heart and the Cardiac Plexus

The cardiac plexus and secondary cardiac plexus — discussed in the context of the nerve system in Section 3.5 — constitute the primary nerve supply governing the heart's action. They are the anatomical pathway through which systemic conditions reach the heart and alter its behavior. Reading 4445-1 provides the most detailed description of how cardiac plexus disturbance produces heart symptoms without organic cardiac disease:

The body takes, needs and requires the full oxidation in the system for the plethora condition existing in the veins themselves rather than arterial pressure, so there is no organic heart forces produced by the high pressure. Through the nervous system we find the condition that produces the action as expressed in the circulation is with the overtaxed nerve forces at times and with the high hepatic circulation there is or has been and the

effects are still apparent with the nerve forces as expressed in the pneumogastric and hypogastric centers and plexus, the relaxing of the glands and tissue governing the change of blood forces from arterial to vein supply. (4445-1)

This passage traces a complete reflex chain. High hepatic circulation overtakes the nerve forces through the pneumogastric and hypogastric plexuses. The relaxation of the glands governing the arterial-venous transition raises blood pressure in the venous circulation. The elevated venous pressure increases demand on the heart — all without organic cardiac pathology at any step. The cardiac plexus receives the disturbed impulses from the hepatic-pneumogastric chain and distributes them to the heart as abnormal stimulation.

The spinal levels governing the cardiac plexus are identified in readings 338-5 and 338-6 as including the lumbar area and 9th dorsal. Incomplete osteopathic corrections at these levels produced cardiac plexus disturbance that eventually triggered what appeared clinically as a heart attack. "The disturbance as indicated that brought on the heart attack is the lack of completing those adjustments that were indicated for the body, and that would relieve the tension in the nerve system and allow better eliminations through the alimentary canal" (338-6). Thus with a spinal lesion uncorrected, nerve tension uncorrected, alimentary elimination uncorrected — the cardiac event followed.

The cardiac plexus also mediates between pancreatic conditions and apparent heart disease, as noted in reading 816-1. Conditions with the heart "arise from those pressures that have made gradually the increase of a disturbed circulation through the pancreas and the sympathetic cardiac plexus area. These are reflexes, not an organic

condition." The pancreas, through its disturbed secretory function, affects the blood's composition and the nerve impulses through the cardiac plexus — producing heart symptoms that are entirely reflex in character.

The Heart as Battery: Electrical Life Force

Reading 4007-1 identifies the heart as an essential component of the "batteries" of the nervous system — alongside the liver, kidneys, and lungs. In this framework, the heart is understood not merely as a mechanical pump but as one of the primary organs through which the body's electrical life forces are stored and distributed. The heart's rhythmic contractile activity is itself a vibratory phenomenon — the mechanical expression of the electrical forces that govern all cellular activity throughout the body.

Each organ's self-renewal operates on its own specific vibration, as reading 108-2 describes: "the vibration that is necessary to create that tissue which will replenish a heart cell, or a ventricle, will not move in the same cycle as one that replenishes the glands of digestion." The heart cell has its own vibratory cycle of renewal — different from every other tissue in the body — and the coordination of all these cycles constitutes normal systemic health. When the circulatory and nerve conditions are inadequate to support these renewal cycles, the heart cell's capacity for self-renewal is compromised just as any other organ's is, and structural consequences eventually follow. Appendix B explores the "battery of the body" concept and the "vibratory system" that operates through nerves, organs, and blood vessels.

Physiology

The Heart as Reflex Organ: The Central Principle

The most memorable and precise statement of the heart's reflex character in the readings appears in reading 359-2:

This is purely a reflex condition, produced by the inefficient quantity of the circulation and the organ attempting to use ALL that is in the system for the sustenance of same, see? Just as might be an illustration of an engine attempting to pull a heavy load with too little steam! (359-2)

The engine-and-steam analogy is clinically exact. When the circulation is deficient — when the blood supply available to the heart is insufficient in quantity or quality — the heart does not simply fail. It compensates. It works harder, contracts more forcefully or more rapidly, attempting to sustain the body's circulatory needs with an inadequate supply. The resulting symptoms — rapid or irregular pulsations, labored action, palpitations — are not signs that the heart itself is diseased. They are signs that the heart is straining against systemic conditions it did not create.

This characterization extends into the psychological dimension as well. Mental and emotional strain — what reading 3830-1 calls "a case of nerves rather than the action of the organ itself" — produces heart disturbance through the sympathetic nerve system, not through any intrinsic cardiac pathology: "the questioning of the individual mind over many things of a secular nature produces within the body these conditions." Treatment in such cases is directed not at the heart but at the nerve forces and the mental attitude disturbing them.

Heart Action: The Readings' Functional Assessment

In the organ section of a typical physical reading, the heart receives a concise functional assessment organized around several parameters. Rate and rhythm — whether the heart action is above normal (stimulated, rapid, quick pulsations), below normal (slow, depressed), or irregular — is the primary measure. The parenthetical notation "[Tachycardia]" added by a later annotator to reading 265-6's description of "quick pulsations" is instructive. It illustrates how the readings' functional vocabulary maps onto modern clinical terminology while remaining distinct from it. When asked in that reading whether a patient's hard breathing indicated heart complications, the response is direct: "Organically, no heart disturbance. The hard breathing naturally makes for quick pulsations, but not so much in the heart's activity." The tachycardia is a mechanical consequence of respiratory strain on the circulation — not cardiac pathology.

When the heart action is described as stimulated or above normal, the readings identify the upstream condition producing the over-stimulation. Hepatic overload — the liver overtaxed and backing up into its channels — produces an over-stimulation of the cardiac plexus, as reading 4614-1 describes: "there is or has been an opening of the cells or expansion or quickness of the breath at times, and fill the lungs too full, until enough of the carbon is carried into the system to help the forces from burning out of the organs of the body in itself." The cardiac plexus, receiving abnormal impulses from the overtaxed hepatic circulation, stimulates the heart beyond its normal activity. This is stimulation by reflex, not by intrinsic cardiac disease.

Normal heart activity, in the readings' framework, is not achieved by treating the heart directly but by restoring the hepatic system to normal coordination. Reading 4007-1's therapeutic logic is explicit:

"we will stimulate better eliminations and activities of the kidneys, we will set up better conditions with the activities of the liver and kidneys, and the normalcy of heart activity should be brought to normal pressure, indicating a better equilibrium throughout the metabolism of the body-forces." When the hepatic system — liver, kidneys, and their associated eliminative functions — returns to proper coordination, the heart's activity normalizes as a consequence.

A specific and unusual mechanism linking blood composition directly to cardiac rhythm appears in the context of Section 2.2.2's discussion of leucocytes. An excess of white blood cells in the circulation produces a "double beat" in the heart's action — the immune activity of the leucocytes altering the character of the blood's flow through the cardiac chambers and producing an irregular double rhythm detectable in the pulsation (596-1). This is among the most specific blood-to-heart reflex mechanisms in the readings, confirming that even the rhythm of the heart's beat can be determined by blood composition rather than by any intrinsic cardiac arrhythmia.

The principle that underlies all of these assessments is stated in reading 108-2: "when we have hindrances — as is designated or seen here with this body, where nerves fail to RECEIVE proper INCENTIVES, the reaction from those organs or those portions of the system supplied by that nerve energy suffers in its cycle of functioning." The heart, like every other organ, depends on proper nerve incentive for normal function — and when that incentive is impaired by upstream spinal or systemic disturbance, the heart's rhythmic activity becomes disorganized or excessive.

The Heart and the Hepatic Circulation

The heart's relationship to the hepatic circulation is one of the most clinically important connections in the readings' cardiovascular framework. The heart is understood as the organ that must receive and distribute the blood that the hepatic organs have processed. When the hepatic circulation is disturbed, the heart bears the circulatory burden of that disturbance directly.

Reading 4694-1 provides a complete causal narrative from digestive disturbance through the entire system to heart involvement. Poor digestion produces poor assimilation, which produces blood deficiency, which produces hepatic strain through the liver, which "becoming to the opposite pole or to the liver force here, and in its action then becomes by them through the action on to the heart force — quick breath to the body at times." The heart involvement is the last link in a long causal chain originating in the stomach and small intestine — treating it at the cardiac level alone would address only the terminal expression of a process rooted much earlier in the digestive system.

The same principle extends to the pancreas. Heart pulsation disturbance was traced in reading 2260-1 to pancreatic conditions where the 9th through 12th dorsal vertebral segments show congestion governing both pancreatic function and the cardiac plexus. This illustrates that the heart disorder, the blood pressure variation, and the pancreatic conditions are all expressions of the same dorsal spinal disturbance, not independent pathological entities requiring separate treatments.

Pathology

Apparent Heart Attacks: The Readings' Analysis

Several readings address episodes that presented clinically as heart attacks or acute cardiac events and offer a distinctive causal analysis of what actually occurred. The most direct statement appears in reading 1057-1:

What caused the spell last fall which apparently was a heart attack? As indicated, the pressure through the engorgement in the colon itself upon the system; producing an increased pressure in the flow of the circulation. Not a heart attack, rather the nerve conditions and pressures from the engorgement in the colon. (1057-1)

Colonic engorgement — the pressure of a distended or impacted colon on the surrounding circulatory and nerve structures — is identified as producing what appeared to be a cardiac event. The increased circulatory pressure from the colon's engorgement propagated through the nerve system to produce the cardiac symptoms. Treating the colon — through colonic irrigation and digestive correction — is the therapeutic response identified, not cardiac intervention.

The causal chain leading to a genuine cardiac event is traced in readings 338-5 and 338-6. A spinal lesion at the lumbar area and 9th dorsal, insufficiently corrected osteopathically, maintained nerve tension that prevented proper alimentary elimination; the uncorrected conditions produced the cardiac event. The readings here do not deny that a real cardiac event occurred — they trace precisely the upstream sequence of uncorrected conditions that made it inevitable.

Reading 760-18 provides a sobering prognostic statement about organic valvular disease developing from chronic hepatic strain: "there are those strains upon the nervous system which not only affect the circulation between the liver and the heart and lungs themselves, as to make for a dilation in the arterial circulation that must eventually make a valvular condition in the heart." A followup report records that this individual died of a heart attack fifteen years after this reading — confirming the prognostic accuracy while also confirming that the valvular condition was correctly identified as arising from chronic circulatory strain rather than from primary cardiac disease.

Blood Pressure and the Heart

The readings link blood pressure to cardiac function through the same circulatory framework, understanding elevated blood pressure as a consequence of systemic circulatory conditions rather than a primary cardiac or vascular disease. High blood pressure is traced in reading 4685-1 to venous plethora: "the over stimulus to the blood supply that has produced a plethora in the veins themselves. Hence a high blood pressure and a condition through the heart force itself to carry on the condition." The plethora — an excess of blood in the venous circulation — creates the elevated pressure that the heart must overcome in its pumping activity.

Reading 4445-1 draws a clinically important distinction between arterial and venous pressure: the high pressure is "in the veins themselves rather than arterial pressure, so there is no organic heart forces produced by the high pressure." This distinction — that venous plethora can produce blood pressure elevation without primary arterial or cardiac disease — corresponds to modern understanding of central venous pressure and its relationship to cardiac workload.

Cardiac rhythm disturbance is linked in reading 1010-11 to colon conditions: "Keep the drosses from the colon, and those tendencies for the pressure to cause undue circulation from the dilation as exists, as has been given, in portions of the colon." The primary therapeutic target for what presents as cardiac arrhythmia is not the heart but the colon — the eliminative channel whose dysfunction is generating the nerve and circulatory pressures expressing themselves as cardiac rhythm disturbance.

When Organic Heart Disease Is Present

While the readings' dominant message is that heart disturbance is often reflex and functional rather than organic, they do acknowledge genuinely organic cardiac conditions — and do so with characteristic directness. Reading 5618-1 is explicit: "there is both an organic and functional trouble." Reading 760-18 prognosticates the development of valvular disease from chronic circulatory strain. Reading 4467-1 describes anemia contributing to heart strain. The readings do not claim that organic heart disease never occurs — they claim that it is far less common than it appears, that it typically develops as the endpoint of chronic functional disturbance rather than arising spontaneously on its own. Even when it is present, addressing the upstream circulatory and nerve conditions remains the most important therapeutic priority.

Modern Context

Modern cardiology treats the heart as the body's primary pump, whose intrinsic disease — coronary artery disease, arrhythmias, heart failure, valvular disease — is among the leading causes of morbidity and mortality in developed countries. The readings' consistent characterization of heart disturbance as primarily reflex and functional rather than primary and organic represents the most

significant divergence between the readings' cardiovascular framework and modern medical understanding.

Several aspects of the readings' framework find resonance with contemporary research, however. The recognition that colon engorgement can produce vagal stimulation with cardiac consequences — including arrhythmias and vasovagal syncope — is established in modern gastrocardiology (Sharma et al., 2012). The relationship between hepatic circulation and cardiac workload is recognized in the modern understanding of cirrhotic cardiomyopathy and the hemodynamic changes of liver disease (Liu et al., 2023). The role of autonomic nervous system dysfunction — particularly sympathovagal imbalance through the cardiac plexus — in producing arrhythmias, blood pressure abnormality, and palpitations is a major area of current cardiovascular research, consistent with the readings' emphasis on cardiac plexus nerve supply as the primary governor of heart action (van Weperen et al., 2023).

The readings' treatment of apparent cardiac events as originating in the colon, the hepatic system, or the nerve system rather than in the heart itself represents the most challenging aspect of their cardiovascular framework for modern clinical acceptance — and also, potentially, the most clinically important for cases in which standard cardiac investigation finds no organic explanation for cardiac symptoms.

4.6 The Digestive Organs

4.6.1 The Stomach

Overview

The stomach occupies a position of fundamental importance in the readings' account of human physiology. It is the primary organ of

digestion, the site where food values are chemically transformed, and the primary source from which the blood receives the materials necessary for the maintenance of every tissue and system in the body. The readings return to the stomach with remarkable frequency across the physical readings, describing its anatomy, its physiological mechanisms, and its pathological variations in considerable detail. The stomach is not treated in isolation. Its function is represented as inseparably linked to the nerve supply that governs it, to the adjacent organs that continue its work, and to the quality of the blood supply that both feeds and is produced by it.

The foundational statement of the stomach's role appears in reading 134-1 where the entire condition of the system, including its capacity to supply "building material for the bone, muscle, nerve, for the blood, brain, for each different organism," depends on what "the stomach itself" can supply through the digestion it carries on. The stomach is thus, in the readings' framework, not merely one organ among many but a foundation upon which systemic health or systemic impoverishment is constructed.

Anatomy

The Cardiac and Pyloric Ends

The readings consistently identify two functional poles of the stomach: the cardiac end (also called the cardiac portion or upper portion) and the pyloric end (also called the lower portion or pyloric end proper). These designations correspond to the two openings of the organ — the entrance from the esophagus above and the exit into the duodenum below — and the readings treat them as having physiologically distinct characters.

The cardiac end receives food from the esophagus and is associated with the activity of the salivary secretions that accompany ingestion.

When the stomach is improperly positioned, "the gastric juices from the salivary glands, from the upper portion or cardiac reaction of the stomach itself" may fail to act adequately upon incoming food (667-8). The cardiac end is also described in relation to the secondary cardiac plexus, a nerve network whose involvement in gastric function is discussed below.

The pyloric end is the more chemically active lower region, associated with the acid gastric flows and with the emptying of stomach contents into the duodenum. Reading 189-7 describes a condition in which "in the lower portion of the pylorus there is an engorged condition that prevents the gastric flow of the acid in the lower portion with the alkaline in the upper portion" — suggesting that the readings distinguish an acid character in the lower stomach from a more alkaline character in the upper portion, a differentiation of gastric chemistry across the organ's extent. Spasmodic contractions of "the pyloric end of the stomach itself" can produce alternating zones of "overalkalinity in one portion, an overacidity in another portion," leaving "food values oftentimes become non-active, and there is the lack of the flow of the gastric juices to carry on proper digestion" (1223-1).

The pylorus — the sphincteric passage between the stomach and the duodenum — receives specific attention. Reading 3832-1 refers to "the pyloric end of the stomach digestion" as the critical transition point from gastric to intestinal phases of digestion. Reading 13-1 describes the pyloric end showing "the action of foods resting or remaining too long within the organ," having produced "ulcerations rather than lacerations in this portion of the body" — a distinction the readings employ with some precision. The former implies a more deeply penetrating erosion, the latter a surface tearing.

Walls and Mucous Membrane

The readings treat the walls of the stomach as an active anatomical structure — not merely a passive container but a tissue capable of contraction, secretion, cellular damage, and regeneration. Reading 4841-1 describes how "the walls of the stomach themselves begin to contract with a circular motion, exciting or producing gastric juices" at the entrance of food, attributing the initiation of secretion to the mechanical stimulus of distension. The wall can become thickened by pathological process, as in reading 843-2, where "thickening of tissue in the upper portion, or the cardiac portion of the stomach itself" is noted — with the clarification that this "does not show or indicate any ulcerations or lacerations in the present." The cellular composition of the wall receives attention in reading 4524-3, which describes "the non-development of the cellular force, or rebuilding of the wall of the stomach" as producing pathological consequences through the action of gastric juices upon improperly maintained gastric tissue.

The mucous membrane lining is described in reading 843-2 as serving as a buffer against the self-digestive potential of the gastric juices, together with "the flow of the acids from the lower portion of the stomach or from the duodenum proper."

Position of the Stomach

A theme that recurs with striking frequency is the position of the organ relative to its normal anatomical situation. The readings describe a condition in which the stomach becomes "tipped," "tilted," or displaced — a prolapsus or ptosis — and treat this positional deviation as a significant, sometimes primary, cause of digestive failure. Reading 263-1 states: "one fault, as we find, is the position of the stomach itself; for it is tilted in a manner that makes the digestion become of the nature as to produce improper digestive forces or

fermentation taking place before there is digestion taking place in the system!" Reading 2479-1 describes how the stomach is "tipped in such a position because of the lack of the condition in the upper dorsal area to hold that impulse for activity" — connecting the positional disturbance directly to a failure of nerve supply in the upper dorsal vertebrae.

The readings suggest that the stomach's proper anatomical position depends on an adequate nerve supply to the supporting musculature and ligamentous structures. When this supply is impaired — particularly through spinal lesions or subluxations in the upper dorsal region — the organ descends or tilts from its correct orientation. Reading 565-1 provides detailed anatomical language for this mechanism: "a relaxation in the 3rd and 4th dorsal area that has tended to make for a relaxing in the POSITION of the stomach itself, or the organs or the nerve tendons and muscular forces through the hypogastric and pneumogastric plexus, as to allow the stomach itself to tilt to the lower side, or the pyloric end up and the hypogastric or the cardiac and lower than normal." This understanding helps explain why the readings so consistently prescribe spinal manipulation, vibratory therapy, and postural correction as treatments for displacement conditions.

Physiology

The Stomach as "Medicine House" or "Storehouse"

The readings offer a vivid characterization of the stomach's functional identity. "It is the medicine house, or storehouse, of the food taken into the system" (4841-1). The stomach and its associated organs are the place where:

... the secretions begin to act from the glands there to produce in the churning of the foods that which produces the proper amount of the fluids from the

activity of the organs... to produce the manner in which
ASSIMILATION — through the lacteal ducts and glands
— may add that to the body for body, blood, nerve and
system building. See? It is the storehouse or the chemical
shop, or the activities — as has oft been indicated there
— to keep these in the balance. (3832-1)

The metaphors of "storehouse," "medicine house," and "chemical shop" share a common implication. The stomach is a site of transformation, not merely containment. Raw food enters; chemically altered, digestible material leaves.

The Sequence of Digestion

The readings describe a sequential process in which digestion begins in the mouth and the stomach completes the initial chemical transformation before passing partially processed material to the duodenum. Reading 4727-3 describes the sequence: food enters "from the upper end, passed into the stomach and acted on by the gastric juices of the stomach; it is dissolved here, acting with the saliva here in the mouth, by the peptone action; passes on and is acted on by the juices in the duodenum from the pancreas juices. Rest should pass into the lactic state into the intestinal tract by being acted on by the juices here." This passage establishes a sequential chain: salivary-peptone action in the mouth → gastric juice action in the stomach → pancreatic action in the duodenum → passage into the "lactic state" in the intestinal tract.

The concept of the "peptone state" appears in multiple readings. Food enters the stomach "in a peptone state" following salivary preparation, and sufficient mastication is called for to support this transition (4841-1). Reading 134-2 advises: "The peptone that he eats and digests will help build up the body," adding that "if the mastication is perfect and digestion is better this system will soon

improve." The readings thus treat thorough mastication as a pre-gastric aid to digestion, reducing the burden on the stomach's own secretory forces.

Gastric Juices: Acid, Lactic, and Hydrochloric

The readings use several terms for the secretions produced by the stomach. "Gastric juices" is the most general formulation, appearing with great frequency throughout the readings that discuss the stomach. The readings also identify a more specifically acid character to the gastric secretions, particularly in the lower portion of the stomach. The term "hydrochloric" is used in a manner that suggests familiarity with the concept of hydrochloric acid as a component of gastric secretion. "The gastric juices of the stomach become those of a lactic acid or hydrochloric acid state," reading 4841-1 states — suggesting the readings understood the gastric juice as existing in a spectrum between lactic and hydrochloric acid expression, with the pathological tendency toward excess being an over-production of the hydrochloric element.

Dysregulated sympathetic nerve activity can produce "regurgitations of the hydrochlorics to the stomach itself," causing "bitterness, or the gall — as it were — regurgitating into or through the digestive system; producing belching, a fluttering — as it were — in the stomach itself" (325-56). The readings also distinguish between the acid character of gastric secretion and the "lactic state" into which the food mass should properly pass as it exits the stomach. When this transition fails — leaving material "in an acid state" as it passes into the duodenum — downstream pathological consequences follow, as the duodenum and pancreas must perform a critical neutralizing and transforming function that the stomach has failed to initiate.

The Role of Nerve Supply in Gastric Function

The readings consistently attribute the adequacy of gastric secretion and the mechanical activity of digestion to the quality of the nerve supply reaching the stomach — consonant with the broader principle established in Chapter 3 that the nerve system provides "incentive" to organs. The critical spinal levels for the stomach's nerve supply, as identified across numerous readings, are the 3rd, 4th, and 5th dorsal vertebrae, with the 6th, 7th, and 8th dorsal also appearing in several readings. Reading 5545-1 identifies the "4th dorsal" and the "7th and 8th dorsal" as the centers "that connect with the cerebro-spinal system's nerve centers, as govern directly the forming of activity in the stomach proper when digestion begins to take place." Reading 48-1 refers to "those centers from which the stomach proper obtains its incentive or activity" as being in the "upper DORSAL plexus."

Two nerve systems are specifically named in relation to stomach function: the pneumogastric nerve and the hypogastric plexus. The pneumogastric — the readings' term for what modern anatomy calls the vagus nerve — is described in reading 171-1 as having a junction with the sympathetic system through which "over-stimulation to the organs of the sensory system" can occur, with pains to the pyloric end traced as "reflex results from the nerve condition of the pneumogastric center." The hypogastric plexus is associated with the muscular contraction of the stomach and with its positional stability, as in reading 565-1's description of relaxation "through the hypogastric and pneumogastric plexus, as to allow the stomach itself to tilt."

Reading 261-1 provides a particularly illuminating statement of the nerve-function relationship. The phrase "act of rotation in digestion" refers to the churning mechanical motion of the stomach walls —

described elsewhere as the "circular motion" of the walls (4841-1) and the "churning" produced in the pyloric portion and throughout the duodenum (3832-1). The readings thus present the mechanical agitation of digestion as dependent upon adequate nerve incentive. Without the proper impulse from the nerve centers, "the act of rotation in digestion — this becoming dormant — allows conditions to become distressing" (261-1).

The Stomach's Relationship to Adjacent Organs

The readings consistently treat the stomach as the first stage in a coordinated system involving the duodenum, pancreas, liver, spleen, and lacteals. The duodenum receives the gastric contents and is the site where the pancreatic and hepatic secretions continue chemical transformation: "the juices of the stomach and these also, enter the duodenum and are also sluggish; they should secrete enough into this stomach to produce digestive fluid to digest the food" (134-2). The stomach's positional disturbance, as noted above, compromises not only its own function but also the flow of secretions from the liver, pancreas, and spleen. When the stomach is "tipped in such a position and manner," it creates "torpidity in the activity of the gastric juices that should flow from the duodenum, the pancreas, the liver, the spleen, for the activity upon the foods" (829-1). The stomach's anatomical relationship to the duodenum is thus not merely physical proximity but a functional dependency in which the stomach's position determines whether the digestive secretions of the hepatic-pancreatic system can reach and act upon its contents.

The lacteals are also implicated in stomach pathology. Reading 1419-2 describes how inflammation and narrowing at the lower end of the stomach, extending into the duodenum, affects "those areas through which there is greater formation or activity of the lacteal ducts;

causing the inclination for gas, as well as the lack of the assimilation of foods." This connects impaired gastric emptying to downstream failure of lacteal absorption and illustrates how a disturbance at the stomach can propagate through the entire assimilative chain.

Pathology

Displacement and Prolapsus

Stomach displacement — described variously as prolapsus, tipping, tilting, or ptosis — is among the most frequently identified stomach conditions in the readings. It is consistently linked to impaired nerve supply in the upper dorsal region, to inadequate muscular and ligamentous support, and sometimes to prior physical strain or injury. The pathological consequences include fermentation prior to proper digestion, impaired gastric flow, and reflexive disturbances in related organs. Treatment in the readings invariably involves restoration of proper spinal nerve supply, positional correction during rest, and mechanical support during activity.

Impaired Gastric Secretion and Fermentation

When the gastric juices are insufficient — whether from impaired nerve supply, depleted blood supply, or a stomach that has been physically compromised — the readings describe a characteristic pathological sequence. Food remains in the stomach without undergoing proper chemical transformation, fermentation occurs in place of digestion, and acid or toxic products are passed into the duodenum and intestinal tract, setting off a cascade of downstream consequences. The tilted position produces "easy fermentation" before proper digestion (263-1). Excess food without sufficient gastric juice produces "an acid state" in material passing to the duodenum (4841-1). Reading 134-1 frames the systemic consequences directly: "this condition of the whole body is brought

about by the whole system being run down, wore out, from lack of nutriment. Supply to the rest of the system from the stomach itself. Lack of the stomach in itself to supply the quantity needed by the system."

Superacidity and Ulceration

The readings recognize conditions of excess acid production in the stomach, with the concept of excessive hydrochloric secretion causing damage to the stomach wall and duodenum appearing in several readings. Reading 4524-3 describes how "the action of the gastric juices in the stomach itself to act onto them themselves" — the self-digestive action of the gastric juices upon the stomach wall — represents a pathological extreme. Reading 5545-1 distinguishes "lacerations" from ulcerations as a distinct type of stomach injury, suggesting a more surface-level tearing rather than a penetrating erosive lesion.

Ulcerations are mentioned in multiple readings. Reading 13-1 identifies "ulcerations rather than lacerations" in the pyloric end as the consequence of foods remaining too long. The readings appear to recognize a spectrum from functional irritation through laceration to ulceration as a progression of gastric damage, with the distinction between functional and organic conditions remaining operative throughout. Reading 843-2 explicitly reassures that thickening of the cardiac portion "does not show or indicate any ulcerations or lacerations in the present," suggesting that the absence of structural damage has prognostic significance.

Reflex Conditions from Stomach Disturbance

The readings give considerable attention to the reflexive consequences of stomach disorder upon remote organ systems. A disturbance in the stomach is understood to send abnormal

impulses through the sympathetic and cerebrospinal nerve systems, producing symptoms far from the stomach itself. A "sickening, nauseating condition of the stomach" can be traced to "the reaction brought about through the nervous system reflexes through the cardiac plexus," with a secondary effect on the heart — though "no organic trouble of the heart; her heart is strong. The trouble is purely reflex" (4727-1). Disturbances from the cardiac plexus of the stomach can be "thrown out" to produce pain and flushing in the head (4336-1), and gastric and pancreatic conditions can produce reflex pain over the left eye resembling migraine (171-1). Reading 829-1 describes how stomach disorder produced "a sympathetic condition in the prostate gland's activity," mediated through the hepatic circulation. This pattern of distant reflex effects illustrates the readings' understanding of the stomach as a nerve center whose condition reverberates through the whole sympathetic system.

Modern Context

In modern anatomy, the stomach is a J-shaped muscular organ situated in the upper left quadrant of the abdomen, between the esophagus superiorly and the duodenum inferiorly. The two openings correspond precisely to what the readings term the cardiac end (the gastroesophageal junction) and the pyloric end (the pylorus and pyloric sphincter). The terms "cardiac" and "pyloric" remain current in anatomical nomenclature. The distinction the readings draw between an acid environment in the lower (pyloric antrum) region and a more alkaline environment in the upper (fundus and body) region corresponds broadly to modern knowledge of gastric acid gradients, though the readings express this as a gradient across the whole organ rather than through the standard fundus-body-antrum distinction of contemporary anatomy.

The readings' description of the stomach walls contracting "with a circular motion" at the entrance of food corresponds to the mixing waves and peristaltic contractions of the gastric musculature recognized in modern physiology, though the readings do not use the term "peristalsis." The initiation of gastric secretion by the mechanical stimulus of food entering the stomach corresponds to what modern physiology describes as the gastric phase of secretion, in which distension of the stomach wall activates mechanoreceptors and triggers gastrin release and acid production.

The hydrochloric acid identified in the readings as a component of gastric juice corresponds directly to the hydrochloric acid (HCl) produced by parietal cells of the gastric mucosa in modern physiology. The readings' concept of a "lactic" state into which gastric contents should be converted does not correspond precisely to any single modern biochemical category. It appears to describe the partially digested, more neutralized chyme that enters the duodenum and undergoes further transformation. The "peptone state" in which food arrives in the stomach after salivary action corresponds to the beginning of protein breakdown. In modern biochemistry, peptones are partially hydrolyzed protein products formed during digestion.

The condition described across many readings as stomach "prolapsus" or displacement corresponds to gastropptosis in modern terminology — a condition in which the stomach descends below its normal position, associated with laxity of the ligamentous attachments. Gastropptosis is recognized in modern medicine, though its clinical significance has been debated. It was a more prominent diagnosis in early twentieth-century clinical practice — the period of most readings — than it is today. The readings' consistent attribution of this displacement to impaired spinal nerve

supply in the upper dorsal region has no exact modern analogue, though osteopathic and chiropractic traditions of the same period shared comparable understandings of the relationship between spinal integrity and visceral function.

The pneumogastric nerve identified in the readings corresponds to the vagus nerve (cranial nerve X) of modern anatomy — a major parasympathetic nerve governing, among other functions, gastric motility and secretion. The readings' association of pneumogastric disturbance with impaired digestion, nausea, and reflex effects in the throat and heart corresponds to the wide distribution of vagal influence in modern neuroanatomy. The hypogastric plexus identified in relation to stomach support and contraction corresponds in modern anatomy to the superior and inferior hypogastric plexuses, which form part of the sympathetic innervation of the pelvic and abdominal viscera. The readings appear to use "hypogastric" somewhat more broadly than its strict modern anatomical referent, sometimes applying it to the gastric region proper.

4.6.2 The Intestines

Overview

The intestinal tract receives more sustained attention in the readings than perhaps any other organ system below the stomach. The readings' treatment of the intestines is both broad and detailed, addressing a range of structures and conditions with unusual specificity. The intestines are understood as performing two coordinated functions — the completion of assimilation and the execution of elimination. The readings treat the failure of either as a systemic event with far-reaching consequences throughout the body.

The intestinal tract is not, in the readings, a passive conduit for digestive residues. It is a secretory organ, an absorptive organ, a nerve-governed system in intimate communication with both the cerebrospinal and sympathetic systems, and a primary defense against the accumulation of toxic material within the body. When it functions well, it provides the bloodstream with the assimilated food values on which every tissue depends and expels the dross material that would otherwise poison the system. When it is impaired — whether by impaired secretion, structural compromise, nerve incoordination, inflammation, or adhesion — the consequences propagate outward through the hepatic circulation, the nerve system, the kidneys, and ultimately the blood supply itself.

Anatomy

Divisions of the Intestinal Tract

The readings employ an anatomical nomenclature for the intestines that corresponds closely to standard terminology. The small intestine is divided into three segments — the duodenum, the jejunum, and the ileum — each of which receives mention across many readings. However, the duodenum appears by far most frequently owing to its role as the immediate recipient of gastric contents and the site of major pancreatic and hepatic secretory activity. The jejunum is identified in several readings as the segment most involved in the assimilation of nutrients, and its glands — referred to as Peyer's glands or Peyerian glands — receive specific attention as sites of absorptive activity and as susceptible locations for inflammatory and adhesive conditions. The ileum appears less frequently but is identified in specific pathological contexts, including its relationship to the hypogastric nerve centers and to the caecum at the transition to the large intestine.

The large intestine is described in terms of its principal divisions: the ascending, transverse, and descending colon, along with the caecum at the lower right. These divisions appear with notable specificity. Thus it is not uncommon for a reading to identify a pathological accumulation, inflammatory condition, or pocket of adhesion in a named segment of the colon. Reading 315-2, for example, identifies "a dry accumulation in various portions of the system; as seen in the caecum area, as seen in the turn of the upper transverse area, and as seen — especially — in that close to the heart's activity, or on the left side of the body as it enters the descending area." The "turn" from the transverse to the descending colon — what modern anatomy calls the splenic flexure — appears in this and other readings as a site of susceptibility to accumulation and sluggishness.

The Wall of the Intestine: Three Coats

One of the most structurally precise anatomical descriptions in the intestinal readings appears in reading 3798-3: "the intestinal tract is fixed, here, we have three coats, the outside, tougher coat; fibrous and blood supply and inside the mucous coat." This three-layer scheme — an outer fibrous layer, a middle layer containing both fibrous tissue and blood supply, and an inner mucous coat — receives elaboration in reading 3798-1: "The fibrous tissue and muscular, of which the intestine is composed, lined with the mucous lining, covered on the outside by a tougher fibre, which incloses the nerves of the intestine." The nerves of the intestine reside within the outer fibrous coat, not in the inner layers — a significant structural point, because it means that inflammation progressing from the mucous coat can reach and compromise the nerve supply of the intestinal wall. The same reading describes the pathological consequences when the mucous lining becomes inflamed: "the mucous lining becomes involved, becomes inflamed and in turn it

tends to destroy and produce inflammation of the fibrous tissue or muscle in the intestines, in consequence, we get the reflex conditions" throughout the system (3798-1). This inside-to-outside progression of inflammatory damage is structurally critical in the readings' framework.

The Mucous Coat and Its Secretions

The mucous lining of the intestines is described both as a structural layer and as an active secretory surface whose productions are necessary for the transit of intestinal contents. Reading 3798-3 describes the pathological condition in which "the mucous coat along these sides has formed themselves into scales, not rough outside like the hand, but scales along the intestinal tract where it should be smooth; these conditions excite the nerve force and produce the condition we have through the whole system — tired, weak and worn out to the nerve supply." The expected state of the mucous coat is smooth. The formation of scales or roughened patches represents a pathological degenerative change that directly irritates the intestinal nerve supply. Reading 3798-3 also identifies the mucous lining as functionally essential for propelling intestinal contents: "we have a lack of the secretions or mucous lining of the intestines to force the food taken in the stomach to carry on through." The mucous secretions serve a lubricating and propulsive function — without them, peristaltic movement is impeded and contents stagnate.

The Peyer's Glands

The readings give specific attention to what they call the "Peyerian" or "Peyer's glands" — lymphoid aggregations associated with the lower small intestine, particularly the ileum and its adjacent structures. These glands are identified as sites of active assimilation. Reading 3860-1 describes the condition in which "the Peyerian, or

Peyer's, glands do not secrete sufficient to keep the proper secretions, or lubricants, through the lower intestines," resulting in inadequate lubrication and sluggish elimination. Reading 4874-3 places these glands at the center of intestinal assimilative activity, noting that "in and about the glands wherein there is activity through the assimilation of foods, new blood for the body" — identifying the Peyer's gland region as the primary locus of nutrient absorption into the bloodstream. When the liver and pancreas are overtaxed, the stimulation transmitted to the system "has so taxed the system as to engorge and enlarge the region about the Peyers' gland" (182-1), showing that the glands' condition responds to the overall state of the hepatic-digestive axis.

The Mesenteric Nervous System

A structural element of the intestinal tract that receives consistent attention is what the readings call the "mesenteric system" — a term encompassing both the anatomical mesentery and, more characteristically, the nerve network distributed through it. The readings use "mesenteric system" as a functional designation for the vegetative or intrinsic nerve supply of the digestive organs. Reading 19-1 equates it with the "vegetative nerves, or those of the intestines and the stomach, and the organs of digestion," identifying it as the internal nerve network governing digestive organ function from within the abdominal cavity. Reading 3780-1 describes it as providing "the connections between the organs of the body and the cerebro-spinal centers along the cerebro-spinal nerve system, or the connection with the trunk portion of the body" — a mediating layer between the intrinsic nerve supply of the gut and the extrinsic cerebrospinal and sympathetic systems.

The mesenteric system is described as both the pathway through which spinal lesions communicate their effects to the digestive

organs and the route through which intestinal pathology generates reflexive disturbances in the nervous system. The solar plexus — the large sympathetic nerve network at the upper abdomen — is consistently identified as the governing center of the mesenteric system. Reading 3916-1 describes how the solar plexus nerve plexus on the right side of the body, when impaired, fails to supply "the necessary incentives for the functioning through the glands of the digestion and of the mesenteric system." The mesenteric system thus functions as the local nerve infrastructure of the digestive tract — the operative tissue through which higher nerve centers exercise their governing influence over digestion and elimination.

Physiology

Assimilation in the Small Intestine

The primary physiological function of the small intestine in the readings is assimilation — the absorption of digested food values into the circulatory system. This process is distributed across the length of the small intestine but is specifically associated with the Peyer's gland region of the ileum and with the lacteal ducts that carry absorbed fats and proteins into the lymphatic circulation. Assimilation is described as dependent on three coordinated factors: adequate secretion from the intestinal glands and from the accessory organs (pancreas, liver), adequate mucous lubrication, and adequate nerve supply to maintain the peristaltic movement that carries contents through the intestinal tract at the correct rate for absorption to occur.

The condition of the duodenum is of particular importance, as it is at this point that the gastric acid mass from the stomach encounters the alkaline secretions of the pancreas and liver. Reading 4396-2 notes the importance of "the duodenum and pancreatic juices passed into the intestines in a lactic state" — the transformation from acid gastric

contents to the more alkaline lactic state in which materials can be properly assimilated. When this transition fails, an "excess of the potashes or that of a hydrochloric rather than a lacteal" character reaches the small intestine, producing gas, pressure on the liver, and systemic disturbance (133-5).

Elimination in the Large Intestine

The large intestine's primary function is elimination — the disposal of the dross or waste material left after assimilation is complete. The readings treat regular, adequate elimination as one of the most fundamental requirements of physical health. The failure of intestinal elimination is one of the most consequential pathological conditions the body can suffer. When elimination is inadequate, "a backing up of the poisons to the system from the kidney and from the urine; passing back from the acid of it back into the system through the sympathetics" results (3798-3). Toxins that should exit through the bowel are instead absorbed back through the intestinal wall, entering the portal circulation and imposing a secondary burden on the liver and kidneys — the process the readings describe as auto-intoxication.

Auto-intoxication is one of the most frequently invoked pathological mechanisms throughout the readings, appearing not only in the intestinal material but as a systemic background condition across the physical readings. "The whole of the intestinal system be kept cleansed, that there be no poisons arising in system from auto-intoxication, or from the creation of gases, or the like," reading 279-10 states plainly. Reading 3798-1 gives the mechanism in detail: when the contents of the intestines stagnate, the mucous lining becomes inflamed, and "the poison from the system is not thrown off in the excreta, but is carried back into the system and produces the

condition that we have in the kidneys. They are overtaxed as a result of the increased work of throwing off this poison."

Peristaltic Movement

The readings use the term "peristaltic movement" to describe the rhythmic muscular propulsion of intestinal contents. Adequate peristalsis is understood as dependent upon two conditions: sufficient nerve supply to the intestinal musculature and adequate mucous secretion to lubricate passage. A "sluggish condition of the peristaltic movement into the intestine" is described as central to a broad pattern of systemic disturbance (4474-1), and "irregularity of the peristaltic movement of the intestinal system" is identified as one of the specific effects of intestinal adhesion (330-1). The nerve supply governing peristalsis is associated in several readings with the solar plexus and its connections to the cerebrospinal system. The hepatic circulation is also frequently invoked in relation to peristaltic function — the secretory output of the liver and pancreas, delivered into the duodenum, provides both the chemical stimulation and the fluid volume that supports intestinal transit.

Pathology

Thinned Walls and Increased Permeability

A condition described with notable specificity in the readings is the "thinning" of the intestinal wall — a degenerative change in which the wall loses its normal structural integrity, becoming excessively permeable to toxins that should be confined to the intestinal lumen and expelled through the bowel. Readings 641-7 and 270-33 both describe "seepages through the intestinal tract" and "leakages in the intestinal tract, in the thinned walls" as causes of skin disturbance and constitutional acidity. An earlier reading in the 270 series identifies the mechanism: abnormal matter "about the Peyer's

glands" had left "the walls thinned, and in turn, the system through the ducts of the intestinal tract absorbed toxins that raise or lower the temperature of the body."

The readings present thinned intestinal walls as a recurrent mechanism by which intestinal pathology generates skin conditions, nerve disturbances, and broad systemic toxicity. It represents the structural counterpart to the functional process of auto-intoxication: where auto-intoxication arises from stagnation and bacterial accumulation in the lumen, thinned walls permit the direct absorption of toxic material through a structurally compromised barrier.

Adhesions

Intestinal adhesions — described simply as "adhesions" or sometimes "lesions" forming in the intestinal tract — are one of the most frequently identified pathological conditions in the readings' treatment of the intestines. The readings describe adhesions as bands or areas of scar-like tissue that form in response to prior inflammation, injury, or infection, binding together structures that should remain separate and impeding both the mechanical movement of the intestinal wall and the circulation of blood and lymph through the affected region. Reading 330-1 identifies adhesion as the primary causal lesion producing the systemic disturbances in that case, arising from "infectious forces" — and when asked what produced the adhesion, the reading answers simply: "This was produced from an injury." Adhesions are specifically identified in relation to the lacteal duct region of the right abdomen and carry particular significance in the readings' understanding of neurological incoordination, discussed further in Section 4.6.3, Chapter 5 (epilepsy), and Appendix D (lacteal duct pathology).

Prolapsus and Displacement

The readings apply the concept of prolapsus or displacement to the colon as well as to the stomach. Reading 5433-1 identifies "prolapsus of the colon proper" as a condition requiring specific treatment. The most commonly identified site is the transverse colon, whose downward displacement produces heaviness in the abdominal and back regions, dizziness, unsteady vision, and bad taste in the mouth from toxic reabsorption (13-2). Reading 998-1 describes prolapsus of the descending colon producing pressure "against the circulation to the heart's activity, producing shortness of breath when there is the least exertion or excitement to the body." Prolapsus of the ascending colon creates a "fallen or closed condition" requiring particular care during colonic irrigation procedures (19-1). The caecum appears in several readings as a site of specific pathological congestion, spastic conditions, and adhesion — reading 251-1 describes how an adhesion in the caecum and ascending colon creates "a coldness that exists, which interferes with the coordination between the sympathetic and cerebro-spinal nerve reactions in the lower portion of the cerebrospinal system," anticipating the role of coldness in the caecal-lacteal duct area elaborated in Section 4.6.3.

The colon readings make clear that the specific location of the plethoric or prolapsed segment determines the particular pattern of secondary effects. Transverse colon involvement tends to produce pressure upward against the stomach and diaphragm and leftward toward the heart, while descending colon involvement produces pressure on the bladder and pelvic organs. Ascending colon congestion is associated with effects on the liver and the Peyer's gland region. Reading 3916-1 connects "engorging of the ascending and transverse colon" directly to toxic absorption and the failure of

excretory function through the solar plexus nerve network on the right side of the body.

Inflammation and Catarrh

Inflammatory conditions of the intestines appear throughout the readings under various designations. Catarrhal inflammation is among the most commonly identified, referring to an inflammatory process affecting the mucous membranes and characterized by excessive mucous production, sloughing of the mucous surface, and impaired secretory function. Reading 3798-1 describes "inflammation of a catarrhal character, with sloughing of the mucous membranes of the intestines" extending from the junction of the small and large intestine throughout the colon. Lacerations — tears in the mucous membrane — are identified as a more severe category, with reading 3772-1 describing "laceration of the lower intestines" that had "reopened here from inflammation, produced from above," extending through the ascending colon and producing hemorrhage.

Intestinal Flu and Its After-Effects

The readings identify a specific condition they term "intestinal flu" — a systemic infection settling particularly in the intestinal tract — and give detailed attention to its after-effects as a source of persistent chronic disorder. The distinguishing characteristic of intestinal flu, in the readings' account, is that the infectious process leaves dross material — dead tissue, residual inflammation, disturbed secretion — lodged in the intestinal tract, where it continues to produce systemic disturbance long after the acute phase has passed. Reading 464-30 warns that "the condition arises from an acute attack of intestinal flu; and, as combined with the congestions will, unless there are measures taken, leave such drosses as to be disturbing to the body." The remedy consistently involves cleansing of the

intestinal tract through colonics or enemas and restoration of normal secretory activity. Inflammatory bowel disease (and particularly ulcerative colitis) is associated with intestinal flu and its after-effects.

Plethora and Engorgement of the Colon

Beyond the general categories of inflammation, catarrh, and adhesion, the colon readings describe a distinct pathological condition the readings term a "plethoric" condition or "plethora" — an engorgement or over-fullness of a segment of the colon with accumulated contents, mucus, or toxic material, distinguished from simple constipation by the degree of distension and pressure effects on neighboring organs and circulation. Reading 998-1 describes the situation with precision: "In the transverse colon and the descending colon there is this condition. The engorgement is in the transverse. Hence the distress that is felt at times in the side and across the abdomen." Reading 133-3 describes how plethora and prolapsus together in the transverse colon produce toxic force, pressure on the kidney and bladder area, and even uremic poisoning, with swelling in the lower extremities, puffiness under the eyes, engorgement about the waistline, and elevated blood pressure.

Lower Colon and Rectal Nerve Supply

The readings specifically identify the sacral, coccygeal, and lower lumbar nerve centers as governing the activity of the lower colon and rectum. Reading 255-1 describes how disturbance "in the coccyx and in the sacral — producing in the vegetative system that of a contraction of the muscular forces, as produce the movements through the system, bring for that contraction of the muscles in the lower portion of the alimentary canal, as to produce a SEDATIVE reaction" — meaning constipation. Reading 261-1 refers to the "lower end of the colon" being "low or slow in its activity, owing to lack of the impulses from the sacro-iliac and the coccyx end of the nerve

forces. Not true paralysis, but lack of that impulse for activity; rather that tendency for prolapsus." The upper and middle colon, by contrast, receive their nerve supply primarily from the solar plexus and its mesenteric distribution, and from the dorsal vertebral centers in the mid-dorsal region.

Reflex Effects of Intestinal Pathology

The readings treat intestinal disturbance as one of the most prolific sources of reflex effects in the entire body. The mechanism is straightforward in the readings' framework. The intestinal tract communicates with both the sympathetic and cerebrospinal systems through the solar plexus and mesenteric ganglia. Pathological conditions within the intestinal wall send abnormal impulses through these channels to every corner of the body. Trouble "through the intestinal canal and especially the lower part of the digestive tract the small intestines and the colon" produces by reflex the disturbances experienced in "the upper part of the body, the head, the facial muscles, the nerves in the neck, trouble along the upper dorsals and lower cervical vertebra" (3798-1).

Among the most significant reflex effects is the impact of intestinal pathology on the kidneys. The readings describe a consistent pattern in which failure of the intestinal eliminative function imposes an excess burden on the kidneys, which are called upon to excrete through the urine what should have been expelled through the bowel — with reading 3798-3 also describing the reverse pathway, poisons backing up from the kidney into the system through the sympathetics when intestinal stagnation is present. This bidirectional relationship between intestinal and renal elimination is a consistent feature of the readings' pathological framework. The heart is also frequently mentioned. Both the transverse and descending colon, when prolapsed or plethoric, produce pressure

effects on the cardiac circulation and heart action — not organic heart disease, but functional disturbance mediated through the circulatory pressure of an over-full colon against the diaphragm and left-side circulation (998-1; 265-11). The bladder is repeatedly identified as a secondary target of colon pressure, with reading 265-7 stating simply that when the plethoric condition in the colon is reduced, the pressure on the bladder will be removed.

Modern Context

The anatomical nomenclature employed by the readings — duodenum, jejunum, ileum; ascending, transverse, and descending colon; caecum — corresponds precisely to that of modern anatomy, and the readings use these terms with consistent accuracy. The three-coat description of the intestinal wall given in reading 3798-3 corresponds broadly to the three histological layers recognized in modern anatomy: the mucosa (innermost), the submucosa and muscularis (middle), and the serosa or adventitia (outer). The readings' placement of the intestinal nerves within the outer coat corresponds approximately to the location of the myenteric plexus (Auerbach's plexus), which lies between the two muscular layers of the intestinal wall and governs peristalsis — though the readings do not use this term. Nor do they mention the “enteric nervous system,” preferring the traditional “vegetative” nervous system designation when discussing intestinal innervation.

The “Peyerian” or “Peyer's glands” identified in the readings correspond to Peyer's patches in modern anatomy — aggregated lymphoid nodules found principally in the ileum and jejunum of the small intestine. Peyer's patches are recognized in modern immunology as important sites of antigen sampling and immune surveillance of the intestinal contents. Their role in assimilation as described in the readings does not have a precise modern

equivalent, but their proximity to the lacteal absorptive system in the intestinal wall makes their association with assimilation in the readings' framework functionally coherent.

The readings' concept of thinned intestinal walls producing systemic toxicity through abnormal absorption corresponds in broad terms to the concept of increased intestinal permeability — sometimes colloquially called "leaky gut syndrome" — which has attracted significant research attention in recent decades. Modern research has linked increased intestinal permeability to a range of systemic conditions including inflammatory bowel disease, autoimmune disorders, and certain skin conditions, a correspondence that resonates with the readings' description of thinned walls producing rash, nervous disturbance, and broad constitutional impairment (Di Vincenzo et al., 2023).

The readings' concept of auto-intoxication — the systemic absorption of toxic material produced by stagnant intestinal contents — was a prominent and widely accepted medical concept in early twentieth-century medicine, actively discussed in the osteopathic, naturopathic, and mainstream medical literature of the period from which most of the readings emerged. While the specific theory of auto-intoxication fell from favor in mid-twentieth-century medicine, aspects of the underlying concern — the relationship between intestinal microbiota, mucosal integrity, and systemic health — have returned to prominence in contemporary research on the gut microbiome and its systemic effects (Person & Bernhard, 1986; Swank & Deitch, 1996).

The concept of intestinal adhesions as a source of systemic and neurological disturbance is recognized in modern surgery and gastroenterology, though primarily as a post-surgical complication. The readings' broader use of adhesions — including those arising

from prior inflammation or injury without surgery — as a pathological mechanism affecting nerve and blood supply anticipates current understanding of the clinical consequences of intra-abdominal adhesions (Bordoni et al., 2023; Tulandi et al., 1998).

The readings' "mesenteric system" most closely corresponds to what modern neurogastroenterology calls the enteric nervous system (ENS) — the intrinsic nerve network embedded in the wall of the gastrointestinal tract, organized primarily into Auerbach's myenteric plexus and Meissner's submucosal plexus. The ENS is capable of governing gastrointestinal function independently of the central nervous system. The readings' description of the mesenteric system as the pathway by which spinal nerve disturbances communicate to the digestive organs, and by which intestinal pathology generates distant reflex effects, corresponds to the modern understanding of the bidirectional gut-brain axis, through which the ENS and the central nervous system continuously signal one another via vagal and spinal afferent pathways (Mathias, 2018).

The sacrococcygeal and lower lumbar nerve supply to the terminal colon and rectum identified in the readings corresponds to the sacral parasympathetic innervation (S2–S4) and lumbar sympathetic supply recognized in modern neuroanatomy as governing motility in the descending colon, sigmoid, and rectum, including the defecation reflex coordinated through the sacral spinal cord.

4.6.3 Lacteal Ducts (Lacteals and the Lacteal System)

Overview

The lacteal ducts occupy a position of unusual significance in the readings' account of the digestive system. While they receive less frequent mention than the stomach, colon, or liver, the readings address them with a degree of anatomical precision and

physiological specificity that makes their treatment distinctive. More importantly, lacteal duct pathology — specifically the formation of adhesions in the lacteal duct area — is identified across a substantial body of readings as the primary cause of one of the most serious conditions addressed in the physical readings: epilepsy and related forms of nervous system incoordination.

The readings use several overlapping terms for the structures in question: "lacteals," "lacteal ducts," "lacteal tubes," "lacteal glands," and even "lacteal system." As the discussion below makes clear, these terms refer collectively to a system of absorptive and transport vessels in the small intestine rather than to a single discrete organ. The readings treat this system as a functional unit whose integrity is essential to proper fat assimilation, to the maintenance of lymph circulation through the abdominal region, and — most critically — to the coordination between the sympathetic and cerebrospinal nervous systems in the lower abdomen.

The lacteal duct area in the readings is more than an absorptive mechanism. It is also a nerve center — the "umbilical and lacteal duct plexus" appears repeatedly as a specific anatomical location for both diagnostic and therapeutic attention — and its pathological disruption sets in motion a chain of consequences that can reach from the abdominal viscera to the base of the brain.

Anatomy

The Structure of the Lacteal Ducts

The readings provide several explicit anatomical descriptions of the lacteal ducts, the most detailed of which occurs in reading 2153-4: "There are, to be sure, lacteal ducts. There are the strings or ducts all through the upper portion of the alimentary canal, or jejunum; but the larger patch or area is that lying just below the lower end of the

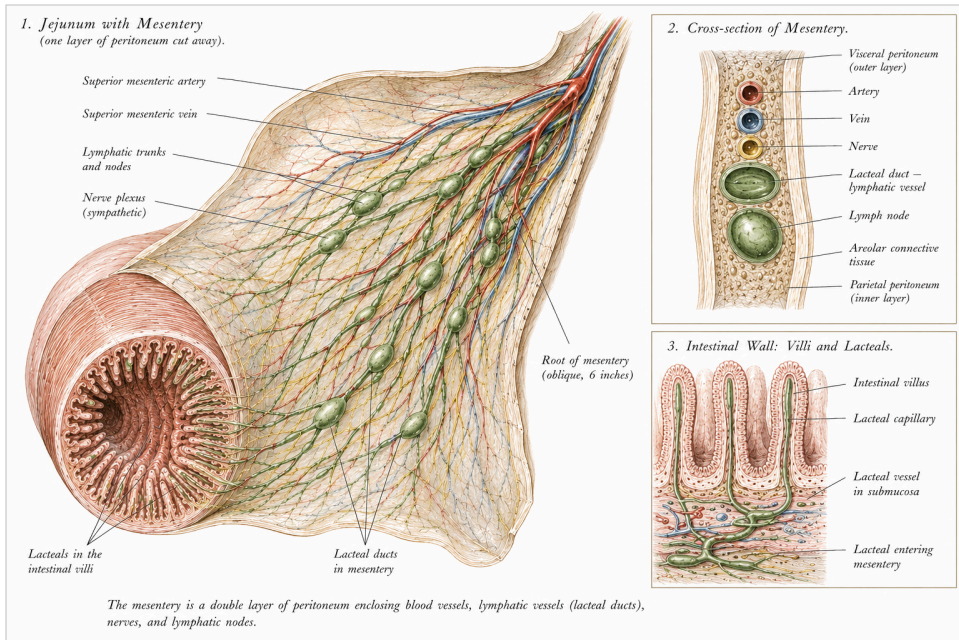


Fig. 4.6.3a. Jejunum with mesentery and lacteal ducts (lymphatic vessels). Panel 1: The jejunum is shown in cross-section at left, with lacteals visible in the intestinal villi. One layer of peritoneum is cut away to reveal the mesenteric contents: lacteal ducts (green), arteries (red), veins (blue), and nerve plexus (yellow), converging toward the root of the mesentery at the upper right. Lymph nodes appear as oval swellings along the lacteal ducts. Panel 2: Cross-section of the mesentery showing the dual peritoneal layers (visceral and parietal) encasing the artery, vein, nerve, lacteal duct (lymphatic vessel), lymph node, and areolar connective tissue. Panel 3: Detail of the intestinal wall showing the villus, lacteal capillary, lacteal vessel in the submucosa, and lacteal entering the mesentery.

The mesentery is a double layer of peritoneum enclosing blood vessels, lymphatic vessels (lacteal ducts), nerves, and lymphatic nodes.

Figure generated with ChatGPT (OpenAI, 2026) using a prompt developed by D. McMillin based on Sobotta, J. (1906). *Atlas and text-book of human anatomy*. W.B. Saunders. AI-generated illustration; not a reproduction of the original Sobotta plates.

duodenum, and where same EMPTIES into the jejunum, see? THIS patch is not only an INTERNAL activity but an EXTERNAL, that makes for the production of assimilation." This passage identifies two anatomical features: a distributed network of smaller ducts throughout the jejunum, and a more concentrated area or "larger

patch" at the duodenojejunal junction. The characterization of this larger patch as having both an "internal" and an "external" activity suggests the readings' awareness that the lacteal system involves structures both within the intestinal wall and extending outward into the mesentery.

Reading 536-1 identifies "the lacteal ducts, and especially in the lacteal tubes" as the structures of lipid assimilation. When they become inactive, "no fats of ANY nature are assimilated by the system." Reading 487-2 describes the "perineum of the center covering the lacteal glands that supply the blood in the chyle formation" — identifying the lacteal glands as the sites where chyle, the fat-bearing lymphatic fluid, is produced. The term "chyle" itself appears in the readings in the context of lacteal function, as in reading 501-2, which speaks of adding elements "to the chyle of the lacteal system."

Location: The Right Side of the Abdomen

The readings consistently locate the lacteal duct area on the right side of the abdomen, and this localization is clinically significant because it is the location of the abdominal cold spot in idiopathic epilepsy associated with lacteal duct pathology. Reading 1025-2 describes "a lesion in the lacteal duct area, from an injury there in times back; this the right side, just below the liver area." Reading 3082-1 gives precise landmarks: "a hand's breadth from the navel center to the right, and two fingers up on the body from that point." Reading 3565-1 locates the lesion as lying "in coordination with the gall duct and the entrance of the duodenum to the jejunum." Multiple readings associate the lacteal duct area with the lower portion of the liver, the gall duct, the caecum, and the ascending colon — all structures concentrated on the right side of the abdomen — creating an anatomical territory that the readings treat as a

functional unit. The repeated prescription of castor oil packs "from the lower portion of the liver to the upper portion of the hip itself" (567-4) maps this territory from the lower right rib margin to the right iliac crest, broadly corresponding to the anatomical location of the ascending colon, caecum, ileocecal junction, and the mesenteric structures of the lower small intestine.

The Lacteal Duct Plexus and Its Nerve Connections

The readings identify a specific nerve plexus associated with the lacteal duct area — referred to variously as the "umbilical and lacteal duct plexus," the "umbilicus and lacteal duct center," or the "lacteal duct plexus." This plexus functions as a node of sympathetic nerve activity in the right lower abdomen, connecting the intestinal lacteal system to the broader sympathetic and cerebrospinal networks. Reading 210-1 identifies the 9th dorsal vertebra as the spinal center whose impingement produces disturbance in the lacteals: "the reaction that exists in the 9th dorsal, where the impingement causes, and has produced, in the lacteals, that clogging of the supply that should flow in the lacteal ducts." Reading 3519-1 identifies the reflex pathway as running from "the lacteal duct area" through "the 9th dorsal center to the 6th dorsal and 1st and 2nd cervical." Reading 744-1 traces the pathway still further, describing how adhesions in the lacteal ducts and caecum area "prevented the adrenals and the lacteals throughout the system from coordinating with the pineal, and especially the lyden glands in the lower portion of the brain that coordinate with the locomotions of the body," with the direct reaction occurring "from the 1st and 2nd cervical."

This multi-level reflex pathway — from the lacteal duct plexus in the abdomen through dorsal and cervical vertebral centers to the brain stem and endocrine glands — is one of the most elaborate neurological chains described anywhere in the readings, and it

forms the anatomical basis for the readings' account of how abdominal lacteal duct pathology can produce seizures and neurological incoordination.

Physiology

Fat Assimilation and Chyle Formation

The primary physiological function of the lacteal system is the assimilation and transport of fats. Complete failure of fat assimilation is the direct consequence of inactive "lacteal tubes," as reading 536-1 states. Dietary excess of "sweets" and "starches" can trigger contraction in the lacteal duct area (3519-1), and the readings frequently advise dietary modifications in cases of lacteal duct pathology to reduce the burden on the system. The lacteal ducts are also understood as a critical link between the chemical transformation occurring in the stomach and duodenum and the actual delivery of nutritive material to the blood and lymph circulation. When the lacteals are impaired, assimilation fails not merely for fats but for the broader nourishment of the body — blood impoverishment and anemia are among the systemic consequences, as reading 1061-1 demonstrates: "there are the indications of an impoverishment, owing to the distressed conditions that have existed in the inability of the proper assimilations. And these arise in the major part from the adhesions in the lacteal ducts."

Lymph Circulation Through the Lacteal Area

The lacteal system is also described as a component of the lymph circulation, and the maintenance of adequate lymph flow through the lacteal area is treated as a condition of health. Reading 567-7 describes how adhesions "tend to become dried more; not sufficient lymph circulation, through lack of sufficient of CONCERTED activity or of the exercises of the body." The drying or stagnation of

The Lacteal System

1. Lacteal vessels emerging from the mucous surface of the intestines.
2. First order of mesenteric glands.
3. Second order of mesenteric glands.
4. The great trunks of the lacteals emerging from the mesenteric glands and pouring their contents into
5. The receptacle of the chyle.
6. The great trunks of the lymphatic, or general absorbent system, terminating in the receptacle of the chyle.
7. Thoracic duct.
8. Termination of the thoracic duct
9. The angle formed by the union of the internal jugular vein with the left subclavian vein.

(from Trall, R. T. (1854). *The New Hydropathic Cook-Book*. New York, p. 142 - public domain).

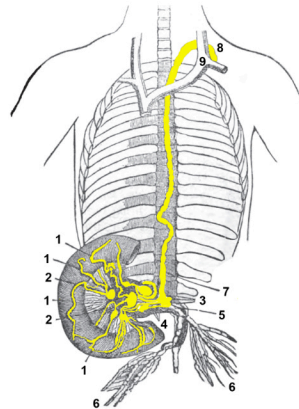


Fig 4.6.3c The lacteal system per Trall with lymph vessels (lacteal ducts) colored yellow. Numbers 1-4 best represent the lacteal ducts as described in the readings. Lacteal duct adhesions can cause nervous system incoordination that reflexes to the brain resulting in epileptic seizures associated with "true epilepsy."

lymph flow through the lacteal region has consequences for both assimilation and nerve coordination. Reading 185-1 states that "in the intestinal tract, and especially through the lacteal ducts, is found much of a reflection of condition in the liver" — identifying the hepatic circulation as intimately linked to lacteal function.

Glandular Coordination

The readings describe the lacteal system as serving a function beyond mere absorption — it participates in a glandular coordination network connecting the abdominal digestive glands (liver, pancreas, spleen, adrenals) with the endocrine glands of the nervous system, particularly the pineal and Leydig (lyden) glands. Reading 744-1 identifies this coordination explicitly: adhesions in the lacteal ducts prevent "the adrenals and the lacteals throughout the system from coordinating with the pineal, and especially the

lyden glands." Reading 2153-4 describes the normal pathway as running from "the lacteal duct through the adrenals and their reaction to the pineal" — a functional axis connecting abdominal assimilation to the neurological and endocrine governing centers of the brain. This concept of a lacteal-adrenal-pineal axis has no direct modern equivalent but reflects the readings' broader understanding of the body as a hierarchically organized system in which abdominal physiological events communicate upward through the nerve and endocrine systems to the highest brain centers.

Pathology

The Formation of Adhesions

The most commonly identified pathological condition of the lacteal system is the formation of adhesions — bands or areas of scar-like tissue that adhere to or constrict the lacteal ducts, impeding both their absorptive function and the nerve impulses that pass through the lacteal duct plexus. The readings describe adhesions forming through several distinct mechanisms across many readings addressing this condition. Fever and its after-effects are identified as a cause in several readings: reading 561-1 describes how illness with high temperature during early childhood left a stricture affecting the lacteal ducts "that affects primarily the caecum and the area as in the ascending colon." Spinal injury producing vasomotor reflex to the abdomen is identified in other readings — reading 1980-1 describes how a spinal lesion "caused a slowing of the circulation through the areas of the lacteal ducts, thus producing a COLD area there, that has produced a partial adherence of tissue" — explicitly linking reduced circulation to the cold spot and tissue adhesion. Direct physical injury to the abdomen is identified in readings 1025-2 and 2276-1. Developmental factors and nutritional deficiency are also identified in various readings.

The common thread in all these causative mechanisms is reduced circulation through the lacteal duct area. Whatever the initiating cause, the final pathological pathway runs through circulatory stagnation — when blood and lymph flow slow in the lacteal region, the tissue cools, adhesion forms, and the nerve impulses that should pass through the area are interrupted or deflected.

The Abdominal Cold Spot

One of the most distinctive and clinically specific features of lacteal duct pathology is what the readings describe as a "cold spot" — a palpable area of reduced temperature on the right side of the abdomen, associated with slowed circulation in the lacteal duct and caecum area. Reading 567-4 states the diagnostic principle categorically: "From EVERY condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum." This statement makes the cold spot a defining diagnostic marker for idiopathic epilepsy in the readings' framework. See Chapter 5 (Epilepsy) and Appendix D for additional details on the lacteal system, lacteal duct adhesions, and the abdominal cold spot in epilepsy.

The cold spot is detectable by direct palpation, as reading 251-1 explains: "may be found by holding the hand (when warm, of course) over the caecum area, and SEE the difference in the temperature of that particular area from the lack of circulation." Reading 3082-1 associates the cold spot with a specific moment in the seizure sequence: "First a tremor is caused through the body. At the time a very cold spot may be found at the lacteal duct — the main lacteal duct center." Reading 561-1 instructs that "when there is the spasm to the head, or when the circulation between the liver and the heart is affected, if the hand is placed upon the caecum and the area

about the lacteal ducts it will be found that there is a COLDNESS there — though the body may not be aware of same."

Several readings suggest the cold spot is not continuously present but appears in association with seizure activity or episodes of circulatory change. Inadequate physical exercise allows the adhesions to "become dried more" and lymph circulation to diminish, implying that the cold spot intensifies under conditions of physical inactivity or circulatory stagnation (567-7). The readings also identify a secondary cold spot at the hypogastric center, with reading 3082-1 noting that "at the time a very cold spot may be found at the lacteal duct — the main lacteal duct center. Also there may be found then a cold spot at the hypogastric center."

Consequences of Lacteal Duct Adhesion: Nervous System Incoordination

When adhesions form in the lacteal duct area, the primary pathological consequence is not simply impaired fat absorption — it is a disruption of the nerve coordination between the sympathetic and cerebrospinal systems. Reading 1025-2 gives the mechanism with unusual clarity:

... the lesions — or adhesions AND lesions — in the lacteal ducts are the basic cause for the disturbance in the nervous system. And these arise from the inability of the assimilating system to function with the sympathetic nervous system in its reaction to the nerve reflexes or impulses. For these conditions, as we find, exist: When there is an expression or activity from the sympathetic nervous system, or the sensory system that responds through the sympathetic nerve system, we find there is the movement or impulse to and from the brain centers themselves. Then with a lesion or adhesion, the impulse is cut off — or deflected. (1025-2)

Reading 3565-1 describes the consequence of this deflected impulse: "There is caused what might be termed a short circuit to the wave responses in the impressions to reflexes in brain, causing these centers to produce in the locomotories, spasmodic seizures." Reading 2991-1 traces the consequence further: "a lesion in the area about the upper or larger lacteal duct center. This, with the contractions it has produced between the sympathetic and cerebrospinal systems, has formed a break, or an adherence through a break, in the medulla oblongata — or the base of the brain."

The medulla oblongata is identified in several readings as the critical relay point through which the abdominal reflex from the lacteal duct area reaches the brain. Reading 2153-4 describes "that break between the cerebrospinal and the sympathetic or vegetative nerve system, that coordinates from the lacteal duct through the adrenals and their reaction to the pineal; causing the spasmodic reaction in the medulla oblongata, or that balance at the base of the brain." The readings are emphatic that the brain itself is not the primary site of the disorder: "There are NO brain lesions," reading 2153-4 states, "but there is that which at times hinders the coordination between the impulses of the body and the normal physical reactions." When reading 1025-2 is asked directly whether the brain condition is primary or reflex, the answer is: "As we find, and as indicated, the accumulations that have been there are rather reflex — and are PRODUCED by the condition in the lacteal duct area."

Systemic Consequences Beyond Seizures

Lacteal duct adhesions produce consequences throughout the body beyond the specific seizure mechanism. Reading 210-1 describes how impingement at the 9th dorsal affecting the lacteals produces effects on the heart action, the hepatic circulation, the liver and kidneys, the hypogastric and pneumogastric plexuses, and the head

— "producing this hallucination, for the depression becomes then in the central portion at base of brain." Puffiness under the eyes is produced by "pressures produced in the lacteal duct area, by this change that occurs in the incoordination or inactivity of the superficial circulation with the internal" (1140-1). Reading 704-1 associates lacteal duct adhesion with a form of anemia "produced by the effects of the distortion in the assimilating forces of the body itself," with contractile effects on the nervous system and erratic pulsation. The readings thus treat lacteal duct adhesion as capable of producing a wide spectrum of systemic dysfunction, from digestive impairment through cardiac disturbance to neurological incoordination — with the specific presentation depending on the degree of adhesion, its precise location, and the nerve pathways most directly affected.

Historical and Comparative Context

The use of the term "lacteal ducts" and the broader concept of the "lacteal system" in the readings reflects the medical and anatomical language of the late nineteenth and early twentieth centuries, when these terms were in common professional use. Historical anatomical sources describe the lacteal vessels as a distributed network extending from the intestinal villi through collecting ducts into the mesenteric lymphatics and ultimately to the thoracic duct. Trall (1854), in his description of the lacteal vessels, identifies them as beginning in the mucous surface of the small intestine, forming progressively larger branches that "anastomose freely with each other, forming a network," passing between the mucous and muscular coats, perforating both coats, and passing to the exterior of the intestine where they run within the layers of the mesentery toward the cisterna chyli and thoracic duct (Trall, 1854, p. 140). This description closely matches the readings' identification of "strings or

ducts all through the upper portion of the alimentary canal, or jejunum" leading to a larger central area at the duodenojejunal junction (2153-4). The term "lacteal system" encompassing this entire absorptive and transport chain was standard in the anatomical literature of the period (Knox, 1824; Bryan, 1845; Trall, 1854; Gulliver, 1863) and remains in contemporary use (Rudrappa & Paul, 2018).

The readings acknowledge some ambiguity about the precise anatomical boundaries of the lacteal ducts, noting in 2153-4 that "there may be many questions as to the exact area of the ducts, even according to some anatomists for they have changed their ideas of people, and yet people haven't changed a very great deal!" — a characteristically wry acknowledgment of ongoing anatomical debate while affirming that the structures themselves are real and consistent.

Modern Context

In modern anatomy and physiology, the lacteals are specialized lymphatic capillaries within the villi of the small intestine, particularly concentrated in the jejunum and ileum, where they absorb dietary lipids in the form of chylomicrons and transport them as chyle through a progressive system of collecting vessels — from the intestinal lacteals through the submucosal lymphatic network, into mesenteric collecting lymphatics, to the cisterna chyli, and finally into the thoracic duct, which empties into the left subclavian vein. This constitutes the "lacteal system" as described in both historical sources and the readings. Nearly all dietary lipid is absorbed through this pathway rather than directly into the portal blood supply (Dixon, 2010), making the lacteal system the primary route for fat-soluble nutrient delivery to the body.

The readings' description of "no fats of ANY nature" being assimilated when the lacteal tubes are inactive (536-1) corresponds precisely to modern understanding. Complete disruption of lacteal function would produce a clinical picture analogous to intestinal lymphangiectasia, a condition in which impaired lymphatic transport from the gut causes fat malabsorption and protein loss, with resulting systemic nutritional impairment.

The readings' concept of a "larger patch or area" of lacteal activity "just below the lower end of the duodenum, and where same EMPTIES into the jejunum" (2153-4) corresponds anatomically to the region of the duodenojejunal flexure, where the concentrated Peyer's patches and the dense submucosal lymphatic plexus of the upper jejunum represent the most active absorptive territory of the lacteal system. This is also the region where the superior mesenteric artery and its associated mesenteric lymphatics are most densely organized — making it functionally the hub of the lacteal transport network.

The abdominal cold spot described in the readings has no established equivalent in modern diagnostic practice, but the underlying physiological principle — that impaired circulation through a specific abdominal region would reduce local tissue temperature — is consistent with modern understanding of regional circulatory physiology. Modern research has demonstrated thermographic differences in abdominal surface temperature corresponding to underlying visceral conditions, suggesting that the readings' cold spot concept is not physiologically implausible (Uematsu et al., 1988).

The readings' account of lacteal duct adhesions producing nervous system incoordination through the deflection of sympathetic-cerebrospinal impulses at the medulla oblongata corresponds at a general level to modern understanding of the gut-brain axis and the

afferent signaling pathways through which abdominal visceral events communicate with the central nervous system via the vagus nerve and spinal afferents. The specific mechanism — adhesions deflecting nerve impulses to produce a "short circuit" at brain relay centers — has no precise modern equivalent, but the concept of abdominal pathology generating abnormal central nervous system signaling is consistent with contemporary neurogastroenterology. The role of the medulla oblongata as a critical relay between ascending visceral signals and higher brain function is well established in modern neuroanatomy. It is the site where the vagal afferent pathways from the gastrointestinal tract synapse in the nucleus tractus solitarius, which in turn projects to limbic, autonomic, and cortical centers (Cutsforth-Gregory & Benarroch, 2017).

The readings' association of lacteal duct adhesions with epilepsy represents a distinctive and clinically specific causal hypothesis that has no direct counterpart in modern epileptology, which focuses primarily on cortical and subcortical mechanisms. However, the readings' insistence that the brain lesions in such cases are "rather reflex — and are PRODUCED by the condition in the lacteal duct area" (1025-2) positions the condition as a form of peripheral visceral pathology generating secondary central nervous system dysfunction — a concept that resonates with emerging research on the relationship between gut microbiome disturbance, intestinal inflammation, vagal signaling abnormalities, and seizure susceptibility. The readings' approach does not exclude the possibility that modern diagnostic methods might detect a secondary brain lesion — reading 1025-2 acknowledges that such accumulations may be found "there" — while insisting that the source and therefore the proper therapeutic target is abdominal rather than cerebral.

4.6.4 The Gallbladder

Overview

The gallbladder appears in the readings as a smaller but functionally significant organ whose condition is inseparable from that of the liver with which it is anatomically and physiologically united. The readings treat the gallbladder and its associated duct system as a channel through which a critical component of hepatic secretion reaches the digestive tract, and its impairment — whether through inflammation, congestion, sediment formation, or obstruction — as a source of systemic consequences extending well beyond the local discomfort of a gallbladder attack.

A defining feature of the readings' treatment of the gallbladder is their consistent insistence on the organ's relationship to the liver. The readings do not treat the gallbladder as an independent organ but as, in the words of reading 557-4, "a portion of the liver, you see." This anatomical framing shapes everything that follows: the gallbladder's function, its pathology, its treatment, and the systemic consequences of its failure are all understood within the context of the hepatic system as a whole.

Anatomy

The Gallbladder as Part of the Liver

The readings consistently describe the gallbladder as organically continuous with the liver rather than as a separate organ attached to it. "The gall bladder, of course, is a portion of the liver, you see" (557-4) appears as a matter-of-fact clarification rather than a claim requiring elaboration, suggesting the readings regard this anatomical unity as self-evident. When asked whether the gallbladder is the source of infection in a particular case, reading 1663-3 responds: "It is as much the disturbance through the

functioning of the liver itself AS the gall duct — which they combine, of course, to make the disturbance." The clinical implication is that gallbladder disease and liver dysfunction are rarely separable in the readings' account; disturbance in one propagates readily to the other.

Reading 557-6 illustrates the readings' habitual use of the functional/organic framework applied to the gallbladder-liver relationship. When asked whether the liver is organically involved alongside the gallbladder, the response distinguishes clearly — "The liver in its excretory functioning is involved; not organically but functionally, with — of course — the gall bladder being the area under distress." The liver's involvement is functional — its excretory output is impaired — while the organic distress is localized in the gallbladder itself.

The Gall Duct as the Channel of Hepatic Secretion

Reading 635-4 provides the most explicit anatomical-functional statement about the gall duct: "When there is the activity of the liver with the digestive forces active in system, it becomes necessary for a secretion from the liver to enter into the flow from the stomach proper into the chyle for the proper assimilations, and the gall duct or gall bladder is that channel through which a portion of this secretion passes." The gallbladder and gall duct are characterized as the conduit through which hepatic secretion enters the digestive stream — specifically into the chyle — for the purpose of assimilation.

Several readings identify the gall duct and the lacteal duct as lying in close anatomical proximity and as jointly contributing to the assimilative processes at the duodenal-jejunal junction. Reading 907-1 describes how "the cellular force here, or the glandular activity, draws from the spleen, pancreas and the juices or the excretory

functioning of the liver, in the activity of assimilation with the drainage forces from the lacteals" — placing gall duct function squarely within the cooperative activity of the hepatic-pancreatic-lacteal system. Reading 3565-1 confirms the anatomical proximity of these structures, identifying a lesion as "lying in coordination with the gall duct and the entrance of the duodenum to the jejunum."

The Neck of the Gallbladder

Reading 294-125 identifies "the neck of the gall bladder itself" as the site of pathological coagulation and extra secretion, demonstrating the readings' awareness of the gallbladder's internal structure, including the narrowed outlet region where obstructions and congestions most readily form. Reading 1623-4, when asked whether tenderness in the gallbladder region is due to disease of the gallbladder or to the celiac ganglion lying beneath it, gives a nuanced anatomical answer: "we find it is a condition in the gall DUCT; not so much in the bladder nor in the area UNDER same, — save sympathetically, — as indicated by the activity of this upon the muscular forces about the end of the duodenum, and the reflex to the pylorus." This response distinguishes between the gallbladder itself, the gall duct, and the underlying celiac ganglion as potential sites of pathology, showing both anatomical precision and awareness of the sympathetic nerve structures in the region.

Nerve Supply to the Gallbladder

The readings identify the nerve supply to the gallbladder as arising from the dorsal vertebral centers, specifically the 9th to 11th dorsal area. Reading 2355-1 states that nerve impulses "radiating from the 9th to the 11th dorsal center in the plexus as governs the glands of the system through the activity of the juices from the digestive functioning system" affect "both the pancrean and the gall bladder in the effect of the juices as are necessary for assimilation." Reading

5510-2 identifies the condition of the gallbladder and gall duct as "not so distressing as is the nerves from the radial centers in 9th and 10th region as related to same" — attributing the principal disturbance not to the organ itself but to its nerve supply from the mid-dorsal region. This is consistent with the readings' pervasive principle that organ function depends on adequate nerve incentive and that spinal center lesions can produce organ dysfunction without any primary organic pathology in the organ itself.

Physiology

Secretory Function: Bile as Digestive Secretion

The readings characterize the gallbladder's physiological role primarily in terms of its contribution to the secretory activity of the hepatic system. Hepatic secretion — bile — passes through the gall duct into the intestinal tract where it acts upon the food mass being processed from the stomach, entering "into the flow from the stomach proper into the chyle" in the duodenal and upper intestinal region (635-4). Reading 907-1 elaborates the cooperative character of this secretion. The glandular activity of the liver and gallbladder "draws from the spleen, pancreas and the juices or the excretory functioning of the liver, in the activity of assimilation with the drainage forces from the lacteals." The gallbladder is not a lone actor but a participant in an orchestrated secretory system.

Excretory Function: Eliminating Through the Alimentary Canal

Reading 464-26 identifies the gallbladder as having an excretory as well as a secretory role, describing how certain therapeutic properties "stir to activity the gall duct, the gall bladder and the liver in its secretions" in support of the "emunctory activities through the alimentary canal." The emptying of the gallbladder is thus not merely a digestive event but an eliminative one. The biliary system

serves as a route through which the liver's excretory products, including bile salts and other waste-bearing compounds, are discharged into the intestinal tract for elimination through the bowel. Reading 337-4 explicitly connects gallbladder emptying to the elimination of poisons. Osteopathic emptying of the gallbladder will "assist and aid the system in ridding from the body those poisons that are STILL carried in the lymphatic circulation, that SHOULD be eliminated through the alimentary canal."

This dual function — secretory (contributing to assimilation) and excretory (contributing to elimination) — aligns the gallbladder with the broader liver characterization that the readings develop in Section 4.6.7, where the liver is described as uniquely possessing both secretory and excretory activities simultaneously.

Pathology

Congestion and Torpidity

The most commonly described gallbladder condition is a state of congestion or sluggishness — the gallbladder accumulating material it should be releasing, becoming impaired in its emptying function, and thereby contributing both to digestive impairment and to systemic toxicity. Reading 294-184 describes how "lack of secretions in the pancreas, spleen, gall bladder and gall duct" produces "more and more torpidity" — the same term applied in many readings to the liver — with the risk of progressive deterioration requiring surgical intervention if not corrected. Reading 178-1 identifies "pains as resultant in the region OF the gall bladder" as arising from "a disturbed or cold hepatic circulation that comes and goes intermittently," linking gallbladder symptomatology to the broader condition of the hepatic circulation rather than to primary gallbladder pathology.

The readings apply the functional/organic distinction consistently to the gallbladder. When congestion is present without structural lesion, the condition is functional and reversible. When it progresses to permanent tissue change, it becomes organic. Reading 557-6 explicitly identifies the liver's involvement in a gallbladder case as "not organically but functionally" — while noting that this will change if the condition is not corrected.

Sediment Formation, Granular Conditions, and Gallstones

A progressive pathological sequence can be traced through the readings, from congestion through sediment formation to fully calcified gallstones. Reading 494-1 describes an early stage: "the gall ducts or gall bladder are choked, but not yet forming except in small crystals or sedimentations there." Reading 3523-1 describes "sediments in the gall duct areas rather than so much of a gall bladder disturbance" — locating the problem in the duct rather than the bladder. Reading 1623-3 identifies "a granular condition existed in the gall duct itself" as the consequence of "misdirected impulses" followed by metabolic slowing. Reading 315-2 describes "cretaceous formations" — chalky or calcareous deposits — "in the gall duct and gall bladder itself," representing a more advanced calcification capable of producing significant systemic toxicity through the circulation.

Fully developed gallstones producing colic are acknowledged in reading 3341-1, which describes "severe attacks of gallstone colic" and, characteristically, frames even this acute physical condition within the broader context of the individual's mental and spiritual state. Specifically, "resentments have choked up conditions within the mental self" until they produce "physical reactions in the life organ of the body through which the emotions — as well as the physical reactions — must act upon the whole being." The readings

do not reduce gallbladder disease to emotional origin but acknowledge emotional factors as part of the causal picture.

Obstruction and the Question of Surgery

The readings address the question of surgical removal of the gallbladder with notable directness. The broader therapeutic philosophy is stated clearly in reading 5671-19: "We wouldn't find that it would [help]. This would be merely removing some portion that is affected BY a condition, and NOT removing that causing same." This formulation — that the gallbladder is affected by a deeper cause rather than being itself the cause — is applied here with particular explicitness and is consistent with the readings' general principles across organ systems.

At the same time, the readings do not categorically exclude surgery. Reading 294-201 states: "If there is the sedimentary condition which has existed, and still shows some irritation and indication of disturbance through the gall duct area, and the gall bladder becoming clogged, — operate." Reading 1649-1 acknowledges that "the operative measures drained or eliminated the sediments in the duct and gall bladder itself" while noting that "these did not remove the cause." The readings' position is thus nuanced. Surgery may be appropriate when the condition has advanced beyond the reach of conservative measures, but it addresses the effect rather than the cause. The cause must still be addressed if lasting correction is to occur.

Strangulation and Systemic Consequences

A "strangulated condition in the gall bladder region" is identified in reading 5620-1 as leaving the body susceptible to malarial bacilli. This illustrates the readings' understanding that severe gallbladder obstruction weakens systemic resistance and creates conditions in

which the liver and hepatic circulation become impaired enough to allow infectious processes to take hold. Reading 882-2 traces how "disturbances in the gall duct, the gall bladder area; the overflow from the secretions of the organs for assimilation and digestion" can produce "congestion and the tendency for the centralizing or localizing of the conditions in the kidney and bladder area," demonstrating the cascade from biliary impairment to renal involvement.

The readings also identify headache, including migraines, as a reflex consequence of gallbladder disorder. Reading 2078-3 states that the gallbladder ailment is "the larger contributing factor" in migraine headaches, and that with better eliminations "these should be farther and farther apart." These reflex effects reflect the gallbladder's position within the hepatic circulatory system. When biliary excretion is impaired, toxic material accumulates in the hepatic circulation and is distributed to remote organs and systems.

Adhesions Following Gallbladder Operations

The readings address post-surgical adhesions with characteristic pragmatism. Reading 572-1, asked whether a patient has adhesions from gallbladder surgery, confirms that adhesions exist but notes they are "not the main trouble" — directing attention instead to maintaining hepatic elimination. Reading 2078-3 identifies adhesions as resulting from "tissue treated too strongly, as well as part of operative forces." This pattern — acknowledging the reality of post-surgical adhesions while emphasizing that the underlying cause has not been removed — is consistent with the readings' general caution about surgical approaches to functional conditions.

The Gallbladder in Relation to Adjacent Organs

The readings consistently treat the gallbladder not in isolation but as a node within the larger hepatic-digestive system. Its secretory output coordinates with that of the pancreas, spleen, and lacteals in producing the complete chemical environment for intestinal assimilation. Its excretory output contributes, alongside the liver's broader eliminative function, to the cleansing of the blood through the alimentary canal. Its nerve supply from the mid-dorsal region links it to the same spinal centers that govern the stomach, pancreas, and small intestine — a grouping that appears repeatedly across the physical readings as a cluster of organs jointly dependent on the 9th through 11th dorsal nerve supply.

The relationship to the lacteal duct area is particularly notable. Multiple lacteal duct readings identify the gall duct as lying in immediate proximity to the "larger patch" of lacteal duct activity at the duodenojejunal junction, and several describe lesions or adhesions affecting both the gall duct and the lacteal duct simultaneously. Reading 3565-1 describes "lesions in the greater lacteal duct that lies in coordination with the gall duct and the entrance of the duodenum to the jejunum." Reading 2286-1 describes "an adhesion or lesion in the lacteal duct, and the drainages from the canals in the areas of the duodenum, the pancreas, the spleen and the gall duct." This anatomical clustering means that pathology in the gallbladder-gall duct area frequently implicates the lacteal system, and vice versa.

Modern Context

In modern anatomy, the gallbladder is a pear-shaped sac located on the inferior surface of the right lobe of the liver, connected to the liver by the cystic duct which joins the common hepatic duct to form the common bile duct (choledochus), which then empties into the

duodenum at the ampulla of Vater. The readings' identification of the gallbladder as "a portion of the liver" reflects an accurate functional understanding. The gallbladder and liver share a common developmental origin from the hepatic diverticulum, are served by the same arterial supply, and are functionally inseparable in the production and delivery of bile.

The readings' description of bile as a "secretion from the liver" that passes through the gall duct into the chyle for "proper assimilations" corresponds to the modern understanding of bile's role in fat digestion. Bile salts produced in the liver and stored and concentrated in the gallbladder are released in response to the entry of fatty chyme into the duodenum, where they emulsify dietary fats that can then be absorbed through the intestinal mucosa and enter the lacteal system as chylomicrons. The readings' linking of biliary secretion to chyle formation and lacteal function is therefore anatomically and physiologically precise.

The progressive pathological sequence described in the readings — congestion, sediment, granular formation, cretaceous deposits, full gallstones — corresponds to the modern understanding of cholelithiasis as a progressive process in which bile supersaturated with cholesterol or bilirubin initially forms biliary sludge, which can then consolidate into frank gallstones. The readings' term "cretaceous formations" corresponds most closely to the calcium-containing pigment or mixed stones of modern biliary pathology.

The nerve supply to the gallbladder identified in the readings as arising from the 9th to 11th dorsal centers corresponds to the thoracic sympathetic ganglia at T7–T10 recognized in modern neuroanatomy as the primary sympathetic innervation of the biliary system. Reading 1623-4's identification of the celiac ganglion as lying beneath the gallbladder region and as sympathetically involved in

gallbladder tenderness is anatomically accurate. The celiac ganglion lies adjacent to the celiac artery in close relation to the biliary and pancreatic structures. Its involvement in referred pain from the gallbladder is well recognized in modern clinical practice.

The readings' position on gallbladder surgery — that the organ is "affected BY a condition, and NOT removing that causing same" (5671-19) — anticipates a concern that remains clinically relevant today. Post-cholecystectomy syndrome — in which symptoms persist or recur after removal of the gallbladder — affects a significant proportion of patients and is attributed in modern medicine to residual bile duct dysfunction, sphincter of Oddi disorder, and continued impairment of the hepatic and pancreatic systems. The readings' insistence that gallbladder disease represents a systemic condition in which the gallbladder is an affected organ rather than the primary cause corresponds to this clinical reality. Removing the gallbladder does not address the underlying hepatic dysfunction, metabolic imbalance, or spinal nerve supply impairment that the readings identify as root causes (Latenstein et al., 2019; Nam et al., 2025; Portincasa et al., 2023).

4.6.5 The Pancreas

Overview

The pancreas appears in the readings as one of the most functionally significant organs of the digestive and assimilative system, referenced directly or in tandem with associated organs in nearly every reading that discusses the hepatic or digestive system in any depth. Its prominence reflects the readings' understanding of the pancreas as performing multiple, interdependent functions. It contributes digestive juices to the processing of food in the duodenum and small intestine, participates in the regulation of sugar metabolism, and operates as part of a coordinated glandular

system alongside the liver, spleen, and gall duct that collectively govern the body's assimilative processes.

The readings commonly address this organ using the adjective "pancrean" — as in "pancrean juices," "pancrean fluids," "pancrean activity," and "pancrean secretions." The noun "pancreas" also appears throughout, and occasional uses of "pancreatic" occur in a small number of readings.

Anatomy

Position and Structural Identity

The readings do not provide extensive anatomical description of the pancreas as an isolated structure. They address it primarily in the context of its functional relationships with neighboring organs. Its position is implied in numerous readings that associate it with the duodenum, the gall duct, and the upper small intestine — placing it consistently at the level of the upper abdominal region where the hepatic-digestive axis is concentrated. Reading 4978-1 describes the pancreas as "engorged" in response to nerve impingement at "the 8th and 9th dorsal vertebra, which give the direct influence on the pancreas and the liver." Reading 2273-1 locates "heaviness around the area just a little towards the center from the liver center, or over the pancreas reaction," offering a spatial orientation consistent with the pancreas lying posterior to and medial from the liver — the anatomically correct position.

The readings do not name the head, body, or tail of the pancreas as distinct structural divisions, nor do they use the terms "islets of Langerhans" or equivalent. The organ is addressed as a functional whole, with its dual roles in exocrine secretion and endocrine regulation distinguished by what they produce and where that

production acts, rather than by any named internal anatomical subdivision.

Anatomy: Nerve Supply to the Pancreas

The readings consistently identify the 8th and 9th dorsal vertebral centers as the primary source of nerve supply and governing impulse to the pancreas, one of the most frequently repeated spinal-organ relationships throughout the physical readings. Reading 4978-1 states: "The nerve centers that show the impingement are in the 8th and 9th dorsal vertebra. These, as we see, give the direct influence on the pancreas and the liver, and this lack of incentive for normal action has brought about this creating of this existent condition in the system." Reading 584-7 advises: "About once a month have a test of the condition by one that would make a CORRECTION, osteopathically, in the cerebrospinal system; as has been first indicated, this is in the 9th dorsal center, that aids the impulse for the activity through the pancreatic system." Reading 2350-1 identifies "the 4th dorsal plexus and the 9th dorsal plexus" as the radial centers from which the pancreas and liver receive their "principal incentive for functioning."

Several readings extend the nerve supply range to include the 10th and 11th dorsal centers, and reading 817-1 identifies the "10th to the 12th dorsal area" as producing "unbalancing" of the organs including the pancreas and spleen. This slightly extended range — 8th through 11th or 12th dorsal — reflects individual variation in the readings' spinal localization while maintaining the mid-dorsal zone as the consistent governing territory.

The nature of the spinal influence is specifically described as providing the incentive for secretory activity. Reading 4978-1's formulation — "this lack of incentive for normal action has brought about this creating of this existent condition" — applies the readings'

characteristic principle: spinal lesions or subluxations do not destroy organ function but reduce the governing impulse, leaving the organ incapable of performing its normal secretory role.

The Pancreas Within the Hepatic Axis

The readings habitually group the pancreas with the liver, spleen, and gall duct as members of a tightly coordinated functional axis centered on the hepatic circulation. The phrase "liver, pancreas and spleen" appears often across many readings, representing the readings' understanding of these three organs as operating together in the production and regulation of the body's digestive secretions, metabolic balance, and blood quality. Reading 816-1 describes the disturbance in the body as arising from pressures "reacting to the cerebrospinal and the COORDINANT FORCE between the sympathetic system in the 8th and 9th dorsal center and in the 3rd and 4th dorsal center," producing "the slowing up of the impulse of the circulatory system as related to the blood and lymph supply in the organs of the pancreas, the liver, the spleen." The pancreas receives its governing nerve impulse from the same dorsal centers that govern the liver and spleen, and the consequences of impaired nerve supply are proportionally distributed across all three organs.

Reading 359-2 provides a functional subdivision of the system that assigns different digestive roles to each member of the axis:

... the activity of the spleen and pancreas and the liver, particularly, making for an inactivity of the secretions through the coordination between the pancreatic fluids for assimilating carbohydrates, and the activity of proteids and peptones in the system, and the gall activity on fats and starches in the system. (359-2)

This passage distributes digestive substrate responsibilities across the system: pancreatic fluids for carbohydrates, gall duct secretion for

fats and starches, and proteids and peptones — associated with both stomach and pancreatic action — for proteins.

Physiology

Exocrine Function: The Pancrean Juices

The primary digestive function of the pancreas is the secretion of "pancrean juices" into the duodenum and upper small intestine, where they act upon the food mass passed from the stomach. Reading 4841-1 provides the most specific description of the chemical character of the pancreatic secretion. "The secretion of the pancreatic juice is both of a lactic and lacterial state, — not acid, but between the acid and lactic state." This characterization — neither acid nor fully lactic but intermediate — corresponds to the readings' broader account of the digestive sequence in which the acid gastric mass from the stomach must be converted to a more alkaline or lactic state to be assimilated through the lacteals. The pancreas is identified as the primary agent of this chemical transformation. The same reading identifies the substrate specificity of the pancreas's contribution. The juices "acted on to the digestion by those of the liver are those that produce or digest those properties, or sugar and flesh, not acted on by those of the gastric juices of the stomach" — implying that the pancreatic juices handle the material that the gastric juices alone cannot complete.

Endocrine Function: Sugar Metabolism and Insulin

The pancreas's role in regulating sugar metabolism receives extensive treatment in the readings. Excess sugar production — "too much sugar" in the blood and urine — is consistently identified as a direct consequence of overactivity or engorgement of the pancreas, arising primarily from impaired nerve supply at the 8th and 9th dorsal vertebrae rather than from a primary organ failure. Reading

953-15 provides a direct account of the mechanism: "This [excess sugar] produced, as we see, by the over stimulus in the pancreas and the unequalized condition between spleen, liver and kidneys, forcing the excessive reaction in the emunctories of the kidneys. Hence the excessive urination and the excess as is shown at times in the drosses from kidneys." The excess sugar is thus an output of pancreatic overstimulation — too much pancreatic activity producing too much sugar — rather than the modern paradigm of insufficient insulin causing hyperglycemia.

At the same time, the readings acknowledge a deficiency form of pancreatic dysfunction. Reading 13-1 describes "the pancreatic juices are not secreted in their proper form, they, the function of this gland being laggard or slow," and other readings identify circulatory insufficiency as a cause of pancreatic underactivity. The readings thus recognize both overactive and underactive pancreatic states, distinguishing them by their consequences — overactivity producing excess sugar and weight accumulation; underactivity producing deficient digestion and malassimilation.

The word "insulin" appears in several readings. Their use of this term warrants careful attention. In several readings, editorial notations question whether "insulin" may be a transcription or hearing error for "inulin" — a plant polysaccharide found in Jerusalem artichoke — rather than the pancreatic hormone. Reading 584-7 states: "This will produce sufficient of the insulin [inulin?] (that is the greater active principle of same) to cause the pancreatic activity to assume its normal reaction." The Jerusalem artichoke is repeatedly recommended in the readings as a dietary agent for normalizing pancreatic activity in cases of excess sugar. Whether "insulin" in the readings refers to the pancreatic hormone or to the dietary inulin compound, the therapeutic implication is consistent.

Jerusalem artichoke provides a natural form of the regulating principle that supports pancreatic function without creating dependency on externally administered agents. Reading 480-39 advises: "DO NOT give the injections of Insulin, but those properties as indicated that may act with" the system — showing awareness of insulin injections as a medical intervention while preferring natural dietary approaches to support pancreatic function.

The Relationship to Weight and Metabolism

The readings identify a consistent association between impaired pancreatic function — particularly overactivity — and disorders of body composition and weight. Reading 718-1 describes how "those excesses of the system in the activities of the glands through the functioning of assimilations tend to make those tendencies towards too great an avoirdupois at times; making for those accumulations in portions of the body that become excessive to the activity of the circulatory system." Reading 322-3 identifies "a continued excess of carbohydrates in the system" as producing disturbance in the pancreas, spleen, and lacteal ducts, leading to "an alteration in the metabolism of the system." The pancreas thus operates as a metabolic governor. When in proper balance, the body maintains its proper weight and composition; when overdriven by excess dietary carbohydrates or by spinal nerve pressure, it produces metabolic imbalance expressed in excess weight, sugar accumulation, and circulatory disturbance.

Pathology

Engorgement and Overactivity

The most frequently described pancreatic pathological state is engorgement or overactivity — the pancreas producing excess secretion, particularly of the sugar-creating type, in response to

spinal pressure or dietary excess. Reading 4978-1 states plainly "the pancreas engorged." Reading 119-1 describes how an injury to the mid-dorsal centers produced a state in which "sugars are created too freely in the system, and the pancreas in its activity has become engorged, or enlarged. Not wholly as would be termed, YET, as that of the diabetic — but that BORDERING upon same." The progression toward a diabetic-like state is explicitly framed as a consequence not of primary pancreatic disease but of spinal nerve pressure producing overactivity.

Reading 296-1, when asked whether the patient still has diabetes, receives the response: "Only those conditions that arise from the overtaxing of the system as related to the activities of the pancreas. Not true diabetes." This use of "not true diabetes" distinguishes a functionally produced diabetic-like condition from an organically established diabetes mellitus.

Underactivity and Laggard Secretion

The opposite condition — insufficient pancreatic secretion — produces a different but equally significant pattern of consequences. When the pancreatic juices are insufficient, the food mass entering the duodenum does not receive the chemical transformation it requires. It remains in an acid state rather than transitioning to the lactic state necessary for proper intestinal assimilation, producing fermentation, gas, and downstream toxic accumulation. Reading 953-1 describes "the pancreatic secretions, they are lax on account of the over-strain and low hepatic circulation" — identifying circulatory insufficiency as a cause of pancreatic underactivity as well as spinal nerve impingement.

Coordination Failures and the Spleen-Pancreas Relationship

A recurring theme in the pancreas readings is the dependence of pancreatic function on proper coordination with the spleen. The spleen and pancreas are described as functioning in tandem — both contributing secretory forces to the digestive process, with the spleen providing complementary activity to the pancreas's sugar regulation. When these organs fall out of coordination — typically through impaired spinal nerve supply — the balance between sugar production, fat assimilation, and protein metabolism is disturbed throughout the system.

Consequences for Adjacent Systems

Pancrean dysfunction propagates through multiple adjacent systems. Its effects on the kidneys are particularly consistent. Excess sugar production from pancreatic overactivity passes through the hepatic circulation to the kidneys, which are then forced into excess eliminative activity, producing "excessive urination" and the appearance of sugar in the urine (953-15). The relationship between pancreatic excess and kidney burden represents, in the readings' framework, a direct pathway from mid-dorsal spinal impingement through pancreatic overactivity to renal overtaxation — a chain that explains why many readings addressing apparent kidney disorders trace the origin back to the pancreas and its governing spinal centers.

Modern Context

The pancreas recognized in modern anatomy is a mixed exocrine and endocrine gland located in the retroperitoneal space of the upper abdomen, with its head nestled in the curve of the duodenum and its tail extending toward the spleen. This is an anatomical relationship the readings implicitly acknowledge through their consistent association of the pancreas with the duodenum and their

placement of pancreatic activity at the juncture where the stomach empties into the small intestine.

The exocrine pancreas secretes digestive enzymes — including amylase for carbohydrates, lipase for fats, and proteases (trypsin, chymotrypsin) for proteins — delivered into the duodenum through the pancreatic duct. The readings' description of "pancrean fluids for assimilating carbohydrates" corresponds to pancreatic amylase; the separation of fat and starch digestion to gall duct (bile) activity and protein digestion to proteids and peptones corresponds to the modern division between biliary emulsification of fats and pancreatic protease action on proteins. Reading 4841-1's description of the pancreatic secretion as "lactic and lacterial" — intermediate between acid and alkaline — corresponds roughly to the modern understanding of pancreatic juice as distinctly alkaline, rich in bicarbonate, and functioning specifically to neutralize the acid chyme delivered from the stomach into the duodenum.

The endocrine pancreas — specifically the islets of Langerhans — secretes insulin and glucagon directly into the bloodstream to regulate blood glucose. The readings' treatment of the pancreas as a sugar-regulating organ corresponds to this endocrine function, though the mechanism is inverted in the readings' account: rather than insulin deficiency causing hyperglycemia, the readings more commonly describe pancreatic overactivity (producing too much sugar) as the primary pathological state. This difference is significant. The readings' account of spinal pressure producing pancreatic overactivity and excess sugar production more closely resembles a pre-diabetic or early type 2 scenario — insulin resistance and hyperinsulinemia with secondary hyperglycemia — than classic type 1 diabetes.

The readings' consistent use of "insulin" in close association with Jerusalem artichoke deserves specific clarification. Jerusalem artichoke (*Helianthus tuberosus*) contains significant quantities of inulin — a prebiotic dietary fiber and fructooligosaccharide — rather than the pancreatic hormone insulin. Modern nutritional research confirms that inulin from Jerusalem artichoke has measurable effects on blood glucose regulation, gut microbiome composition, and pancreatic function in persons with metabolic syndrome and pre-diabetes (Niness, 1999; Kelly, 2009). The readings' recommendation of Jerusalem artichoke for pancreatic normalization thus has a plausible biochemical basis, though through dietary inulin rather than through the pancreatic hormone insulin.

The nerve supply to the pancreas identified in the readings as arising from the 8th through 11th dorsal vertebral centers corresponds to the thoracic splanchnic nerves (greater splanchnic nerve from T5–T9 and lesser splanchnic nerve from T10–T11) recognized in modern neuroanatomy as the primary sympathetic innervation of the pancreas. The readings' identification of the 8th and 9th dorsal as the critical centers for pancreatic incentive corresponds precisely to the origin levels of the greater splanchnic nerve.

4.6.6 The Spleen

Overview

The spleen occupies a distinctive and somewhat complex position in the readings' account of the digestive and circulatory systems. It is consistently named as a member of the hepatic functional axis alongside the liver, pancreas, and gall duct. Yet the readings treat the spleen as something more than a digestive accessory. It is also understood as a blood-modifying organ of the first order, a glandular structure with both secretory and eliminative functions, a mediator between physical and mental states, and the site of a

distinctive nerve current — the "splenic force" — whose activity reaches from the abdominal organs through the sympathetic network to the brain itself.

The readings describe the spleen's functions as overlapping but distinguishable. It participates in the processing of red blood cells, in the production and regulation of white blood forces, in the coordination of digestive secretions alongside the pancreas and liver, and in the transmission of nerve impulses through the splenic circulation to the sensory and mental systems. When the spleen is functioning properly, it maintains the balance between the red and white blood elements and supports the broader metabolic coordination of the hepatic axis. When it is impaired — whether through engorgement, torpidity, hardening, or nerve incoordination — the consequences propagate through the blood supply, the digestive system, and the mental-emotional faculties simultaneously.

Anatomy

Position, Size, and Structure

The spleen is located on the left side of the upper abdomen, beneath the stomach and below the diaphragm. It is described consistently across the readings by reference to "the left side," "below the stomach," "under the edge of the ribs" on the left, and "the left side of the upper portion of the abdomen." When asked what causes soreness "in the left side, just above waist line, at lower point of ribs, a little toward the spine," reading 265-3 identifies the spleen as the source.

The readings acknowledge internal structural differentiation within the spleen, describing different conditions affecting its two ends or aspects. Reading 16-1 identifies "spleen engorged in right end, and

tendency towards atrophy in the left" — distinguishing pathological states in different regions of the organ. Reading 5426-1 describes "a plethora in the one end, and rather that of an atrophy in the other," presenting opposite conditions coexisting within the same organ. This pattern of differentiated end-conditions appears across enough readings to constitute a consistent feature of the readings' splenic anatomy.

Nerve Supply to the Spleen

The readings identify multiple spinal levels as governing the spleen's activity, with the dorsal region most consistently named. Reading 480-39 identifies "the upper portion of the 9th dorsal center" as providing stimulation for "the glandular forces of the spleen, the pancreas and the liver." Reading 1853-2 identifies "the 2nd dorsal center" as the specific location from which the spleen and liver receive their governing impulses. Reading 4354-1 places the "splenic nerve system" at "the 5th dorsal plexus." Several readings extend the spinal range. Reading 816-1 places the key centers for spleen-pancreas coordination at "the 8th and 9th dorsal center and in the 3rd and 4th dorsal center." The splenic nerve's spinal origin is thus placed across a range from the 2nd to the 9th dorsal, with different readings emphasizing different levels depending on whether the splenic, pancreatic, or combined hepatic function is the focus.

Reading 87-2 describes the spleen's "action through the system, to those of the brain, or its action to the force, or supplying of the matter to that of the rebuilding of the brain cells proper, in its nerve force here, through the solar plexus ganglia" — placing the solar plexus as an intermediate relay between the spinal nerve supply to the spleen and the spleen's ultimate influence on the brain. This pathway — dorsal vertebral center → spleen → solar plexus → brain — is one of the readings' more complex nerve pathways and helps explain why

splenic dysfunction has such wide-ranging mental and sensory consequences.

Physiology

The Spleen as a Gland

The readings explicitly identify the spleen as a gland — not merely an organ in the general sense, but specifically as a glandular structure with secretory and eliminative functions. Reading 1173-1 makes this identification emphatically: "after all the liver AND the spleen in their coordinant activity are GLANDS, yet perform a definite function as to the varied functionings IN a circulatory force as related both to the physical body AND the mental body." This glandular identity places the spleen in the same functional category as the liver — an organ that both secretes useful products into the circulatory system and excretes waste materials from it.

Blood Cell Production and Destruction

The readings assign the spleen a dual role in blood cell dynamics — both the destruction of aged or excess red blood cells and the production or regulation of the white blood forces. Reading 34-1 describes how the spleen "destroys the red blood corpuscles in the spleen itself, uses up the force that should destroy any excess." Reading 4718-1 states that in the spleen "the destruction of red blooded cells is over abundant, so this organ is enlarged to capacity in this body." On the constructive side, reading 1173-1 identifies the spleen's primary function as maintaining "a function more in accord with that balance between the red blood and white blood cellular force as related to the body-MENTAL." Reading 2674-1 describes how the splenic forces, functioning normally, act in "rebuilding the red blood and the nerve tissues, into the brain through the sensory organism." The spleen thus operates as a regulator of the blood's

cellular composition — presiding over the balance between red blood (associated with vitality, oxygenation, and tissue building) and white blood (associated with immune defense, coagulation, and emunctory activity).

Coordination with the Pancreas and Digestive Secretions

Within the digestive secretory system, the spleen functions alongside the pancreas as a contributor to the chemical processes of assimilation. Reading 1963-1, discussing a case with diabetic characteristics, states: "This is more of a spleen and a reflex condition to the activities to kidneys and of the pancreas, than true diabetic reaction. It is more of a splenic or splenetic condition than a diabetic." This characterization suggests that what presents clinically as diabetic excess sugar may, in the readings' account, originate as a splenic dysfunction rather than a primary pancreatic one. It is the spleen failing to maintain proper sugar balance in coordination with the pancreas, producing the same downstream excess without the direct pancreatic overactivity described in other cases.

Reading 3379-1 explicitly connects splenic function to both the digestive and the emotional-imaginative dimensions: "the chemical reactions between the pancreas and the spleen, in the supply of nutriment in the digestion as well as the splenic reaction to the lymph circulation that deals with the suggestive or imaginative or sympathetic body. These are a part of the functionings of the spleen." This passage positions the spleen at the intersection of the chemical (digestive secretion), circulatory (lymph), and psychological (imaginative-sympathetic) dimensions of body function.

Lymph Circulation and Emunctory Activity

The spleen participates in the lymphatic and emunctory systems. Reading 2212-1 describes the "splenic forces" as "eliminating the

force thrown out, or resisting out of the body by the liver and the splenic forces on the body" — placing the spleen alongside the liver as an eliminating organ, clearing used forces that the blood circulation brings through them. Reading 4841-2 describes how splenic conditions, when impaired, result in "carrying the poisons to the extremities and the capillary circulation in the body" — identifying the spleen as a gateway through which eliminative forces reach the capillary circulation.

The Splenic Nerve System and Spleen-Brain Axis

The readings use a specific term — "splenic force," "splenic action," or "splenic nerve system" — to describe a distinctive nerve current associated with the spleen's circulation and functioning. Reading 4354-1 identifies the "splenic nerve system" and places it at "the 5th dorsal plexus," describing it as "governing those forces as radiate from the upper portion of the pneumogastrics, as well as those of the lower hepatic circulation." Reading 4187-1 describes the "splenic action on the nerve force" as carrying thought expressions "through this power into the brain," identifying the spleen as a mediating link between the body's metabolic state and the brain's mental activity. Reading 5717-3 observes "With each thought manifested in the brain, red blood cells are destroyed in the spleen. This is in all bodies." Reading 14-1 describes "those matters produced by the action of the blood in passing, or in the circulation passing through the spleen, to produce a cellular force, used directly in the rebuilding of the cells in the brain."

The splenic nerve force is thus described as carrying signals upward from the abdominal region to the sensory organism and brain. Thus the spleen's circulatory and glandular state has a direct influence on mental clarity, emotional stability, and sensory coordination. This represents one of the most distinctive features of the readings'

account of the spleen. Its functional reach extends beyond the abdomen into the nervous and mental life of the body.

The Mental-Emotional Dimension

One of the most consistently described relationships in the spleen readings is the connection between splenic function and the mental-emotional state of the body. The readings describe a bidirectional influence. Emotional stress and mental strain impair the spleen, and splenic impairment in turn produces mental disturbances including inability to concentrate, mental sluggishness, emotional instability, and sensory aberration.

Violent anger is identified as having "brought on an over taxation of the organ and the functioning of same" (265-3). Reading 953-15 notes that "spleen's forces show the taxing of the system in mental and in active forces of brain retraction, spleen giving then an engorged condition at present." Conversely, when the spleen is engorged or impaired, mental consequences follow. Reading 761-1 describes how "the spleen with its engorgement making for periods when the body lapses almost from its memory and goes more toward those things that come through the sensory reactions, causing visions and dreams and a longing in the inner self." Reading 826-1 describes how liver-spleen-pancreas-lacteal duct disturbance "has at times made for periods when worriment, or worry in the body, has been aggravating to the whole of the system, causing periods when the least excuses would be MAGNIFIED in the mind."

Reading 1241-1 describes the emotional-physiological link in both directions: "the filling of the spleen and heart at such times" during periods of "deep emotional forces," with the cough and throat conditions representing the reflexive expression of this emotional flooding. This characterization of the spleen as both a receptor and a reflector of emotional states gives the organ a significance in the

readings' physiological framework that has no direct modern anatomical equivalent.

Pathology

Engorgement

The most frequently described pathological state of the spleen is engorgement. It is a condition in which the spleen becomes over-full, enlarged, and overstimulated, producing an excess of destructive forces upon the red blood cells and an overflow of white blood elements into the circulation. Engorgement is attributed variously to mental-emotional stress (anger, worry, anxiety), to physical toxic accumulation from impaired hepatic elimination, to infection, and to nerve incoordination affecting the blood-regulating function.

Reading 1779-5 identifies spleen overactivity as the cause of mounting white blood cells and potential progression toward leukemia: "It is caused by an overactivity of the spleen." Reading 474-1 describes a condition of "leukocythemia" — excess white blood production — in which "the affected portions are the bones or marrow, the spleen, pancreas, and the LYMPH especially in the area of the ducts of assimilation," representing an advanced state of splenic pathology involving the bone marrow and lymphatic system. In this reading the spleen engorgement is so severe that a specific warning is given not to apply the violet ray directly over it: "rub the violet ray for a few seconds over the area of the ducts of the lymph production, or the liver and the RIGHT side — not over the spleen, for this would tend to make same BURST!" — a striking statement indicating that the readings recognized a risk of splenic rupture in severely engorged cases.

Torpidity and Inactivity

The opposite condition — splenic torpidity or inactivity — is also described. Reading 957-2 describes "the functioning of same as respecting the spleen AND liver, this becomes slow and torpid," producing an increasing ratio of white to red blood cells as the spleen fails to regulate the cellular balance. The readings consistently apply the functional/organic distinction to the spleen as to the liver and other organs. Torpidity is a functional condition that is reversible if addressed. Prolonged inactivity or the accumulation of hardened tissue represents progression toward an organic change.

Hardening and Atrophy

Several readings describe a hardening process within the spleen — the development of fibrous or indurated tissue replacing normal splenic tissue. Reading 3882-1 notes that the spleen "has a tendency to become hard, it is small and drawn." Reading 4819-1 describes the left end of the spleen "tending toward hardening condition" while the right end is engorged — this dichotomy of simultaneous engorgement and hardening in different regions of the organ is one of the more structurally specific observations in the readings' treatment of splenic pathology. In addition to hardening, the readings describe splenic atrophy — a wasting or shrinkage of the organ — with reading 3882-1 describing the spleen as "small and drawn." These descriptions suggest the readings recognized a spectrum from engorgement through torpidity to atrophy, consistent with the pattern of progressive organ change described elsewhere in the readings when functional conditions are left uncorrected.

Malarial and Infectious Conditions

Several readings identify the spleen as a site of malarial or other infectious processes. Reading 221-1 describes "malarial bacilli exhibited there" alongside liver torpidity and spleen engorgement. The spleen's role in processing red blood cell breakdown products makes it a natural site for the accumulation of malarial byproducts in the readings' framework — a connection consistent with the classical association of malaria with enlarged spleen.

Systemic Consequences of Splenic Pathology

Splenic pathology propagates throughout the body through several pathways. Blood quality suffers immediately — engorgement or hyperactivity of the spleen disrupts the red/white balance, producing anemia-like conditions from excess red cell destruction or leukocyte excess from overproduction of white forces. Reading 1853-2 describes the characteristic anemia from splenic dysfunction as "that peculiar character of anemia" producing peripheral vascular consequences including threatened paresis in the extremities. Digestive function is secondarily disturbed through the impairment of spleen-pancreas coordination. Mental function deteriorates through the disruption of the splenic nerve current to the brain — producing memory lapses, inability to concentrate, emotional instability, and in severe cases, dissociative or psychotic-like states. The multiple readings connecting splenic engorgement to sensory system effects, to vision disturbances (4192-1), and to near-hallucinatory experiences (761-1) all testify to the readings' view of the spleen as a critical mediator between the body's metabolic state and its mental and sensory life.

Modern Context

In modern anatomy, the spleen is a vascular lymphoid organ located in the left upper quadrant of the abdomen, posterior to the stomach, between the 9th and 11th ribs. It is the largest lymphoid organ in the body. Modern physiology assigns the spleen two primary functions: (1) immune function — producing lymphocytes, plasma cells, and antibodies, and mounting immune responses to blood-borne antigens through its white pulp; and (2) blood filtration — removing aged, damaged, or abnormal red blood cells through phagocytosis by macrophages in its red pulp.

The readings' assignment of red blood cell destruction to the spleen corresponds precisely to the modern understanding of splenic red pulp function. The readings' description of the spleen as regulating the balance between red and white blood forces corresponds to the modern understanding of the spleen's dual roles in erythrocyte removal and lymphocyte production. The readings' identification of splenic overactivity as causing leukocyte excess and potential leukemia corresponds to the modern understanding of hypersplenism and to the role of the spleen in certain lymphoproliferative disorders (Lv et al., 2016).

The readings' description of a "splenic nerve system" with its own governing spinal center at approximately the 5th dorsal, operating through the solar plexus to influence the brain and sensory organism, does not correspond precisely to any named nerve system in modern neuroanatomy. The spleen receives sympathetic innervation from the celiac plexus and some parasympathetic fibers through the vagus nerve. The readings' concept of the splenic force as a distinct nerve current carrying physiological information from the spleen to the brain may correspond in broad terms to the ascending visceral afferent pathways from the spleen through the

vagal and spinal afferent systems — pathways now recognized as part of the gut-brain axis. However the specific functional role the readings assign to the splenic nerve force has no precise modern anatomical correlate.

The readings' consistent association between emotional states — particularly anger, worry, and anxiety — and splenic engorgement anticipates modern research on the relationship between psychological stress and immune function, since the spleen is a primary immune organ. Acute psychological stress is known to activate the sympathetic nervous system and modulate splenic immune cell trafficking, altering lymphocyte output and inflammatory signaling. The readings' description of anger as producing splenic overactivity corresponds to this stress-immune axis in general terms, though the mechanism the readings describe — direct nerve-mediated engorgement of the spleen through emotional stimulus — is more direct than the neuroendocrine pathways recognized in modern stress immunology.

The readings' identification of the spleen as intimately connected with sugar metabolism — particularly through its relationship with the pancreas in cases described as "splenic or splenetic rather than diabetic" (1963-1) — anticipates research suggesting that the spleen plays a role in metabolic regulation beyond its classical immune and hematological functions. Recent studies have identified splenic involvement in insulin signaling, glucose metabolism, and the regulation of inflammatory mediators that affect pancreatic beta cell function. While this research is in early stages, it provides a modern context for the readings' repeated association of splenic dysfunction with excess sugar production (Huang et al., 2021).

The readings' descriptions of enlarged spleen (splenomegaly) — in cases of malarial infection, leukocytosis, and engorgement from

hepatic-digestive dysfunction — correspond to well-established clinical patterns in modern medicine. Splenomegaly is a recognized complication of malaria, portal hypertension from liver disease, and various lymphoproliferative conditions, all circumstances in which the readings' descriptions of splenic engorgement and its systemic consequences have clear modern parallels (Aldulaimi & Méndez, 2021).

4.6.7 The Liver

Overview

The liver holds a position in the readings that is without parallel among the organs of the body — except, perhaps, the brain. It is the largest organ in the body, described as the organ that has more to do with the action of the whole system than any other one single organ in the body outside the brain. It is the site at which the blood's used and toxic material is separated for elimination, and simultaneously the source of the secretory products that sustain digestion. It is the positive pole of the body's battery on whose balance the health of every other organ depends. It performs the unique function, described in multiple readings, of receiving the blood twice in its circulation before the rest of the system receives it once. And its condition is reflected, for better or worse, in virtually every other organ and system in the body.

The liver is by far the most frequently mentioned single organ across the physical readings — a scope of attention that reflects the readings' understanding of it as the central regulatory organ of the body's chemical and eliminative life, not merely a digestive accessory. This section offers a systematic account of the readings' understanding of the liver's anatomy, physiology, pathology, and systemic role, organized to make clear both the internal consistency

of the readings' framework and its relationship to historical and modern understanding.

Anatomy

Identity, Size, and Position

The readings describe the liver in terms that emphasize its preeminence among the body's organs. "The liver is the excreting and secreting organ — both in its properties — in the system. It is the largest organ we have in the system, solely in itself," reading 87-2 states. Reading 2841-1 identifies it as "the largest gland or organ in the body," and another reading describes it as the organ that has "more to do with the action of the whole system than any other one single organ in the body outside the brain" (61-1). This repeated insistence on the liver's primacy reflects the readings' understanding of it as the central regulatory organ of the body.

The liver's location is specified across many readings through their practical therapeutic references. It lies in the right upper abdomen, with its lower portion accessible for castor oil pack application. The "gall duct area" and the "liver area" are consistently co-located on the right side of the body, with the caecum below, placing the liver in its anatomically correct position.

The Lobes of the Liver

The readings acknowledge the liver's subdivision into lobes, with the most extended treatment appearing in reading 369-5:

... the liver being divided in many lobes, many portions of same functioning almost in the same ratio as various portions of the brain affect the mental system and the activities of the MOTOR system of the whole body; for, as an indentation in certain portions or certain centers in the brain itself hinders locomotion in certain portions of the system, so does that activity in certain portions of the

lobes of the liver itself supply, or LACK in supplying,
that necessary in the element OF the creation of the
forces THROUGH the blood's activity. (369-5)

This remarkable passage draws a structural and functional analogy between the liver and the brain — both organized into regions that govern different aspects of systemic function, both capable of producing specific local deficits when a particular region is impaired. It represents one of the most conceptually ambitious anatomical statements in the readings and underscores the liver's status as an organ of regulatory complexity comparable to the central nervous system itself.

The readings distinguish at least two lobes — a right lobe and a left (smaller) lobe — and identify different pathological conditions affecting each. Reading 99-1 identifies congestion specifically in "the right lobe of liver." Reading 5439-1 describes disorder in "the left lobe, or the smaller lobe of same" as affected by the splenic circulation. Reading 157-1 distinguishes right and left lobe conditions with characteristic precision: "the liver congested in the right lobe, lax in the left." Reading 221-1 describes "one lobe is torpid; tendency towards cirrhosis, though not at that condition at present." The readings' differentiation of right and left lobe conditions — and the suggestion that different lobes may be simultaneously in opposite states (congested vs. lax; torpid vs. engorged) — reflects an anatomical awareness that the liver's functional subunits can be independently affected.

The Hepatic Axis: Liver and Kidneys as Positive and Negative Poles

The single most distinctive structural concept in the readings' treatment of the liver is the identification of the liver and kidneys as the "positive and negative poles of a human body" — a battery-like

regulatory pair on whose coordinated activity the maintenance of the blood supply and the elimination of toxic material depends. This concept is stated explicitly and repeatedly across many readings, and it shapes the readings' entire approach to the hepatic circulation. Reading 137-81 provides the most fully articulated statement:

The eliminating of any inflammation throughout the system comes, as is seen by the anatomical study of the conditions, either through the liver and ITS organs and its functioning system or through the kidneys. When the liver is so choked up, when its cells, if you please, of each lobe, are so congested as to produce the inability of the emunctory forces' functioning, the emunctories in the kidneys respond, for, as has OFTEN been given, the liver and the kidneys are the positive and negative poles of a human body, and when one becomes overtaxed, necessarily, the other becomes supercharged in its functioning. (137-81)

Reading 369-5 extends the metaphor: "they act to the system, in their blood action as the positive and the negative poles of each CELLULAR UNIT CREATED IN the BLOOD STREAM ITSELF! and from the BLOOD ALL PORTIONS of the body." Therapeutically, reading 557-5 applies the principle directly: "as we apply these stimulations for the removal of the disturbances in the positive pole of the body (or the LIVER and the gall duct area), the irritation in the other pole (or through the KIDNEYS and bladder) will naturally be relieved."

The polarity concept has several practical implications. First, liver and kidney conditions are not independent — when one is overtaxed, the other compensates, and apparent kidney disease may in fact be a secondary consequence of liver failure. Reading 137-81 illustrates this directly. A patient's albumin in the urine is not

Bright's disease but rather the kidney's compensatory elimination of material that "SHOULD be eliminated through the liver" when the liver is congested. Second, the coordination between the two poles is a fundamental requirement of systemic health — neither should become dominant at the other's expense, and therapeutic interventions that stimulate one must account for the effect on the other. Third, the battery metaphor implies that the liver and kidneys together generate the regulatory force that maintains the body's chemical equilibrium — not merely as passive filters, but as active generators of the conditions necessary for healthy blood and proper elimination.

The Hepatic Circulation

One of the most specific and consistently repeated anatomical-physiological statements in the readings is that the blood passes through the liver twice to once through any other portion of the body. "Through the liver we find the blood passes in its circulation twice to the rest of the system," reading 732-1 states. Reading 619-10 confirms: "the blood passes twice — as it were — through the liver to all other portions of the body." One reading extends this to the kidneys as well: "the blood must go twice through the liver AND the kidneys before the rest of the system is supplied."

This principle has profound physiological significance. It means that the liver has the first and dominant claim on the blood's chemical content — it receives and processes the blood before it reaches the peripheral tissues — and it means that any impairment of the liver's processing function will compromise the quality of blood delivered to every other organ. The organs of the extremities, the brain, the sensory system, and the musculature all receive blood that has already been processed — or improperly processed — by the liver

before it reaches them. This is why hepatic torpidity produces such wide-ranging systemic effects.

The readings employ a consistent distinction between the "upper hepatic circulation" and the "lower hepatic circulation" — a division reflecting the liver's different circulatory relationships above and below the diaphragm. The upper hepatic circulation is associated with the liver's relationship to the heart, lungs, and upper arterial circulation. When the upper hepatic is disturbed, the effects are felt in the thoracic region — pressure on the heart, respiratory difficulty, and the circulation between the liver and the heart becoming unbalanced. The lower hepatic circulation is associated with the kidneys, pelvic organs, and the excretory-eliminative system below the diaphragm. When the lower hepatic is disturbed, the effects manifest in the lumbar region, kidneys, bladder, and lower extremities — the heaviness in the feet, pains through the hips, and kidney dysfunction that multiple readings attribute to impaired lower hepatic flow.

The terms "upper hepatics" and "lower hepatics" appear consistently across the readings, and the distinction is not merely anatomical — it is functional and pathological. A cold upper hepatic produces one pattern of symptoms (thoracic pressure, cardiac disturbance, respiratory effects); a cold or slow lower hepatic produces another (renal involvement, lower limb circulation, pelvic organ effects). Restoration of balance between the two is one of the readings' recurring therapeutic objectives.

Beyond the upper/lower distinction, the readings use "hepatic circulation" as a broader term encompassing the entire blood flow through and associated with the liver and its coordinated organs — including the spleen, pancreas, gall duct, and lacteal system. A "cold hepatic circulation" — used extensively across many readings —

describes the state in which the hepatic blood flow is sluggish, chilled, and deficient in its processing activity, producing coldness in the extremities, low vitality, torpid digestive function, and a characteristic temperature pattern in which the surface temperature is low while the internal hepatic circulation may be elevated or congested.

Nerve Supply to the Liver

The readings identify the nerve supply governing the liver as arising primarily from the mid-dorsal region, with specific references clustering around the 3rd through 9th dorsal vertebrae. One reading identifies "the 3rd, 4th, 5th and 6th dorsal centers" as governing the nerve supply "to the liver and lacteal ducts." Reading 480-39 identifies "the upper portion of the 9th dorsal center" as providing stimulation for "the glandular forces of the spleen, the pancreas and the liver." Reading 1885-1 identifies "the secondary cardiac area" and "the 9th dorsal" as key targets for osteopathic stimulation to support "drainages in their relation to impulse of activity of the nerves through the liver."

As with the other digestive organs, the readings consistently describe the nerve supply to the liver as providing the "incentive" or "impulse" for its secretory and excretory activity. When spinal lesions or subluxations impair this supply, the liver does not receive adequate nerve incentive to perform its processing functions — it becomes torpid, laggard, or dormant — and the drosses accumulate in the blood as a direct consequence of impaired nerve stimulus rather than any primary disease of the liver itself. This framework explains the readings' consistent preference for osteopathic correction of the dorsal nerve supply over direct liver stimulation as the primary therapeutic approach to hepatic torpidity.

Physiology

The Liver as a Gland: Secretory and Excretory Identity

The readings consistently identify the liver as a gland — specifically as an organ that performs both secretory and excretory functions simultaneously, a combination they consider unique and defining. The formulation recurs across dozens of readings: the liver "secretes and excretes," "excretes and secretes," or performs "secretive and excretory functioning." Reading 87-2 states: "The liver is the excreting and secreting organ — both in its properties — in the system." Reading 2841-1 states: "the excretions and secretions of the liver, especially, are necessary." Reading 723-1 refers to "the spleen, pancreas and liver in its secretions and excretory functions in the eliminations in the body."

The distinction between these two functions is significant in the readings. Secretion refers to the liver's production of useful substances — bile and other digestive juices — that are released into the digestive tract to act upon food and support assimilation. Excretion refers to the liver's removal of waste materials from the blood — the spent red blood corpuscles, nerve-end residues, toxic byproducts of metabolism, and other used forces — and their disposal through the bile into the alimentary canal for elimination. One early reading articulates both functions of the liver together with unusual clarity.

It secretes and excretes both. It secretes from the juices to be carried on by the digestion through the gall bladder, passes in and acts onto the particles in the food that is used and assimilated into the system and carried back to the blood to be used as new force. It secretes then from the system the ends of used up forces of blood corpuscles, red blood corpuscles, the same as we have the spleen used on the white corpuscles. It carries force

to the system, or a destroyer, or used forces in the system are carried through by the circulation of the body, where they are eliminated or thrown out from the system through the intestinal tract and passed off through the dross. (4310-1)

This passage establishes the liver's dual role with precision. On the secretory side, it produces bile for digestion and assimilation; on the excretory side, it removes drosses — the molecular residues of spent cellular activity — from the blood and routes them through the intestinal tract for elimination. The drosses concept is one of the readings' most distinctive contributions to a theory of systemic cleansing. As the body uses energy in any form — mental, physical, muscular — it generates cellular residues, and the liver's excretory function is the primary mechanism by which these residues are cleared from the blood and disposed of. When the liver is torpid or congested, the drosses accumulate, poisoning the blood and producing the cascade of systemic disturbances that the readings identify as torpid liver disease.

Blood Purification and the Clearance of Drosses

The liver's primary excretory function is the removal of used or toxic material from the blood — the clearance of what the readings call drosses. These include spent red blood corpuscles, "nerve ends, matter that is rejected, or refused forces, used up by the muscular force" (4614-1), metabolic byproducts from physical exertion and mental activity, and any foreign or toxic material that has entered the circulation. The liver receives these materials through the blood, processes them through its lobes, and routes the cleared waste through the bile into the intestinal tract for elimination through the bowel.

When the liver is functioning properly, this process is continuous and efficient. The blood delivered to the peripheral tissues is relatively clean, and the bowel serves as the exit channel for the accumulated dross. When the liver becomes torpid or congested, the drosses accumulate in the blood supply, distributing toxic material to the peripheral tissues, nerve endings, muscular fasciae, and joints. This results in patterns of rheumatic, arthritic, neuritic, and general toxemic conditions that the readings consistently trace to hepatic insufficiency.

Secretory Function: Bile and Digestive Contribution

Simultaneously with its excretory clearance function, the liver secretes bile through the gall duct into the duodenum, where it acts upon fatty and starchy food substances to support their digestion and assimilation. As described in Section 4.6.4, this secretory contribution is "a secretion from the liver to enter into the flow from the stomach proper into the chyle for the proper assimilations" (635-4). The dual nature of this function — secretory products going out into the digestive tract for assimilation, while excretory products go out through the same biliary route for elimination — gives the liver's relationship to the gall duct its double significance. The gall duct is both a digestive secretory channel and an eliminative excretory one.

Blood Building and Plasm Formation

Beyond clearance and secretion, the readings describe the liver as participating in the active rebuilding of the blood supply. Reading 4310-1 describes how the blood brings to the liver "those properties which should be carried out, or taken out by the liver in its action from the hepatic circulation, through the kidneys and the liver," while the liver simultaneously contributes to "the new blood into the system" through its secretory-metabolic activity. Reading 369-5 speaks of the liver's role "in the element OF the creation of the forces

THROUGH the blood's activity" — identifying each lobe of the liver as contributing to the building of the blood in a manner analogous to each region of the brain contributing to mental function.

This constructive role — liver as blood builder as well as blood cleanser — is consistent with the readings' understanding of the liver as producing the "plasm" of the blood supply: the material forces that support coagulation, cellular rebuilding, and the maintenance of the blood's active vitality. The practical clinical consequence is stated plainly in reading 288-28: when the liver is torpid, "blood is very rarely built up properly. When this is KEPT normal, the blood supply is near normal."

Relationship to Metabolism and Katabolism

The liver is identified in the readings as the primary organ governing the balance between metabolism and katabolism — the two complementary processes described in Chapter 2 (metabolism as blood balance and pressure; katabolism as blood distribution and rhythm). Reading 2026-1 notes that in a liver disorder, "there becomes an involvement in the metabolism, the katabolism here is very good; indicating that there is a better balance between the lung and the heart than between the circulations below same" — distinguishing the two processes and noting that different organs contribute to each. Multiple readings identify hepatic activity as the mediating force that keeps the metabolic-katabolic balance stable, and hepatic torpidity as the primary disruptor of that balance in the direction of toxemia and systemic stagnation.

Pathology

Torpidity

Torpidity — a slowing, dulling, or reduction of the liver's activity — is by far the most commonly described hepatic pathological

condition throughout the readings. The terms "torpid" and "torpidity" applied to the liver appear with great consistency across the readings, making these among the most diagnostic terms in the entire readings vocabulary for hepatic conditions. Torpid liver is described as producing a cascade of systemic consequences. Drosses accumulate in the blood, constipation and intestinal stagnation follow from the reduced bile output, the blood becomes toxic, the kidneys are secondarily overtaxed, and the general vitality of the body declines.

Reading 341-23 provides a comprehensive description of the torpid liver's systemic consequences. "In those specific centers where the troubles arise, through the dullness, the laggardness, the tendency for headaches, the slow reaction in response to effort of study, the slow reaction as is seen in the activities of the body, comes from the torpid liver condition, and from that comes the congestion through the mesenteric system, and especially through the absorption and re-absorption of toxins from constipation." Reading 331-1 warns that sustained torpidity "must also bring something of a hardening [cirrhosis] of the liver — unless conditions are corrected."

A still broader symptomatic complex is described in reading 5696-1: "those tendencies for the torpidity in the liver, the tendency for an internal rather than an external circulation, poor circulation to the capillaries, heaviness in the feet, pains at times through the hips and through the side. These, as we find, coming from these disorders. Bad tastes in the mouth, as it were. Headaches, or burning in the eyes, and pains through the neck and to the lower portion." This symptomatic cluster — presenting in multiple body regions simultaneously — reflects the liver's central role in the blood supply. Because the blood passes twice through the liver before reaching the periphery, the peripheral tissues feel the effects of hepatic

dysfunction more promptly and more broadly than they feel disturbances in other organs.

Congestion

Congestion differs from torpidity in emphasis. Where torpidity describes inadequate activity, congestion describes an over-accumulation of material — bile, blood, toxic products — within the liver's lobes and ducts, producing pressure, inflammation, and impaired drainage. Congestion is associated across the readings with a wide range of secondary effects. Reading 1196-1 describes how congestion in the liver produced "a granular condition in the glandular activity of the liver itself," generating toxic forces in the blood supply that manifested in the prostate, kidneys, and bladder. Reading 760-20 describes how congestion from the gall duct produces "a slowing in the circulation between the heart, the lungs, the liver and the kidneys" that may become "a very serious condition."

Cirrhosis and Hardening

Progressive structural change in the liver — cirrhosis or hardening — receives specific attention in the readings as the end-stage consequence of prolonged, uncorrected torpidity or congestion, representing the transition from functional to organic pathology. Reading 16-1 identifies a tendency "towards that of cirrhosis, though not at that stage as yet and may be brought to its proper functioning" — maintaining the readings' characteristic recognition that correction remains possible before the organic stage is fully established. The warning in reading 331-1 — that continuation of torpidity from toxins "must also bring something of a hardening [cirrhosis] of the liver — unless conditions are corrected" — is characteristic of the readings' consistent use of the functional/

organic distinction as both a clinical marker and a therapeutic motivation.

Reading 209-1 describes a condition of "granular hardening" — "a closeness of the granular or lobular portion itself; not hardening, but a TENDENCY towards that of a closeness" — as an intermediate stage between functional torpidity and cirrhosis.

Granular and Glandular Conditions

A distinct pathological state referred to as a "granular condition" describes the formation of granular or nodular material within the glandular activity of the liver following prolonged congestion. Reading 1196-1 describes: "there has been in times back a congestion, and then following the congestion there was a glandular condition — or GRANULAR condition in the glandular activity of the liver itself." Reading 175-1 describes a torpid liver "secreting, as it were, these ends and leaving them in the liver in the form of lobes or granular force — not the stone formed by gall, but ends of nerves used — the corpuscles deadened, not eliminated by the proper secretions to carry these from the forces." The granular condition represents the physical accumulation of incompletely eliminated dross material within the liver's tissue — a sub-cirrhotic but structurally significant change that compromises the organ's secretory and excretory capacity.

Malarial Bacilli and Infectious Conditions

Several readings identify the liver as a site of malarial bacilli accumulation, linking hepatic dysfunction to susceptibility to and manifestation of malarial-type conditions. Reading 221-1 describes "one lobe is torpid; tendency towards cirrhosis, though not at that condition at present, but rather one that has excess of malarial bacilli exhibited there." The readings situate malarial susceptibility not

primarily in external infection but in the internal condition of the hepatic circulation — when the blood is already compromised by hepatic toxemia, malarial bacilli find a hospitable environment. This perspective reflects a constitutional rather than purely infectious model of disease susceptibility that is consistent throughout the readings.

Systemic Consequences of Liver Pathology

Because the blood passes twice through the liver before reaching the rest of the body, hepatic pathology generates the widest range of secondary systemic effects of any organ discussed in the readings. The readings document hepatic consequences in virtually every organ system. The kidneys are overtaxed as the compensating negative pole. The heart's action becomes abnormal from pressure in the upper hepatic circulation. The lungs retain toxic material that should have been eliminated through the liver and bowel. The mesenteric and intestinal systems become congested from insufficient bile. The extremities develop rheumatic, neuritic, or arthritic conditions from toxic dross deposits. The sensory organs are affected through the blood's impoverishment. The mental and emotional functions are disturbed through the inadequate supply of properly processed blood to the brain.

Reading 5476-1 describes this chain comprehensively: "Not only does the elimination act through the effectual activities of the liver, with the digestive system, and through the kidneys and the urinary canals, but through the respiratory system — and when one becomes so clogged as to prevent the normal eliminations, then another portion of the body suffers from same." The liver's failure thus cascades through all four eliminative channels — bowel, kidneys, respiratory, and perspiratory — as each attempts to compensate for what the liver cannot eliminate.

Modern Context

The liver is recognized in modern anatomy as the largest solid organ in the body, weighing approximately 1.5 kg in adults and located in the right upper quadrant of the abdomen beneath the right hemidiaphragm. It is divided into four lobes (right, left, caudate, and quadrate) based on external appearance, and into eight functional segments based on the internal distribution of the hepatic artery, portal vein, and bile ducts — a segmental organization that corresponds in principle to the readings' suggestion that different lobes function "almost in the same ratio as various portions of the brain affect the mental system," with each segment capable of being independently compromised (369-5). Modern hepatic surgery is organized precisely around this segmental functional independence.

The readings' description of the liver as performing both "secretory" and "excretory" functions corresponds accurately to modern hepatology. The liver's secretory products include bile salts, bile acids, cholesterol, phospholipids, and bilirubin — all secreted through the biliary system into the duodenum for digestive purposes. Its excretory functions include the removal from the blood of bilirubin from hemoglobin breakdown, ammonia converted to urea for renal elimination, drugs, toxins, and metabolic waste products — all processed in the hepatocytes and routed either through the bile or through the bloodstream to the kidneys for elimination. The readings' characterization of the excretory function as clearing "used up red blood corpuscles, nerve ends, matter that is rejected, or refused forces, used up by the muscular force" corresponds to the modern understanding of hepatic clearance of bilirubin from senescent red cells, ammonia from protein catabolism, and various metabolic byproducts of cellular activity (Zhang et al., 2025).

The readings' assertion that the blood passes "twice through the liver" to once through the rest of the body reflects an understanding of the liver's unique dual blood supply. The liver receives blood from two sources: the hepatic artery (carrying oxygenated blood from the systemic circulation) and the portal vein (carrying nutrient-rich blood from the gastrointestinal tract and spleen). This means the liver intercepts the entire venous drainage of the digestive system before it reaches the systemic circulation — the portal circulation — and simultaneously receives a share of the systemic arterial supply. The combined result is that the liver processes approximately 25% of the cardiac output, far exceeding any other abdominal organ, and it does so in two distinct circulatory passes: once as nutrient-laden portal blood from the gut, and once as systemic arterial blood. While the phrase "twice through the liver" is not the standard modern formulation, it captures an essential truth about the liver's circulatory predominance.

The readings' positive-negative pole concept for the liver-kidney relationship corresponds to a relationship modern medicine recognizes as hepatorenal syndrome — the well-established clinical pattern in which severe liver disease produces secondary kidney failure through a combination of hemodynamic, neurohormonal, and metabolic mechanisms. The readings' formulation — that when one pole becomes "overtaxed, necessarily, the other becomes supercharged in its functioning" — describes the compensatory activation of the kidneys when the liver fails its eliminative role, which is precisely what occurs in hepatorenal syndrome and in the secondary renal involvement seen in cirrhosis and other severe liver diseases (Velez et al., 2024; Francoz et al., 2019).

The upper hepatic/lower hepatic distinction in the readings corresponds approximately to the distinction modern anatomy

draws between the liver's relationship to the superior vena cava and hepatic veins (draining upward toward the heart) and the portal venous system (draining downward from the gastrointestinal tract) — two circulatory territories with distinct anatomical relationships and distinct clinical significance. Upper hepatic disturbance affecting the heart-lung relationship corresponds to the modern concepts of hepatopulmonary syndrome and the cardiac effects of portal hypertension; lower hepatic disturbance affecting the kidneys and pelvic circulation corresponds to the portal hypertension-related changes in splanchnic and renal blood flow recognized in modern hepatology.

The readings' concept of drosses — the cellular waste products of metabolic and physical activity that accumulate when the liver is torpid — has no single precise modern equivalent but corresponds in general terms to the spectrum of metabolic waste products that the liver is responsible for clearing: bilirubin, ammonia, reactive oxygen species, lipid peroxidation products, and various endogenous and exogenous toxic compounds. The clinical presentation of hepatic torpidity as the readings describe it — dullness, headaches, poor concentration, bad taste, heaviness in the extremities, and eventual rheumatic or neuritic deposits — corresponds to the clinical spectrum of chronic hepatic insufficiency and the systemic effects of elevated plasma toxin levels observed in modern hepatology.

Cirrhosis — the progressive fibrous replacement of hepatic parenchyma — is fully recognized in modern medicine as the end-stage consequence of prolonged hepatic injury from multiple causes, including chronic toxic exposure, alcohol, viral hepatitis, and metabolic disease. The readings' description of cirrhosis as developing from prolonged torpidity or congestion, progressing

through a granular or "hardening" intermediate stage, corresponds to the modern histopathological sequence from simple steatosis or congestion through fibrosis to cirrhosis. The readings' insistence that this process is preventable if caught in the functional stage — before the organic transition — corresponds to modern hepatology's recognition that early-stage hepatic fibrosis can regress with appropriate intervention, while advanced cirrhosis represents largely irreversible structural change.

4.7 The Kidneys and Urinary Organs

Overview

The kidneys occupy the second most prominent position in the readings' account of the body's *regulatory* organs, exceeded only by the liver in frequency of mention and systemic importance. They are addressed throughout the physical readings not only as organs of urinary elimination but as the body's primary blood-purifying mechanism and as the negative pole of the fundamental liver-kidney regulatory axis established in Section 4.6.7. Their condition is inseparable from the condition of the liver. Their failure produces systemic consequences through every eliminative channel. Their recovery depends on restoring the balance of the hepatic circulation as a whole rather than treating the kidneys in isolation.

Together with the urinary organs — bladder, urethra, and urinary canal — the kidneys constitute an integrated eliminative apparatus whose proper function depends on adequate nerve supply from the lumbar-dorsal spine, adequate water intake for the "slushing" of toxic material through the blood, and a balanced relationship with the liver as the complementary regulatory partner. The adrenal glands, consistently identified as "the glands above the kidneys," are

recognized as a critical intermediary between the kidney's eliminative function and the broader glandular-endocrine system.

Anatomy

Position and General Structure

The kidneys are consistently located in the readings by reference to the lumbar region, the small of the back, and their relationship to the lower dorsal vertebrae. Readings 2027-1 and therapeutic applications throughout identify "the lower lumbar and the lower dorsal areas" as the nerve region "just above the kidneys," with topical therapeutic applications consistently directed "across the lower lumbar and extending to the lower portion of the kidneys." The kidneys thus occupy their anatomically correct position in the retroperitoneal space of the posterior abdomen, and their nerve supply from the lower dorsal and lumbar spine is structurally precise.

The Adrenal Glands as Associated Structures

The readings consistently identify the adrenal glands — referred to as "the glands about the kidneys," "the glands above the kidneys," or "the adrenal glands" — as distinct structures closely associated with the kidneys in both anatomy and function. Back pain in the kidney area is attributed in reading 2027-1 to "the glandular conditions above the kidneys" rather than the kidneys themselves. Reading 1664-1 describes how "the glands just above the kidneys coordinate with the glandular activity of the thyroids," identifying the adrenals as a link between the renal and thyroid endocrine systems.

The adrenals are identified as a critical intermediary between the kidney's eliminative function and the broader glandular-endocrine system. Reading 560-2 identifies the adrenal glands' role explicitly: "the nature of the disturbance in the adrenal glands, with the kidney

functions producing secretions that harden or solidify, there is caused such irritation in the hepatic circulation as to strain the changes between the arterial and venous circulation." Their impairment contributes to renal dysfunction, and their restoration is a component of kidney treatment in multiple readings.

The Bladder, Urethra, and Urinary Canal

The bladder, urethra, and urinary canal receive specific attention in the readings as structures through which the kidneys' eliminative output is stored and expelled. The readings treat these structures as distinct from the kidneys proper, with their own pathological susceptibilities and nerve-supply relationships. Reading 2402-1 describes bladder dysfunction as producing "a scant but oft activity of the bladder at periods, at others a LACK of activity, and the producing of a burning or a high sensitiveness in the act of passing the urine through the urethra" — distinguishing urethral and bladder symptoms from kidney pathology proper. In cases of severe spinal injury, reading 3369-1 addresses an extreme urinary tract failure: "the inability of the body to control the activity of the urinary canal — consciously or unconsciously."

The readings distinguish between kidney disorders and bladder disorders as clinically important. Reading 2402-1 attributes "a BLADDER disorder, rather than a kidney disorder" to reflexes through the hepatic circulation producing suppressed or frequent urination — the bladder participates in a reflex system through which hepatic-renal disturbance manifests in urinary symptoms that may be mistaken for primary bladder pathology.

The Prostate in Relation to the Kidneys

The prostate appears in the kidney readings as a structure whose condition is reflexly linked to the kidneys, pelvic circulation, and

lower hepatic disturbance. Reading 1607-1 describes how distress in "the canal from the kidneys to the urinary canal" causes "disturbance through the areas about the prostate and portions of the scrotum." The readings that address prostate problems often view them as a secondary consequence of renal and pelvic circulatory impairment — an instance of the readings' characteristic tendency to trace apparent local pathology back to systemic causes.

Nerve Supply to the Kidneys

The readings identify the primary nerve supply to the kidneys as arising from the lower dorsal and lumbar vertebral centers, with consistent references to the 9th through 12th dorsal and the 1st through 4th lumbar as the governing spinal territory. A subluxation at "the 9th to 12th dorsal" is identified in reading 600-1 as the specific nerve center "from which there is the supply in the greater part to the kidneys and the activity of the lower hepatic circulation." Reading 149-1 identifies impingement at "the 12th dorsal and the 1st and 2nd lumbar" as the cause that "prevented the functioning of the organs that these centers affect," producing "the slow action of the lower hepatic circulation and eliminations through the kidneys proper."

The ileum plexus — identified in several readings as a specific nerve plexus "about the kidneys and about this portion of the body where the eliminations are produced through these portions of the body" — receives particular attention as the local abdominal nerve network governing renal eliminative activity and its relationship to the pelvic organs. This plexus receives its governing impulse from the lumbar spinal centers and communicates with both the hypogastric plexus and the broader sympathetic system, making it the intermediate nerve relay between the spinal governance of the kidneys and their functional activity in the pelvic cavity. Reading 1664-1 identifies "pressure in the ileum plexus area" as preventing "activities about

the functioning of the kidneys," with the effect felt in the blood supply as a reduction of leucocyte production — illustrating how renal nerve impairment propagates into blood quality rather than simply producing local kidney symptoms.

Physiology

The Kidneys as the Negative Pole of the Hepatic Axis

The most fundamental principle in the readings' account of kidney function is the characterization of the kidneys as the negative pole of the body's regulatory battery — the counterpart to the liver's positive pole established in Section 4.6.7. The functional differentiation between the two poles is spelled out with notable clarity:

Now, as to the activities of the liver and the kidneys, they are as the poles of a generator that are as positive and negative in their reaction. The liver is an excretory and secreting organ. The kidneys are excretory and secreting, but in the opposite way and manner. The liver prepares values for the assimilating and for the necessary elements to PRODUCE better assimilation, while the functioning of the kidneys is rather to PURIFY the circulation by taking FROM the blood supply infectious forces that are carried off by the slushing of same with the quantities of water taken. (514-4)

This passage establishes several key principles simultaneously. Both organs are secretory and excretory — they share this functional identity. They perform these functions "in the opposite way and manner" — their directionalities are complementary rather than identical. The liver's primary orientation is constructive. It prepares values for assimilation, producing the materials the body needs. The kidneys' primary orientation is purifying. They extract infectious

forces and toxic material from the blood and carry them off through the water taken into the system. As noted above, the mechanism of purification is specifically described as "the slushing of same with the quantities of water taken" — a hydraulic-flush model in which adequate water intake is essential to renal eliminative function.

Reading 2084-2 confirms the polarity framework in clinical context, responding to a question about whether a kidney condition means there is also liver trouble: "The kidney circulation IS considered here as the negative pole of the hepatic circulation; as liver and kidney circulation form the greater part of the activity in system in eliminating certain refuse or excess forces, — as the activity of the kidneys, — through the drosses of the system." Reading 4909-1 restates the principle: "we have two poles acting to the living body, the kidneys and the liver, the active principles are the same as two poles of electricity in the body, those which give life to the body. The liver is the stronger, excretive and secretive. The kidneys secreting, taking from the system the impurities."

The compensatory relationship between the poles is clinically critical. As established in Section 4.6.7, when one pole becomes overtaxed, "necessarily, the other becomes supercharged in its functioning" (137-81). The practical clinical implication is consistently stated. Treatment of overtaxed kidneys must include stimulation and support of the liver, without which the renal burden cannot be relieved. Reading 40-1 illustrates the therapeutic application directly: stimulating "the opposite pole, the liver, to take off or to prevent so much of the force being used or needed to go in the organ, the kidney itself."

Blood Purification: The Slushing Mechanism

The kidneys' primary physiological function is the purification of the blood by extracting infectious forces, toxic material, uric acid, and

other waste products from the blood supply and carrying them out of the body through the urine. The mechanism is specifically hydraulic: adequate water intake creates a "slushing" action through the blood and kidney tissue that washes toxic material into the urine for elimination. "The body does not keep enough water in the system to flush the kidneys and the urinary canal, you see. Do that," reading 3846-1 states, confirming: "We wish to give the best effect to the system through the natural means to cleanse the conditions through the bladder, the kidneys, and urinary canal with clear water."

This slushing-with-water principle is repeated in several readings that discuss kidney function. Insufficient water intake — leaving the blood inadequately flushed — allows uric acid, sediment, and infectious forces to accumulate in the renal circulation, producing the irritation, sediment formation, and progressive renal congestion that the readings identify as the characteristic pattern of kidney pathology arising from insufficiency of the negative pole's function.

Coordination with the Lungs

The readings identify a functional pairing between the kidneys and the lungs — distinct from but complementary to the liver-kidney polarity — in which both organs serve to purify the blood in different directions. "The lungs and the kidneys, while coordinating, purify the blood in different directions," reading 2091-3 states explicitly. The lungs purify through oxygenation and carbon dioxide elimination — dealing with the respiratory dimension of blood purity — while the kidneys purify through the aqueous elimination of dissolved toxic material and infectious forces. When the kidneys are overtaxed, the lungs are correspondingly burdened, and readings addressing combined pulmonary-renal conditions address both organs as a coordinated eliminative pair.

The Kidney-Eye Relationship

One of the more distinctive and specific physiological associations in the readings is the connection between renal function and the eyes. "There is a close association between kidneys and eyes — don't forget that!" reading 2004-4 states simply. Reading 4526-1 identifies "those conditions of kidneys and eyes" together as a specific diagnostic grouping, with kidney engorgement and uric acid returned in the circulation associated with eye disturbances. While the mechanism is not elaborated in the available readings, the consistent association of renal dysfunction with visual disturbance suggests a nerve-reflex or circulatory pathway connecting the renal eliminative system to the sensory organism — consistent with the broader pattern throughout the readings in which impaired elimination in any primary channel produces reflex effects in the sensory system.

Pathology

Overtaxation as the Primary Pathological Pattern

The most consistently described pathological condition of the kidneys throughout the readings is overtaxation — the kidneys being called upon to eliminate material that the liver should have cleared but did not. This overtaxation is consistently described as a compensatory burden. When the liver is torpid, congested, or otherwise impaired, the negative pole assumes an excess of the eliminative load, producing a state of chronic overwork that eventually compromises the kidneys' own structural integrity.

Reading 133-1 describes the mechanism: "Kidneys leaving then that toxin that causes the uremic poisoning, or the effect to the muscular forces and the nerve centers causing distress. The liver that affecting and disturbing the digestive system, and the stomach and

eliminations". The polarity principle is stated in its most direct form in reading 4561-1: "when one pole in the system and the liver and kidneys, or poles in hepatic circulation, when one becomes overcharged it is at the expense of the functioning of the other." The practical clinical implication is consistently directed. Treatment of overtaxed kidneys must include stimulation and support of the liver, without which the renal burden cannot be relieved.

Sediment, Gravel, and Stone Formation

The readings recognize a progressive pathological sequence within the kidney from sediment through gravel to stone formation, paralleling the sequence described for the gallbladder in Section 4.6.4. Sediment formation is described as an early consequence of impaired renal circulation — solid deposits forming within the kidney or bladder from material the kidneys cannot adequately carry into solution. Reading 632-5 identifies "the very high ACIDITY of the secretions from the system through the hepatic and lower hepatic circulation" as producing "sedimentary conditions that produce irritation to the bladder and to the activity of the system." Sediments in the bladder and urethra cause mechanical irritation during passage (868-1), and the readings acknowledge fully calcified kidney stones as representing the advanced stage of this progressive process.

The readings distinguish functional sediment from fully calcified stone. Reading 5267-1 identifies accumulations in the kidneys that "are not true stones which are formed or indicated by the shadowgraph, but as we will find with administrations which may be indicated for the removal of this force" will dissolve — a distinction that carries therapeutic significance. Functional sediment may be dissolved and flushed through restoration of proper renal

and hepatic circulation, while true calcified stones may require more direct intervention.

Uric Acid and Uremic Conditions

Excess uric acid — accumulated from inadequate renal elimination of the body's nitrogenous waste products — is one of the most frequently identified specific toxic products in the kidney readings. The readings describe uric acid accumulation as producing musculoskeletal consequences (rheumatic, arthritic, and neuritic conditions in the joints and connective tissue) when not adequately flushed from the system, and as a primary source of renal irritation when it concentrates in the kidney tissue itself. Reading 2555-1 describes how excess uric acid produces "pressures upon the sympathetic system as well as the cerebrospinal or central nervous system," deflecting organ function and producing varied systemic disturbances.

Uremia — the systemic accumulation of excessive urea and other nitrogenous waste products that the kidneys have failed to eliminate — is described in more severe cases. Reading 626-1 identifies "a uremia of a nature that makes areas of irritation in the superficial or capillary circulation, even to the exterior portions of the body," with skin manifestations representing the body's attempt to eliminate through perspiratory channels what the kidneys cannot handle. Reading 1355-1 describes how inadequate urea extraction from the circulation has "gradually produced then this disturbing condition throughout the body," including softening of the tissues about the kidneys — one of the more structurally specific descriptions of advanced renal pathology throughout the readings.

Bright's Disease and Nephritis

The readings address specific clinical diagnoses of their era. Bright's disease — the nineteenth- and early-twentieth-century clinical category encompassing various forms of nephritis — appears in reading 137-81, where the diagnosis is questioned and reinterpreted. The albumin in the urine is present, "but as being that as is called Bright's Disease, no, for in this body the congestion of the eliminating system is so closed that the pus as is eliminated through the kidneys is that as SHOULD be eliminated through the liver." This reinterpretation of apparent renal disease as a secondary consequence of hepatic insufficiency is consistent with the readings' recurring pattern. The kidneys show the pathology because they are compensating for the liver, not because they are the primary site of disease. Nephritis — inflammation about the kidney capsule — is acknowledged in reading 976-1: "inflammation ABOUT the capsules of the kidneys themselves" as a consequence of systemic congestion from flu after-effects.

Inactivity and Underfunction

While overtaxation is the most common kidney pathological state, the readings also describe conditions of renal underactivity — the kidneys failing to perform their eliminative function adequately rather than being overdriven. When inadequate water leaves the kidneys unable to properly flush their output, concentrated toxic material irritates the bladder and urinary canal (3846-1). A progression from chronic overload through compensatory exhaustion to underfunction is described in reading 4909-1: "overtaxing of these organs with the kidneys" producing "lack of power for this organ." The readings thus recognize that the same organ can move through phases of overtaxation and eventual

underfunction as the chronic burden exceeds its compensatory capacity.

Reflex and Systemic Consequences of Kidney Pathology

Renal pathology generates systemic consequences through several pathways. The most direct is the accumulation of toxic material in the blood when renal elimination fails — producing the uremic and uric acid conditions described above, with their musculoskeletal, circulatory, and neurological consequences. The secondary pathway is through the compensatory burden imposed on the other eliminative channels. When the kidneys fail, the liver, lungs, and perspiratory system must compensate, and each shows signs of overburden. Reading 5476-1 describes how conditions produced in the kidneys impose a burden on "the bronchia and lung" that maintains temperature through the hepatic circulation. Reading 3058-1 identifies the "circulation between lungs, liver and kidneys, and especially that between liver and kidneys" as a critical axis requiring coordinated management in cases of systemic infection.

The kidneys also generate reflex effects in the sensory system, the musculoskeletal system, and — as noted above — the eyes. Kidney engorgement with uric acid returned in the circulation is identified in reading 4526-1 as producing disturbance in both the emunctories and the eye condition simultaneously. Reading 817-1 describes "crystallizations that occur in the form of accumulations in cysts in portions of the lymph and in the soft tissue" as a consequence of renal dysfunction — the body attempting to isolate toxic material it cannot eliminate through normal channels by walling it off in soft tissue cysts.

Modern Context

In modern anatomy, the kidneys are paired retroperitoneal organs located in the posterior abdominal wall at approximately the level of T12 through L3, a position corresponding to the readings' consistent identification of the lower dorsal and lumbar spine as the governing nerve territory. The adrenal (suprarenal) glands sit directly atop each kidney — precisely the anatomical relationship described in the readings as "the glands above the kidneys." The modern understanding of the adrenal-kidney functional relationship encompasses the adrenal cortex's role in aldosterone production governing renal sodium-water regulation and cortisol production governing stress response and metabolic balance — both of which directly affect renal function, consistent with the readings' treatment of the adrenal glands as critical modulators of renal activity.

The readings' characterization of the kidneys as purifying the blood "by taking FROM the blood supply infectious forces that are carried off by the slushing of same with the quantities of water taken" corresponds to the modern understanding of renal filtration. The kidneys filter approximately 180 liters of plasma per day through the glomeruli, reabsorbing most water and useful solutes while excreting waste products — urea, creatinine, uric acid, drug metabolites, and other toxic material — in the concentrated urine. The "slushing" mechanism corresponds to the hydrostatic pressure-driven glomerular filtration and tubular flow that physically carries dissolved waste into the collecting system. The readings' emphasis on adequate water intake as essential to renal function corresponds to modern clinical guidance on hydration for renal health, including the prevention of kidney stones through adequate urine volume.

The readings' description of the kidneys as purifying the blood "in the opposite way and manner" from the liver corresponds to the

modern understanding of renal and hepatic complementarity in detoxification. The liver metabolizes lipid-soluble toxins into water-soluble forms through phase I and II metabolism that can then be eliminated by the kidneys in the urine — a sequential partnership in which the liver transforms and the kidneys excrete. These are indeed complementary rather than identical mechanisms, operating "in the opposite way and manner" as the readings state.

The readings' identification of the nerve supply to the kidneys as arising from the 9th through 12th dorsal and 1st through 4th lumbar vertebral centers corresponds to the thoracolumbar sympathetic innervation of the kidneys recognized in modern neuroanatomy. The renal plexus receives sympathetic fibers from the celiac and aorticorenal ganglia, which in turn receive preganglionic fibers from the T10 through T12 and L1 spinal segments. The parasympathetic supply comes from the vagus nerve. The readings' identification of lumbar centers as particularly critical for renal function corresponds to the major sympathetic innervation via the lesser and least splanchnic nerves and the lumbar splanchnic nerves.

The readings' correlation of renal pathology with uric acid accumulation and its musculoskeletal consequences corresponds to the modern understanding of hyperuricemia and gout — the systemic consequence of excess uric acid in the blood producing crystal deposition in joints and connective tissue, as well as uric acid kidney stones. The readings' description of uric acid accumulated in the joints, sinews, and musculature from impaired renal elimination corresponds precisely to the pathophysiology of gout recognized in modern medicine.

The concept of Bright's disease — the clinical category the readings explicitly address and reinterpret — corresponded in early-twentieth-century medicine to a range of conditions now classified

under glomerulonephritis, nephrotic syndrome, and hypertensive nephropathy. The readings' reinterpretation of Bright's disease as a consequence of hepatic insufficiency rather than primary renal disease corresponds to the modern recognition that secondary renal involvement in hepatic disease — hepatorenal syndrome — produces a clinical picture of apparent nephritis that resolves with restoration of hepatic function rather than treatment of the kidneys directly, consistent with the readings' consistent direction to treat the positive pole to relieve the negative pole.

The kidney-eye association identified in reading 2004-4 has a well-established modern counterpart in the clinical association between renal and ocular disease. Hypertensive nephropathy produces hypertensive retinopathy; diabetic nephropathy is associated with diabetic retinopathy; lupus nephritis accompanies lupus retinal vasculitis; and various systemic conditions affect both kidneys and eyes through shared vascular and inflammatory mechanisms. The readings' perspective may reflect an awareness of this clinical association, though the specific mechanism through which it operates in the readings' framework — likely nerve-reflex or circulatory — is not elaborated.

4.8 The Pelvic Organs (Reproductive System)

Overview

Unlike the digestive or eliminative organs treated in previous sections, the pelvic organs are addressed within a framework that is simultaneously anatomical, physiological, pathological, and — in ways that distinguish this section from all others — explicitly glandular in a broader sense that reaches from the physical reproductive function to the body's capacity for regeneration, vitality, and even spiritual expression. The readings treat the pelvic

organs not merely as the organs of reproduction but as a glandular system intimately connected to the nervous system, the hepatic circulation, the endocrine axis, and the general eliminative function of the body.

The pelvic organs appear in the readings almost exclusively in the context of female anatomy and physiology. The uterus, ovaries, Fallopian tubes, and vagina receive the preponderance of specific anatomical attention, as those receiving readings were predominantly female and the most commonly presented pelvic conditions were gynecological. The male pelvic organs — particularly the prostate and testes — are addressed, but less extensively and usually in the context of their relationship to the broader reproductive and eliminative systems rather than as a primary diagnostic focus. This asymmetry reflects historical patterns of practice rather than any claim that the readings treated the male pelvic system as less significant.

A defining characteristic of the readings' treatment throughout this section is the consistent attribution of pelvic organ pathology to systemic causes. Thus impaired nerve supply from lumbar and sacral spinal centers, hepatic-circulatory imbalance, adhesions from prior inflammation or injury, and the general state of the blood supply and eliminations are the focus rather than primary local disease. The functional/organic distinction is applied throughout. As with the rest of this chapter, most pelvic organ conditions encountered in the readings are described as functional disturbances that are reversible if the governing systemic causes are addressed.

Anatomy

The Pelvic Region: True and False Pelvis

The readings employ the distinction between the true pelvis (the enclosed bony cavity below the pelvic inlet, housing the bladder, rectum, and internal reproductive organs) and the false pelvis (the wider region of the lower abdomen above the pelvic inlet). Reading 219-2 warns against "too much pressure on the lower portion of the pelvis, or upon the organs of the false pelvis, such as lifting, pulling, or too much exercise on feet" — identifying lifting strain and prolonged standing as contributors to pelvic organ displacement. Elsewhere pathology is described as existing "in pelvic organs and in the false pelvis proper, by adhesions as were produced there in times back by cold, and by the improper suppression and the improper action at times to the organs of the pelvis in menstrual periods" — connecting the anatomical zone with specific causative mechanisms.

Female Pelvic Organs: Uterus, Ovaries, Tubes, and Vagina

The uterus — referred to in the readings as "the uterus," "the womb," or "the organ" — is identified as a primary site of displacement, inflammation, adhesion, and functional disorder. Reading 467-1 describes "a contraction in the pelvic organs, for the turning of the womb itself in such a position that the nerve influences have tended to keep the organ in this position." The reading identified uterine displacement (retroversion or anteversion) as a consequence of nerve-mediated muscular contraction arising from a prior episode of menstrual congestion and cold. This is a characteristic readings formulation. The organ shifts from its proper position, the nerve supply becomes distorted to accommodate the new position, and the distorted nerve pattern then perpetuates the displacement.

The ovaries appear in the readings in relation to menstrual regularity, conception, and the broader glandular function of the female reproductive system. Reading 349-22 identifies "the functioning of the ovaries themselves, as related to forming and giving the proper association of semens for those activities which produce or bring about reproduction in the system" — treating the ovaries explicitly as glands whose secretory products govern reproductive capacity. Reading 2432-1 describes "the glandular forces in same have that lack of the production in such a manner as to fulfil the complete activity of the ovaries in their charge." This places ovarian underfunction within the category of glandular insufficiency rather than structural disease. Reading 369-14 describes ovaries that have become "slow and irregular in their functioning" from glandular disturbance, with "a tendency for these becoming ossified" — the readings' term for a progressive hardening or loss of secretory vitality.

The Fallopian tubes appear in the readings under several designations. In reading 549-1 a Fallopian tube is described as a pathway through which eliminations during the menses are conducted. A drying condition arising from nerve supply impairment at the 11th and 12th dorsal had caused "a drying condition" and subsequent inflammation in "the left ovary and the left tube." Reading 272-2 addresses "the infection toward the [Fallopian] tube" as a consequence of discharge from the uterus and vagina, requiring antiseptic douche treatment. The tubes are thus identified as pathways susceptible to inflammation, obstruction, and drying from inadequate circulation — with systemic nerve impairment as the root cause in most cases.

The vagina appears primarily in the context of local inflammation, mucous discharge, and treatment of pelvic conditions by douche.

Reading 272-2 identifies a discharge arising "from the walls of the uterus and condition in the vagina itself, as WELL as the infection toward the [Fallopian] tube." Reading 467-2 identifies congestion "in the vagina, where the congestion shows in the position of the womb proper" — linking vaginal congestion to the positional disturbance of the uterus.

Male Pelvic Organs: Prostate and Testes

The prostate receives specific attention in the readings in relation to the distribution of nerve forces to the lower portions of the body. Reading 867-1 describes "the glands in the reproductive forces in the system, the glands that make for the associations of the activities as in associations with individual activity in the system; as in the prostate's activity to the distribution of the nerve forces through or to the lower portions of the body." The prostate is thus characterized as a nerve-governing glandular structure — not merely a secretory organ but a node through which nerve force is distributed to the lower body. This conceptualization places the prostate within the readings' broader framework of glandular nerve governance that runs through the entire section. The prostate's susceptibility to secondary involvement in renal-pelvic circulatory disturbance has been noted in Section 4.7. Here its primary glandular identity as a nerve distributor is established.

The testes and broader male reproductive glands appear in the readings in relation to the general concept of the "genitive system" — a term used across several readings to encompass the sexual and reproductive organs of the male body. Pathological involvement is usually described as secondary to hepatic-renal-pelvic circulatory disturbance. Swelling in "the areas about the prostate and portions of the scrotum" as a consequence of renal-to-urinary-canal circulatory disturbance is described in reading 1607-1.

Nerve Supply to the Pelvic Organs

The readings identify the lumbar and sacral vertebral centers as the primary nerve supply governing the pelvic organs, with the coccygeal centers and the ileum and sacral plexuses as the local nerve networks through which this supply reaches the pelvic organs. Inflammation in the pelvic organs produced by "lesion in lower lumbar and in sacral" is described in reading 49-1. Reading 272-1 identifies "the plexus of the 4th lumbar" as causing "an overactivity to the system as relating to the character of the effluvia thrown off in the functioning of the organs of pelvis." Reading 549-1 attributes the drying condition in the left ovary and tube to "subluxations in the 11th and 12th dorsal area" that "gradually lessened the impulse for activity during the periods of eliminations through the menses." Another reading traces pathology to "the circular lesion in the 2nd lumbar, and the suppression of the functioning of organs in the pelvis" (3721-1).

Reading 1140-2 describes "the activity upon the coccyx ends of the nerves about the portions of the lower cerebrospinal system WITH the 4th lumbar axis" as the complete nerve-supply territory for the pelvic organs. The coccyx is identified in several readings as providing a terminal extension of the cerebrospinal system into the pelvic floor, and manipulation of the coccygeal area — along with the lower lumbar and sacral centers — is a consistently recommended therapeutic approach for pelvic organ disorders. The sacral plexus receives specific identification as the nerve network most directly governing the pelvic organs' circulatory and muscular coordination. Its governance extends to the lower extremities, which explains why pelvic organ pathology so consistently produces lower back pain, hip heaviness, and leg symptoms.

Physiology

The Pelvic Organs as a Glandular System

One of the most conceptually significant features of the readings' treatment of the pelvic organs is their consistent characterization as a glandular system. They are not merely reproductive organs in the mechanical sense, but glandular structures whose secretory activity governs a range of bodily functions extending well beyond reproduction. Reading 571-1 states: "this deals with the eliminations as related to the developments of the sex organs of the body — or the genitive system. For, with these reactions those glands in the pelvic organs MUST produce their coordinations with the nervous system, the activity throughout the functioning of elimination coordinated." The pelvic organs are thus positioned as participants in the body's eliminative function, coordinating with the nervous system through their glandular secretions.

Reading 421-1 distinguishes between "ductless glands" (endocrine) and "reproductive glands" within the pelvic organ system. "The organs of the pelvis show the overactivity in ductless glands or subnormal activity in the reproductive glands." This suggests that the readings recognized a distinction between the endocrine function of the pelvic glands (operating through ductless secretion into the blood) and their more specifically reproductive function. This distinction maps approximately onto the modern differentiation between the endocrine (hormonal) and exocrine (gamete-producing) functions of the gonads.

The mammary glands are identified in several readings as extensions of the reproductive glandular system. "This is indicated through the glandular forces; especially the mammary glands, which is created in the activity of the glands of reproduction — or the sexual activities," reading 1158-17 states. Reading 635-6 places

"the pelvic organs, in the mammary glands, in most of the nervous CENTERS from which EMOTIONS arise" in the same category of structures affected by incoordination between the sympathetic nervous system and the organs. This suggests a functional and anatomical grouping of pelvic organs and mammary glands as members of the reproductive glandular system.

The Leydig (lyden) gland is identified in several reproductive readings as the source of the creative and reproductive vital forces. "The spiritual arises from the centers in the Lyden or leaden [Leydig or Leydigian] glandular forces that are as hidden energies, or the very nature of the creative or reproductive forces," reading 1389-1 describes. Reading 281-38 addresses the Leydig gland's relationship to "reproduction, degeneration, regeneration" as the source of glandular forces that operate not only in the physical body but in the mental and soul bodies. The fuller treatment of the Leydig gland belongs to Section 4.9 and Appendix A (Part 2). Its mention here establishes its connection to the reproductive system as a link in the chain between pelvic organ function and the higher endocrine-nerve axis.

Relationship to the Nervous System

The readings consistently frame pelvic organ function as dependent on and expressive of the state of the nervous system. The pelvic organs communicate with both the sympathetic and cerebrospinal systems through the lumbar, sacral, and coccygeal nerve centers. Disturbance in any of these centers produces corresponding dysfunction in the pelvic organs. "The condition through the pelvic organs and their functioning" is described in reading 3-1 as "an expressive condition of the nerve forces and the blood conditions with the nerves in their impinged condition" — establishing the

pelvic organs as a site where systemic nerve and blood impairment becomes locally expressed.

Cerebrospinal-sympathetic coordination is essential to reproductive organ function, as reading 2432-1 specifies: "the physical reactions of the glandular system's activities, as related to the general physical forces and specifically as to the action in the reproductive organs, are reflected in centers where cerebrospinal and sympathetic nervous systems coordinate; giving off reflections at periods in the locomotory coordination." The pelvic organs thus serve as a mirror of the nervous system's coordination. When the two systems coordinate properly, the reproductive organs function normally. When coordination fails, the pelvic organs manifest the incoordination through irregular menstruation, discharge, pain, and displacement.

Relationship to the Hepatic Circulation

The readings consistently identify the hepatic circulation — the liver-kidney regulatory axis — as a primary determinant of pelvic organ health. Pelvic organ adhesions produce disturbances that "make for a disturbance to the digestive system. This, then, is more of a reflex condition than a direct cause, though at times produces as much distress as though it were the cause" (260-1). The reverse pathway is equally well described. Hepatic dysfunction imposes a toxic burden on the pelvic organs through the circulation. Reading 313-17 identifies "poisons" from systemic hepatic-circulatory disturbance as affecting the left ovary "sympathetically." Reading 1140-2 provides the most detailed account of this bidirectional relationship: "When toxic forces arise in the body from the inflammation through the abdominal area, or through the uterus itself, combined with the disturbances through lack of proper eliminations in the alimentary canal, THEN we have a sparse

activity" in the hepatic-renal regulatory axis. Pelvic organ inflammation thus feeds back into the hepatic circulation and reduces renal eliminative capacity — creating a self-reinforcing cycle of toxemia that is characteristic of the readings' systemic view of pelvic pathology.

Menstruation as a Physiological Process

The readings treat menstruation as an eliminative process through which the female body discharges accumulated products of the glandular and reproductive cycle. Suppression of menstruation — whether from cold, nerve impairment, or physical displacement of the pelvic organs — is consistently treated as pathological because it prevents this eliminative release and forces the body to attempt elimination through other channels. Reading 295-3 describes conditions arising from "pressures and those conditions existent in the pelvic organs as related to eliminations through the periods, or menses" that "have especially to do with those of the nerves' reactions in the body, and are in the position of making permanent lesions unless corrected" — a characteristic warning about uncorrected functional conditions transitioning to organic ones.

Reading 538-8 describes how menstrual disruption at the perimenopausal transition combined with the "condition existing in the pelvic organs" and dietary factors produces a toxic overload that the normal eliminative channels cannot handle, forcing the body to discharge toxins through the capillary circulation and skin.

Reproduction and Conception

The readings address reproduction as a physiological process governed by the glandular vitality of the ovaries and, in the male, by the generative function of the testes and prostate. Failure of conception is identified in reading 2432-1 as arising from a

deficiency in ovarian glandular production rather than from structural blockage. The ovaries "have that lack of the production in such a manner as to fulfil the complete activity of the ovaries in their charge." Reading 349-22 describes the goal of treatment as "overcoming those tendencies which have existed that prevent the more perfect activity in the functioning of the ovaries themselves, as related to forming and giving the proper association of semens for those activities which produce or bring about reproduction in the system."

Reading 1523-1 addresses a "false conception" (ectopic pregnancy) as producing congestion in "the tube (that is left — there's one) that of CONGESTION" — acknowledging the anatomical reality of single-tube function after prior surgical intervention, with the remaining tube showing the consequence of abnormal implantation. This is one of the more clinically specific passages in the reproductive readings and illustrates the level of physiological detail the readings were capable of providing.

Pathology

Adhesions

Adhesions in the pelvic organs are the most consistently identified structural pathological condition throughout the pelvic readings. The readings describe adhesions as forming through several mechanisms: cold and suppression during menstrual periods (producing inflammation that resolves into adhesive tissue), prior injury from pregnancy or childbirth, surgical trauma, and systemic inflammatory processes reaching the pelvic region through the hepatic-lymphatic circulation. Reading 338-1 identifies "adhesions and pressures in the pelvic organs" as the developing causes of systemic disturbance. Reading 542-1 describes how "adhesions in the pelvic organs prevent the proper absorption from that

assimilated, thus reducing the blood from its normalcy." Reading 260-1 traces pelvic adhesions as the "basis or the specific conditions, causing irritations that disturb the glands in the kidney area and producing a reflex to the hepatic circulation."

The effects of pelvic adhesions propagate through several pathways: mechanically (restricting the movement and positioning of the pelvic organs), circulatorily (impairing blood and lymph flow through the pelvic region), nervously (creating lesions and pressures in the lumbar-sacral nerve centers), and reflexly (generating disturbances in the hepatic, renal, and digestive systems through the sympathetic nerve connections). Reading 549-1 describes this progressive chain in detail. Subluxations at the 11th and 12th dorsal impair nerve supply to the tubes, producing drying and inflammation, which in turn creates adhesive conditions running along "the internal nerves that affect or make pressures to the portions of the lymph and emunctory circulation through the internal organs."

Displacement and Positional Conditions

Uterine and pelvic organ displacement — prolapsus, retroversion, anteversion, tipping — appears across many readings, echoing the displacement pathology described for the stomach, colon, and other abdominal organs in earlier sections. Reading 467-1 gives the most detailed account. During menstruation with cold and congestion, "the effect to the body was for a contraction in the pelvic organs, for the turning of the womb itself in such a position that the nerve influences have tended to keep the organ in this position." The displacement is initiated by a muscular contraction in response to an acute inflammatory episode, then perpetuated by the distorted nerve pattern that forms around the displaced position. Reading 2287-1 identifies uterine displacement as causing the "muscular

forces in same to be relaxed so that with long standing or walking at times" there is discomfort — connecting the positional disturbance to the ligamentous and muscular laxity of the pelvic floor.

Inflammation, Congestion, and Catarrh

Inflammation and congestion in the pelvic organs are described across many readings as consequences of systemic toxemia, impaired hepatic-renal circulation, and local nerve-supply impairment. The readings consistently identify pelvic inflammation as producing two types of secondary discharge: leucorrhea (a mucous or purulent vaginal discharge of varying character) and excess or suppressed menstrual flow. Reading 1306-2 identifies a "condition in the pelvic organs is of a neuralgial nature, and causes a general discharge in the form of leucorrhea," producing systemic nervous irritation. Reading 538-6 describes inflammation arising from nerve center impairment in the lower dorsal region producing "secretions [leukorrhea?] that are abnormal to the body."

Reading 2520-2 provides one of the most detailed accounts of the mechanism by which systemic conditions produce local pelvic inflammation. A deficiency in the white blood supply produces "a form of congestion which at times attacks mucous membranes of the body," with the pelvic organs being specifically involved because of "changes that are being wrought in the functionings and the activities of the glandular system as related to periods, or the menstrual flow, and the activity upon the ovary and to the tubes themselves." The inflammatory process in this reading is tracked from a blood-quality deficiency through mucous membrane congestion to specific pelvic organ involvement — a chain reflecting the readings' systemic rather than local understanding of pelvic pathology.

Growths, Cysts, and Tumors

The readings acknowledge the existence of growths, cysts, and tumors in the pelvic organs, treating these as endpoints of a process that begins in functional impairment and adhesion formation. "The very nature of adhesions from impoverishment — and from an overabundance of those forces that should be eliminated gradually accumulating — makes for at times enlargements that might become growth," reading 542-1 states. Reading 1320-1 addresses the use of electrotherapy for "the eliminations of those tendencies for adherences in the pelvic organs" — treating the tendency toward adhesion and growth formation with physical therapy before it becomes structural. The readings' consistent position is that growths in the pelvic organs originate in the same systemic conditions — impaired elimination, adhesion formation, and blood impoverishment — that produce the milder inflammatory and displacement conditions described above.

Reflexes from the Pelvic Organs

Pelvic organ pathology generates a characteristic pattern of reflex effects throughout the body. Reading 260-1 identifies pelvic adhesions as producing disturbances that "make for a reflex condition" through the hepatic circulation affecting the digestive system. Reading 243-3 describes how pelvic organ strain produces "pains across the back, to the base of the brain, the dizziness" — the reflex ascending through the lumbar-sacral centers to the cerebrospinal axis. Reading 635-6 places the pelvic organs alongside the mammary glands and the "nervous CENTERS from which EMOTIONS arise" as structures jointly affected by sympathetic-organ incoordination, establishing a direct pathway between pelvic dysfunction and emotional-sensory disturbance.

The readings' treatment of the pelvic organs' reflex connections to the sensory system — particularly to vision and hearing — through the sympathetic nerve chain represents one of the more distinctive features of the readings' systemic anatomical framework. Consistent with the general principle established in earlier sections that impaired elimination in a primary channel produces reflex effects in the sensory organism, pelvic organ congestion and toxicity are identified in several readings as contributing to visual disturbance, ear symptoms, and general sensory irritability through the sympathetic reflex pathways.

Modern Context

In modern anatomy, the female pelvic organs include the uterus (divided into the fundus, body, and cervix), two fallopian tubes (also called uterine tubes), two ovaries, the vagina, and their associated ligamentous and muscular support structures in the pelvic floor. The male pelvic organs include the prostate gland, seminal vesicles, vas deferens, and associated structures, with the testes located extraperitoneally in the scrotum.

The readings' characterization of the ovaries as glands whose secretory products govern reproductive capacity corresponds to the modern understanding of the ovaries as endocrine organs producing estrogen and progesterone governing the menstrual cycle, uterine preparation, and secondary sexual characteristics, as well as exocrine organs producing ova. The readings' identification of ovarian "ossification" or progressive loss of secretory vitality as a pathological condition corresponds to the modern concept of premature ovarian insufficiency — the early decline of ovarian function before the natural age of menopause, resulting in irregular cycles, reduced fertility, and hormonal deficiency.

The readings' concept of the Leydig gland as the source of the body's creative and reproductive vital forces corresponds partially to the modern Leydig cells of the testes — the interstitial cells that produce testosterone under stimulation from luteinizing hormone. The readings, however, use "Leydig" to refer to a distinct glandular structure in the gonadal axis that also has spiritual and energetic dimensions beyond testosterone production. A fuller discussion is included in Section 4.9 and Appendix A (Part 2).

The prostate's characterization in the readings as governing "the distribution of the nerve forces through or to the lower portions of the body" does not correspond to the prostate's recognized modern anatomical function, which is primarily exocrine — producing prostatic fluid as a component of semen. However, the prostate's anatomical position in the lower pelvis, immediately surrounding the urethra and resting on the pelvic nerve plexuses, does make it functionally relevant to the distribution of nerve activity in the lower pelvic region. Prostatic enlargement, for example, can produce pressure on the sacral nerve plexus and disrupt bladder and lower extremity function — a modern clinical reality that partially reflects the readings' characterization of the prostate as a nerve-governing structure.

The readings' treatment of menstruation as a primary eliminative process whose suppression produces systemic pathology reflects a physiological perspective common in early-twentieth-century medicine — particularly in naturopathic and osteopathic traditions — in which the menstrual flow was understood as a vehicle for eliminating endometrial tissue, excess blood, and metabolic waste products. Modern gynecology confirms that menstruation involves the elimination of uterine endometrium, blood, and secretory products, and that menstrual suppression (amenorrhea) is

associated with a range of systemic hormonal consequences. The specific pathological cascade the readings describe — from menstrual suppression through lymphatic and hepatic-circulatory congestion to systemic toxemia — has no precise modern equivalent but corresponds in general terms to the hormonal and metabolic consequences of anovulatory amenorrhea (Critchley et al., 2020; Klein et al., 2019).

The readings' identification of adhesion formation as the primary structural pathological mechanism in the pelvic organs — arising from prior inflammation, cold, suppression, or injury — corresponds precisely to the modern understanding of pelvic adhesions as major causes of pelvic pain, menstrual irregularity, infertility, and ectopic pregnancy. Pelvic inflammatory disease, endometriosis, and post-surgical scarring are the most common modern causes of pelvic adhesions, all involving the same mechanism of inflammatory tissue repair producing fibrous bands that bind normally separate structures — precisely the process the readings describe as the primary pelvic pathological mechanism.

The nerve supply to the pelvic organs identified in the readings as arising from the lower lumbar (L1–L4), sacral (S1–S4), and coccygeal centers, operating through the sacral and iliac plexuses, corresponds accurately to the pelvic splanchnic nerves (parasympathetic, S2–S4), the lumbar sympathetic supply, and the pudendal nerve (S2–S4) recognized in modern neuroanatomy as the primary nerve supply governing the pelvic organs' secretory, vascular, and muscular functions. The readings' identification of the coccygeal area as providing a terminal contribution to pelvic nerve supply corresponds to the coccygeal plexus recognized in modern anatomy as providing sensory fibers to the skin of the coccygeal region and contributing to the pelvic nerve network.

4.9 The Glands

Overview

The glandular system — and the endocrine glands in particular — in certain respects represent some of the most expansive material of any anatomical topic addressed in the physical readings. More significantly, the readings treat the glands not merely as organs of physiological secretion but as the body's primary mechanism of cellular self-renewal, as the interface between the physical body and the mental-emotional life. In a dimension unique to the readings among anatomical frameworks — glands are the physical substrate through which the soul inhabits and expresses through the body. No other organ system in the readings carries this full range of significance.

Reading 281-38, which represents the most sustained and systematic discourse on the endocrine glands in the entire physical readings, was given in response to a direct request for "a discourse on the endocrine glands of the human organism, discussing their functions in relation to physical body and their relations to the mental and spiritual forces." The response to that request frames all that follows in this section. The readings do not treat the endocrine glands as they treat the liver or the kidney — as regulatory organs with specific chemical and eliminative functions. They treat the glands as the body's link to something beyond the chemical: to the forces of generation, regeneration, and spiritual development that the readings regard as the deepest purposes of human embodiment.

4.9.1 Glands in General

The Universal Glandular Function: Cellular Self-Reproduction

The readings offer a definition of glandular function that is both comprehensive and philosophically distinctive. Reading 281-38 asks and answers the foundational question:

What are the activities of the glands? Most every organ of the body may be considered a gland, or at least there must be within the functioning activity of each portion — as the eye, the ear, the nose, the brain itself, the neck, the trachea, the bronchi, the lungs, the heart, the liver, the spleen, the pancreas — that which enables it to perform its duty in taking FROM the system that which enables it to REPRODUCE itself! That is the functioning of the glands! (281-38)

This definition — "taking FROM the system that which enables it to REPRODUCE itself" — establishes glandular function as equivalent to cellular self-reproduction. Every organ has a glandular component in this sense: the capacity to take from the blood and assimilative system the materials necessary to renew its own cellular substance. This is a broader conception than the modern endocrine/exocrine distinction. Glandular function in the readings encompasses both ductless (endocrine) secretion into the blood and the more general capacity of any organ tissue to perform the cellular renewal that keeps it vital and functional.

The readings use the term "resuscitation" extensively in this context. Glands "resuscitate" vital forces in the lymph, capillary, and arterial circulation by producing the secretions that enable cells to renew themselves. Reading 456-3 describes the necessity for "the system to be able to resuscitate vital forces in the lymph, in the capillary circulation, in the arterial circulation" as being "based first,

primarily, on the character of assimilation and the number or the count of the plasm [plasma] going to make up the various elements." Glandular vitality is thus the bottleneck through which all circulatory and assimilative processes must pass for cellular renewal to occur.

Endocrine and Exocrine: Ductless and Duct-Bearing Glands

The readings recognize the distinction between glands that secrete through ducts (exocrine glands) and those that secrete directly into the blood without ducts. The term "ductless glands" is the readings' standard designation for what modern medicine calls the endocrine system, appearing with great consistency throughout the readings addressing this system.

The readings consistently treat the ductless glands as the more significant category for systemic health regulation — the thyroid, adrenals, pineal, pituitary, thymus, Leydig (lyden), and gonads are the primary endocrine structures. They are described as governing not only metabolism but the body's emotional responses, its mental activities, its reproductive capacity, and its spiritual sensibilities. The broader class of organs with glandular components (liver, spleen, pancreas, intestinal glands) has been addressed in the preceding organ sections. This section focuses on the ductless endocrine glands proper.

Glandular Secretions, Emotions, and the Whole System

One of the most far-reaching principles in the readings' glandular account is the identification of emotional states as direct stimulants of glandular secretion — and of glandular secretion as the physical mechanism through which emotions affect the whole body. Reading 281-38 states: "there is an activity within the system produced by anger, fear, mirth, joy, or any of those active forces, that produces

through the glandular secretion those activities that flow into the whole of the system. Such an activity then is of this endocrine system." This passage is among the most direct statements in all the readings that the endocrine system is the physical interface through which psychological states — emotions of all kinds — become physiological events. The endocrine glands translate emotional experience into chemical secretion, and the secretion circulates throughout the body, affecting every organ and tissue.

Reading 281-38 extends this principle to hereditary transmission: "The glandular forces then are ever akin to the sources from which, through which, the soul dwells within the body." The same reading addresses the issue directly: "what effect does it have upon you to even get mad, to laugh, to cry, to be sorrowful? All of these activities affect not only yourself, your relationships to your fellow man, but your next experience in the earth!" The glands are thus identified as the mechanism through which the experiences and attitudes of one life — including the emotional and spiritual states of the individual — are transmitted forward into the glandular development of future generations.

Glandular Incoordination as a Primary Pathological Mechanism

Across the clinical readings, glandular incoordination — the failure of the endocrine glands to function in proper coordination with one another and with the nervous system — is one of the most frequently identified root causes of systemic disease. The glands must not only secrete their own products adequately but must coordinate with each other. An overactive thyroid combined with underactive adrenals, for example, produces a different pathological pattern than either alone. Reading 1026-1 identifies "that balance necessary in the influences or activities of secretions produced in glands, and the resultant effect of the unbalancing causes disturbances in the body"

as the central mechanism. Reading 434-1 describes "a deficiency in the elements necessary for the better balancing in the body of all functionings of organs as related to secretions from glands of the body" as a recurring finding.

The readings treat glandular balance as dependent on two foundations: adequate nerve supply from the cerebrospinal and sympathetic systems (which provide the governing impulse for glandular secretion, just as they do for all other organs), and adequate assimilative supply of specific mineral elements — particularly iodine for the thyroid, and various mineral elements for the adrenals and other glands.

The Seven Spiritual Centers

The most distinctive and philosophically significant feature of the readings' glandular framework is the identification of seven specific endocrine glands as "spiritual centers" — the physical counterparts of what various religious and esoteric traditions have called chakras, spiritual centers, or energy vortices in the body.

The readings connect this seven-gland scheme to the Book of Revelation's seven churches of Asia, to seven planetary influences, and to seven levels of spiritual development — a multi-dimensional framework that is more fully the province of the readings' spiritual and metaphysical content than of the present anatomical text. For the purposes of this chapter, it is sufficient to establish that the readings identify these seven glands as the physical organs through which spiritual forces enter and express through the human body, and that this identification shapes the readings' treatment of each gland as having both a physical physiological function and a corresponding spiritual-psychological dimension. Each subsection below notes both dimensions for each gland.

4.9.2 The Thyroid Gland

Anatomy

The thyroid located in the neck region is consistently associated in the readings with the cervical vertebrae — particularly the 3rd, 4th, and 5th cervical — and with the upper dorsal area. Reading 865-2 identifies "lack of thyroid secretion" and prescribes pressure manipulation in the "3rd, 4th, and 5th cervical" as the primary therapeutic approach, confirming the cervical nerve supply as the governing territory. Multiple readings note the thyroid's position in the throat region and its proximity to the trachea and larynx, whose symptoms — chronic throat irritation, hoarseness, difficulty swallowing — are identified in many readings as reflex consequences of thyroid dysfunction.

Physiology

The readings identify the thyroid's primary physiological role as governing metabolism — the general rate and character of the body's chemical activity. Thyroid overactivity produces "a strain, or a drain, upon the blood supply through its overactivity in the thyroids," exciting "the whole nervous system in many ways, drawing on the blood supply, producing the lack of the proper secretions and activity in other organs" (620-2). Thyroid underactivity produces metabolic sluggishness, tendency toward excess weight, impaired calcium metabolism, and a reduction in the overall vitality of the glandular system. Reading 865-2 identifies thyroid deficiency as producing "superalkalinity in a portion of the system; causing the effect of arthritic tendencies in the activity to the circulation in the extremities" — connecting hypothyroid states directly to the acid-alkaline balance discussed in Chapter 2.

The thyroid's relationship to iodine is one of the most consistently described specific nutritional-glandular relationships in the readings. Iodine is consistently identified across many readings as the specific mineral element on which thyroid secretion depends. Reading 455-1 identifies "a deficiency in the glands' activity of iodine in the proportions that would make for a balancing of eliminations" as the specific nutritional cause of thyroid insufficiency. The readings' therapeutic recommendation across many cases is Atomidine — an iodine preparation — administered in carefully timed small doses to gradually normalize thyroid function without overstimulating it.

The thyroid also governs the development of secondary sexual characteristics and the coordination of the reproductive glandular system. Reading 2680-1 identifies inadequate mammary gland development as "the suppression of the glandular force from the thyroid as pertaining to the mammary glands," and superfluous hair growth as arising from "the glandular disturbance to an excessive activity in thyroid" — both manifestations of thyroid-reproductive glandular dysregulation. Reading 1846-1 notes that thyroid disturbance "has caused the glandular forces, as related to the organs of the pelvis, to be abnormal at times in their activity."

Pathology

The readings recognize both hypo- and hyperthyroid states in several readings clarifying which direction is present. Goiter — the physical enlargement of the thyroid — is described in reading 5223-1 as arising from "inactivity of the thyroid glands, until in the accumulations there are those tendencies towards an ingrowing goiter." The readings' approach to thyroid pathology consistently traces the primary cause to impaired cervical nerve supply and

secondary causes to iodine deficiency and glandular incoordination within the endocrine system.

4.9.3 The Adrenal Glands

Anatomy

The adrenal glands are identified in the readings as located above the kidneys — "the glands about the kidneys" or "the glands above the kidneys" — consistent with their anatomical position atop the renal capsule. Reading 202-4 confirms that "the functioning of the glands about the kidneys — the adrenal glands — these are much more in a normal force or reaction" following corrections at the 8th and 9th dorsal, establishing both their anatomical location and their governing spinal nerve supply. The readings identify the 9th and 10th dorsal vertebrae as the primary nerve supply centers for the adrenal glands, with the 8th dorsal sometimes included in the governing range. Reading 3098-1 specifies treatment "over the area from the sacral to the brachial centers" with particular attention to "the area of the 9th and 10th dorsals" as the method for relieving "tensions on the adrenals." This corresponds directly to the dorsal nerve supply territory identified for the liver and pancreas, confirming that the adrenals share the mid-dorsal governing territory of the hepatic-digestive axis.

Physiology

The readings assign the adrenal glands a distinctive double function. On the physical side, they govern the distribution of nerve energy through the sympathetic system — particularly in relation to the body's response to emotional stimuli. Reading 383-1 identifies the adrenals as "the adrenal or glands of distribution in eliminating system." Reading 3098-1 states that "the adrenals affect the association of sympathetic and cerebrospinal nervous system" —

placing them at the precise interface between the two nervous systems that is so central to the readings' physiological framework.

The adrenals are explicitly linked to the emotional states of fear and anger in multiple readings, with reading 2551-1 identifying "the fear that arises from the deflected emotions through the adrenals and the pineal" as a causal mechanism. Reading 470-14 directs attention to "supplying food values for an activity from the production of adrenaline in the system" — specifically naming adrenaline as the adrenals' secretory product and identifying dietary support as a means of normalizing its production. The readings' use of "adrenaline" for the adrenals' hormonal output reflects familiarity with the then-recently identified hormone, which had been isolated and named in the late nineteenth century and was well known at the time of most readings.

The adrenal-kidney relationship is addressed throughout Section 4.7 and receives further elaboration here. The adrenals' proximity to and physiological coordination with the kidneys means that adrenal dysfunction frequently manifests in renal consequences, and vice versa. Reading 388-1 states that "the adrenal glands show for a weakening of the functionings of the kidneys as related to their eliminations of poisons" — identifying adrenal insufficiency as a direct cause of renal underfunction. Reading 560-2 describes how adrenal dysfunction produces secretions that "harden or solidify," creating "such irritation in the hepatic circulation as to strain the changes between the arterial and venous circulation."

Pathology

The adrenal glands are described as susceptible to both overactivity and underactivity, with different systemic consequences. Adrenal overactivity — driven by emotional excess, chronic stress, or spinal impingement — produces excess adrenaline output, heightened

sympathetic nervous system activity, and eventual adrenal exhaustion. Adrenal underactivity produces deficient nerve distribution through the sympathetic system, sluggish metabolic response, and — when combined with thyroid underactivity — a pattern of general systemic depression and incoordination producing diverse and seemingly unrelated symptoms across multiple organ systems. Reading 2998-1 describes subluxations at puberty producing "a deflection of the activities of the glands in the thyroid, the gonad, the adrenals," resulting in "incoordinations between the superficial and sympathetic AND the cerebrospinal or central nervous system" — illustrating how adrenal dysfunction at a formative developmental moment produces lasting systemic incoordination.

4.9.4 The Pituitary Gland

Anatomy

The pituitary gland is identified in the readings as located at or near the base of the brain. Reading 3974-1 places it in relation to "the Leydig gland and the pituitary and pineal glands" as governing centers "connected direct" through the lumbar region to the brain. The pituitary's anatomical position at the base of the brain, in proximity to the medulla oblongata and the 1st cervical, makes it the highest glandular relay between the brain centers proper and the cascade of endocrine glands below.

Physiology

The pituitary occupies the summit of the endocrine hierarchy in the readings. Reading 831-1 identifies excessive pituitary growth activity as the cause of abnormal height: "The growth of the pituitary gland activity" — recognizing the pituitary's role in governing skeletal growth. The same reading describes "an elongation of the

activity of the adrenal as related to the pituitary" as a developmental cause of subsequent systemic incoordination. Multiple readings identify the pituitary as the gland whose proper function is required for coordination of the entire glandular system. Reading 830-3 describes how impingements in the "4th lumbar and the coccyx area" have "prevented a normal activity of the pituitary to the adrenals' activity in the system" — showing the pituitary-adrenal axis as a critical governing relationship in both directions.

Pathology

Pituitary dysfunction appears in the readings primarily as a consequence of nerve center impairment at the lower lumbar and coccygeal levels that disrupts the pituitary-adrenal governing axis rather than as primary pituitary disease. Reading 831-1's identification of abnormal growth as arising from excessive pituitary activity illustrates the organ's pathological capacity. Reading 830-3's description of lumbar and coccygeal impingements preventing normal pituitary-adrenal coordination illustrates the characteristic upstream causation. As with all the endocrine glands, the readings tend to treat pituitary dysfunction as functionally produced and functionally correctable when the governing nerve supply and glandular coordination are restored.

4.9.5 The Pineal Gland

Note: This brief discussion of the pineal is limited to its profile as a discreet glandular entity in the same manner as the other glands in this section. Appendix A addresses the pineal in its broader context as the namesake of a psychoneuroendocrine network, the "pineal system."

Anatomy

The pineal gland is identified in the readings as a gland of the brain — located deep within the cranial cavity in association with the base of the brain and the 1st and 2nd cervical vertebrae. Reading 567-1 describes "the PINEAL center is engorged, especially at the 3rd and 4th LUMBAR and the 1st and 2nd cervical" — a passage that can be puzzling, since the pineal is physically located in the brain. The readings' reference to lumbar and cervical nerve centers in relation to the pineal appears to reflect the nerve reflex pathways through which the pineal is connected to the lower glandular system, rather than its anatomical location. Reading 140-1 describes the process whereby "the reaction in sympathetics is to carry this pressure in — to the pineal gland at the base of the brain" from a lesion in the 4th and 5th dorsal — illustrating the ascending sympathetic reflex pathway that brings information from the lower body to the pineal.

Physiology

The pineal is identified in the readings, alongside the Leydig gland, as the "SEAT of the soul of an entity" — the most elevated and significant statement made about any anatomical structure in the readings (294-142). It is described as the terminal center through which the life force arising from the Leydig and the gonads ascends to express in the highest spiritual faculties. Reading 281-53 confirms: "The life force rises directly from the Leydig gland through the Gonads, thence to Pineal, and then to the other centers." The pineal thus functions as the uppermost physical relay in the body's spiritual energy circulation.

In physical terms, the pineal participates with the adrenals in governing the emotional and fear-reflex responses of the body. Reading 2551-1 identifies "fear that arises from the deflected emotions through the adrenals and the pineal" as a co-occurring

disturbance. Reading 262-20 identifies the pineal as the "spiritual eye" or "third eye" — the organ of spiritual perception — stating: "there is the activity of the pineal eye to the sensory system, as to DISCERNMENTS through the mental and physical reactions of the body." The pineal's association with meditation and psychic development is the most consistent feature of its treatment in the spiritual readings.

Pathology

Reading 3997-1 addresses dementia as arising through specific nerve pressure impacting the normal development of the pineal gland and its connection to the Leydig center, "producing such depression and activity to the action of the imagination, or the activity of the gray matter in nerve reaction, until dementia is the result." This passage — which also appeared in Section 4.2 in the context of brain pathology — illustrates that the pineal's pathological consequences extend into neurological and psychiatric conditions when its connection to the lower glandular system is disrupted. In reading 567-1, the pineal is described as "engorged," an unusual characterization suggesting congestion or overactivity in its vasomotor nerve center connections — a condition traceable to impingements at the lumbar and cervical levels rather than to primary pineal disease.

4.9.6 The Thymus Gland

Anatomy

The thymus is identified in the readings as located in the chest, in association with the heart — described in reading 281-47 as "the thymus — or the pump gland of the heart itself." This anatomical designation is one of the readings' most distinctive characterizations of any glandular structure. It places the thymus in a developmental

hierarchy: "first the pineal, the aerial, the adrenals, the thymus — or the pump gland of the heart itself" — positioning it as the cardiac-level member of the upper endocrine chain.

Physiology

The identification of the thymus as the "pump gland of the heart" suggests the readings understood the thymus as governing or supporting the heart's pumping activity — not merely as a lymphoid organ but as a glandular structure whose secretions directly influence cardiac function. The thymus's proximity to the heart and great vessels in the anterior mediastinum makes this association anatomically coherent. Beyond its cardiac relationship, the thymus is addressed in several readings as a member of the glandular coordination system with the thyroid and adrenal, and its dysfunction is described as contributing to the broader pattern of glandular incoordination. Reading 1216-1 addresses the thymus alongside the thyroid and adrenal as members of the primary glandular axis governing metabolism and katabolism.

Pathology

The readings do not address thymus pathology with the specificity devoted to the thyroid, adrenals, or pituitary. Its identification within the glandular incoordination framework — as a member of the coordinated endocrine system — implies that thymic dysfunction participates in the general pattern of systemic glandular imbalance. The readings' characterization of the thymus as a vital cardiac-level glandular structure suggests that its underactivity would contribute to the pattern of cardiovascular and metabolic depression described across the glandular system generally, though the readings do not identify specific thymic pathological states in the manner they do for the thyroid or adrenals.

4.9.7 The Leydig (Lyden) Gland

Note: As with the pineal discussion above, this is a snapshot of this gland's anatomy, physiology, and pathology with an extensive treatment reserved for Appendix A (Part 2: The Pineal System).

Terminology and Anatomy

The Leydig (or lyden) gland is one of the most conceptually distinctive and anatomically ambiguous structures in the readings. The readings use the terms "Leydig," "Leydigian," "lyden," and "leaden" interchangeably for what appears to be a single glandular entity. Reading 281-53 clarifies the terminological relationship: "The leydig gland is the same as that we have called the lyden... Lyden is the meaning — or the seal, see? while Leydig is the name of the individual who indicated this was the activity." The term "lyden" thus reflects the gland's functional identity as a "seal" — an enclosed or latent center — while "Leydig" is the eponym of its modern anatomical discoverer.

Regarding the Leydig gland's location, reading 281-53 states: "It is in and above, or the activity passes through the gonads." The activity of the Leydig gland passes through the gonads (the testes or ovaries), and this gland is anatomically associated with the gonadal region while being identified as a distinct entity that is "in and above" rather than identical to the gonads. Reading 3997-1 specifies: "Located in and above the gland called the genital. In the male, above the glands corresponding to testes. In the female, that above gland responding to testes in the male."

Physiology

The Leydig gland is identified in the readings as the source of the creative life force in the body — the foundational vital energy from which all other glandular and spiritual energies arise. "For, in the

body there is that center in which the soul is expressive, creative in its nature, — the Leydig center," reading 2475-1 states. The same reading describes the ascending pathway: "As this life-force is expanded, it moves first from the Leydig center through the adrenals, in what may be termed an upward trend, to the pineal and to the centers in control of the emotions — or reflexes through the nerve forces of the body." This ascending energy pathway — from Leydig through adrenals to pineal — is the physical architecture of spiritual development as the readings understand it. The life force originates at the Leydig center, rises through the adrenals (the solar plexus center), and reaches the pineal and eventually the pituitary at the apex. Reading 281-53 confirms the sequence: "The life force rises directly from the Leydig gland through the Gonads, thence to Pineal, and then to the other centers."

Reading 294-142 provides the most complete statement of the Leydig gland's metaphysical identity:

The genitive organism is as the motor, and the Leydig as a sealed or open door, dependent upon the development or the use same has been put to by the entity in its mental, its spiritual, activity... Hence these may literally be termed, that the pineal and the Leydig are the SEAT of the soul of an entity. (294-142)

The Leydig is described as a door that can be sealed or open — sealed when the creative energy is contained and directed downward (toward physical generation), open when it is raised and directed upward (toward spiritual development and psychic expression). Reading 1468-5 identifies the Leydig as housing "the very nature of the creative or reproductive forces" and states: "There are the abilities of each center, each gland, each atom to reproduce

itself within the body — which is the very nature of glandular reaction."

The kundalini (or "kundaline") — a term the readings use sparingly but significantly — is described as the energy that flows from the Leydig center when "the Lyden (Leydig) glands are opened." Reading 3428-1 states: "when the lyden (Leydig) glands are opened, which are in the gonads — or the centers through which the expression of generation begins, they act directly upon the centers through the body." The kundaline is thus described as the energy that rises from the Leydig/lyden center through the body when this gland is activated — a concept that corresponds directly to the kundalini of yogic tradition.

Pathology

Typically, the readings do not address Leydig gland pathology in the clinical terms used for other endocrine glands. Its pathological significance lies primarily in what happens when its energy is misdirected, suppressed, or prematurely exhausted. Reading 3428-1 warns that when the Leydig's energies are opened but "find not expression they disintegrate, or through thy association cause disassociation in impulse and the central or body-nerves." Reading 4333-1 identifies the breakdown of "the plasmatic cell" in "the genitive system that is of the reproductive nature" as "the first cause" of certain systemic conditions — placing the reproductive glands at the etiological center of a class of conditions that originate in glandular exhaustion. Thus the Leydig gland's pathological dimension is more developmental and metaphysical than strictly clinical, though its exhaustion and misdirection have real physical consequences for the nervous system and reproductive vitality. The discussion of epilepsy in Chapter 5 contains information on such pathological involvement.

Notably two readings do address Leydig/lyden pathology directly. Reading 3979-1, given for a young man suffering from schizophrenia provides these details in reply to an important question:

(Q) What is the lyden [Leydig] gland and where located?

(A) Lyden [Leydig] meaning sealed; that gland from which gestation takes place when a body is created through coition, or inception, through conception of two bodies meeting in creating a body. Located in and above the gland called genital glands, see? In the male, above the glands corresponding to testes. In the female, that above gland responding to testes in the male. Here in THIS particular case, near the size of a wren's egg. Nominally should be about the size of a small pea. (3979-1)

This reading describes the Leydig/lyden as a discreet entity (not dispersed interstitial cells such as cells of Leydig) located above the genital gland (testes in the male). The other important pathological case involving the Leydig/lyden gland is also for a young man, this time a case of sexually transmitted disease:

That of which the body should be warned is that as has to do with the genitive system. Here we find conditions are the cause of the disturbances in the system. The condition allayed in part. Hence the necessity of preventing stricture, or of the condition being driven into the leyden system, and this causing destructive forces set up in the body. (849-2)

In this case the anatomy corresponds to the male sex accessory glands (such as the Cowper's glands which also happen to be about the size of a small pea). Appendix A (Part 2) provides a more extensive treatment of this topic.

4.9.8 The Gonads

Anatomy

The gonads are described as the primary physical centers of generation and reproduction, and as the structural basis through which the Leydig gland's activity is expressed. Anatomically, this is the testes in males and ovaries in females in line with standard medical views as to structure and location. The gonads' spiritual center correspondence places them as the base of the ascending energy ladder — the most physically grounded of the seven glandular spiritual centers.

Physiology

The gonads serve as the vehicle through which the Leydig's stored creative energy is first mobilized. "The life force rises directly from the Leydig gland through the Gonads, thence to Pineal, and then to the other centers," reading 281-53 states, identifying the gonads as the first link in the ascending chain. Reading 349-22 identifies the ovaries as producing "the proper association of semens for those activities which produce or bring about reproduction in the system" — treating the ovaries explicitly as the gonadal component of the reproductive-creative energy system.

Several readings note that the gonads, as the lowest of the seven centers, carry the most direct connection to the physical forces of generation and sexuality. Their relationship to the Leydig gland — the creative life force that "passes through" the gonads — establishes the gonads as both physical reproductive organs and energetic conduits for the spiritual forces that originate in the Leydig center and ascend through the body. This dual identity means that the gonads' health directly affects not only reproductive capacity but the

quality of the creative energy available to the entire ascending glandular system.

Pathology

Reading 3428-1 identifies a critical pathological principle for the gonadal energies. When the Leydig glands are opened and the energy they release "find not expression they disintegrate, or through thy association cause dis-association in impulse and the central or body-nerves." The gonadal energies thus require appropriate expression or conscious direction — without either, they produce nerve dis-association and general systemic disorder. Beyond this energetic dimension, the gonads (ovaries) appear in the clinical pathological contexts described in Section 4.8, where their dysfunction as physical reproductive glands produces the menstrual, conceptive, and pelvic organ disorders addressed there.

Modern Context

The readings' account of glandular function engages modern endocrinology at multiple points, though the two frameworks diverge significantly in their treatment of the spiritual dimensions.

The readings' foundational definition of glands as enabling each organ to "REPRODUCE itself" corresponds in general terms to the modern understanding of endocrine function as governing cellular metabolism, growth, repair, and reproduction throughout the body — with growth hormone, thyroid hormone, insulin, cortisol, and sex hormones each governing distinct aspects of cellular renewal and metabolic activity. The readings' concept of "resuscitation" of vital forces in the circulation through glandular secretion corresponds to the modern understanding of hormones as chemical messengers that regulate the metabolic state of target tissues.

The thyroid gland's identification in the readings as governing metabolism, calcium balance, and the development of secondary sexual characteristics corresponds accurately to modern endocrinology. Thyroid hormone (T3 and T4) governs basal metabolic rate, influences calcium homeostasis through its coordination with parathyroid hormone and calcitonin, and affects reproductive function through its coordination with the hypothalamic-pituitary-gonadal axis. The readings' consistent association of thyroid function with iodine supply corresponds precisely to the modern understanding that thyroid hormone synthesis requires iodine as its primary mineral substrate, and that iodine deficiency is the principal cause of hypothyroidism and goiter in populations lacking adequate dietary iodine.

The adrenal glands' identification in the readings as producing adrenaline and governing the body's response to fear and anger corresponds accurately to the modern understanding of the adrenal medulla's catecholamine production (epinephrine and norepinephrine) as the primary hormonal mediator of the fight-or-flight stress response. The readings' description of the adrenals as governing the distribution of nerve force through the sympathetic system corresponds to the modern understanding of sympathoadrenal coordination. The adrenal medulla is essentially a modified sympathetic ganglion that releases its products into the blood rather than at a synapse, creating the systemic hormonal component of sympathetic activation.

The pituitary gland's identification in the readings as the governing center of endocrine hierarchy, and its association with skeletal growth, corresponds accurately to the modern designation of the pituitary as the "master gland" of the endocrine system — producing growth hormone, thyroid-stimulating hormone, adrenocorticotrophic

hormone, follicle-stimulating hormone, luteinizing hormone, and other tropic hormones that govern the activity of virtually all other endocrine glands.

The thymus gland's identification in the readings as "the pump gland of the heart" does not correspond to its recognized modern function as a lymphoid organ governing T-cell maturation and immune surveillance. In modern anatomy, the thymus is not known to directly govern cardiac pumping. However, its position in proximity to the heart, and its known immunological influence on the cardiovascular inflammatory environment, provide a contextual basis for the readings' association. Modern research has revealed that the thymus produces hormones (thymosin, thymulin, thymopoietin) that influence immune cell development, and that thymic function declines with age in coordination with immune and cardiovascular aging — a trajectory that corresponds in principle to the readings' characterization of the thymus as a vital glandular center governing the body's heart-level functions.

The pineal gland's identification in the readings as the seat of spiritual perception, and the uppermost center in the ascending energy pathway from the gonads corresponds to a longstanding identification in diverse religious and philosophical traditions. In modern neuroscience, the pineal gland is recognized as producing melatonin — the hormone governing circadian rhythms, sleep-wake cycles, and seasonal biological patterns. The melatonin-light connection makes the pineal a true photosensitive organ in many lower vertebrates, and its melatonin production is now understood to influence reproductive timing, immune function, and neurological aging. The readings' characterization of the pineal as a center of heightened perceptual and spiritual sensitivity thus finds a

partial modern correlate in its known role as a light-sensitive, rhythm-governing neuroendocrine transducer.

The readings' Leydig (lyden) gland — described as located "in and above" the gonads, identified as the seat of the soul and the source of the creative life force — does not correspond precisely to any single modern anatomical structure. The Leydig cells of the modern testis are interstitial cells producing testosterone under LH stimulation. The readings' Leydig gland is clearly a distinct entity. The readings' description of its location "in and above" the gonads, its role as a "sealed door" governing the upward flow of creative energy, and its identification as the source of the kundaline suggest a structure associated with the gonadal region but functioning at a level that straddles the physiological and the energetic — a level for which modern anatomy does not yet have a precise counterpart. The readings themselves acknowledge this ambiguity. The lyden/Leydig gland remains one of the readings' most distinctive and least anatomically resolvable concepts.

Chapter 5: Pathology

Overview

The preceding chapters have traced the readings' account of the body in health — its blood supply, nerve system, organs, and glands — as a framework of coordinated, mutually governing systems whose proper operation produces and sustains physical vitality. Chapter 5 turns to the body in disease. Each section examines a specific pathological condition as the readings understand it: its anatomy and physiology as altered by disease, the causal chain the readings identify as producing the condition, and the clinical picture that results. Where the readings distinguish their account from contemporary medical categories — using the "true" designation to differentiate a condition from a superficially similar clinical presentation, or identifying systemic causes where local pathology appears — those distinctions are noted. The Modern Context subsection at the end of each section places the readings' account in relationship to modern understanding, in the comparative-study spirit that governs the project throughout.

Conceptually, the readings employ what might be called individualized or personalized healing: a systems approach intended to bring the systems of the body into coordination and balance rather than simply naming and treating symptoms. A reading for a twenty-five-year-old female with an ear complaint makes this point directly:

(Q) By what medical name is the ear condition known?

(A) You name it what you want to! It is the incoordination between the nervous systems. It is not a disease, it is rather a pressure produced to the sympathetic nerve centers. It is not catarrhal but it is the pressure on the centers, as a short circuiting. (3074-3)

The reluctance to assign a diagnostic label reflects the readings' characteristic orientation toward causes over categories. Yet pathology does tend to follow patterns, and pathological patterns

are given names within a clinical taxonomy. Those seeking readings — along with the physicians and family members accompanying them — often wanted a diagnosis. The readings accommodated these requests when possible, even while consistently identifying the underlying mechanisms that the named condition only partially describes. In doing so, the readings sometimes invoked the distinction between the "true" form of a condition and presentations that resemble it but arise from different causes — a distinction that carries direct therapeutic implications.

A defining feature of the readings' approach to pathology, visible across nearly every condition discussed in this chapter, is the consistent tracing of disease back to causes that lie upstream of the presenting symptoms. Epilepsy is not primarily a brain condition; it originates in peripheral structures — in the lacteal system of the small intestine in the case of true epilepsy, in the enteric nerve pathways of the colon in the colonic type, and in the reproductive-endocrine axis in the hormonal type. Migraine is not merely a vascular headache. It originates in toxic accumulation in the colon and the reflex disturbance this produces in the fifth cranial nerve and its vascular supply. Asthma is not primarily an inflammatory airway disease; it originates in structural lesions of the upper dorsal spine that disturb sympathetic vasomotor control of the bronchial and pulmonary circulation. Psoriasis is not a primary skin disease. It typically originates in thinned intestinal walls that allow toxic material to seep into the lymph and emunctory circulation, which then routes it to the skin as the body's channel of last eliminative resort.

This upstream orientation also governs the readings' differential diagnostic practice. Across multiple conditions discussed in this chapter, the readings draw a consistent distinction between the "true" form of a condition — in which the characteristic causal chain is fully established — and conditions that present with similar symptoms but arise from different causes. "True epilepsy" differs from seizure conditions of colonic or hormonal origin, and the readings are explicit that these types require different

therapeutic approaches. “True migraine” differs from headache conditions that share some of its features but not its causal anatomy. In several cases, the readings directly state that a given individual’s condition is *not* the true form of the disease under discussion, and adjust the recommended treatment accordingly. This diagnostic precision is consistent with the readings’ broader commitment to identifying causes rather than naming symptoms, and it has direct practical consequences. A treatment program designed for true epilepsy — centered on castor oil packs over the lacteal duct area, osteopathic manipulation, and passion flower compound — would be misdirected in a colonic type case, where the therapeutic emphasis falls instead on spinal adjustment, bowel regulation, and enteric support.

A further theme recurring across the conditions of this chapter is the relationship between the eliminative systems and disease. The readings consistently identify inadequate or misdirected elimination — through the bowel, kidneys, lungs, lymphatics, or skin — as a contributing factor in a wide range of pathological conditions. In psoriasis this relationship is most explicit. The skin eruption is described as the body’s intelligent deployment of the skin as a secondary eliminative organ when the primary channels are overwhelmed. In epilepsy, the relationship between bowel elimination and seizure frequency is directly stated, with inadequate alimentary canal function identified as a trigger that lowers the seizure threshold by compounding the systemic toxic burden arising from lacteal duct pathology. In migraine, toxic accumulation from colon impaction is identified as the proximate cause of the reflex nerve disturbance that produces the headache. Across all these conditions, the readings’ therapeutic programs consistently include measures to restore normal eliminative function as a foundation for addressing the specific pathological mechanism.

The sections that follow address, in order: asthma, epilepsy, migraine, and psoriasis, along with some additional pathological material covered in this chapter. Each section follows the same

structural template — abstract, introduction, definition and classification, anatomy and pathophysiology, etiology, pathogenesis, clinical features, therapeutics, comparative study, and modern context — adapted to the specific character of the condition under discussion. As with the entire book text, the readings' own language and reading numbers are preserved throughout. In addition to scattered scholarly citations and references, most of the modern medical material appears under explicitly labeled Modern Context headings and is offered as an interpretive tool rather than an evaluative standard. The goal throughout is an accurate and respectful account of what the readings say about pathology, placed in productive relationship with current scientific understanding.

A note on the author's relationship to this material: all of the conditions included in this chapter were the subject of clinical and literature research conducted by a multidisciplinary team at Meridian Institute during a period of active involvement in research, writing, and speaking on these subjects. That experience — working directly with the readings, the relevant medical literature, and clinical populations — has provided the familiarity with both the readings and the secondary scholarship that motivates and informs this chapter. The influence of the disease commentaries in McGarey's Physician's Reference Notebook (1983) and Mein's Keys to Health (1995) will be apparent throughout, and their contributions as foundational secondary sources on the readings' approach to health and pathology are gratefully acknowledged.

5.1 Asthma

Abstract

The Cayce readings on asthma consistently identify a neurovascular mechanism as the primary pathophysiological basis of the condition. Spinal lesions or subluxations — most frequently in the upper and mid-dorsal region (3rd through 7th vertebrae) —

produce pressure upon the sympathetic nerve supply to the lungs, bronchi, and associated cardiac plexus, resulting in disordered blood flow through the pulmonary and bronchial circulation. The readings describe this disordered circulation in terms of both excess (congestion, plethora, surcharging of the blood) and deficiency (slowed circulation, impaired impulse flow), and identify these vascular states as producing a tissue condition in the bronchi and lung that renders the system hypersensitive to multiple known asthmatic triggers — cold, heat, pollen, dust, emotional stress, and dietary factors. This review examines the relevant passages from the readings in detail and compares them with the modern medical literature on autonomic control of pulmonary and bronchial vascular tone, the role of vascular engorgement and edema in airway narrowing, the neurovascular hypothesis of bronchial hyperresponsiveness, and the cardiovascular-respiratory autonomic associations documented in asthma. The correspondence between the readings' neurovascular framework and current research on the vascular component of asthmatic pathology is both substantial and clinically relevant.

Introduction

The Cayce readings suggest that a single mechanism underlies the vast majority of asthmatic attacks - namely, "spinal lesions" and a facilitated neural reflex ... most commonly in the upper dorsal region; factors producing these lesions include injuries, sometimes occurring at birth, and previous lung infections. With the balance between the central and sympathetic nervous systems disrupted, any number of factors can further place pressure on the system and trigger the neural reflex causing bronchial constriction ... (Mein, 1989, pp. 74-75)

Asthma is conventionally understood as a chronic inflammatory disease of the airways characterized by episodic reversible airflow obstruction, bronchial hyperresponsiveness, and airway remodeling (Canning, 2013). The dominant contemporary model emphasizes immune-mediated inflammation, T-cell dysregulation, mast cell activation, and structural changes in the airway wall as the primary pathological processes (Barnes, 2008). Autonomic and vascular contributions to asthmatic pathology, while documented, have received comparatively less attention in clinical guidelines — a situation described pointedly by Canning and Fischer (2001), who noted that in 440 pages of National Heart, Lung and Blood Institute asthma guidelines, nerves receive only a single sentence.

The Cayce readings on asthma present a markedly different primary emphasis. Across the range of asthma readings examined here, the readings consistently identify a structural-neural mechanism — subluxation or lesion pressure in the dorsal spine — as disturbing the sympathetic nerve supply to the bronchial and pulmonary circulation, producing a vascular dysregulation that renders the lung tissue pathologically responsive to a wide variety of environmental, dietary, and emotional stimuli. This neurovascular account of asthma predates by many decades the body of modern research that has identified vascular engorgement, bronchial vascular remodeling, and autonomic imbalance as significant contributors to bronchial hyperresponsiveness. The convergence between the readings' account and this research provides both interpretive context for the readings and a potential integrative framework for understanding asthmatic pathophysiology.

The Readings' Neurovascular Account of Asthma

Spinal Lesions and Sympathetic Nerve Pressure as Primary Cause

The most consistently recurring element across the asthma readings is the identification of spinal subluxation or lesion — particularly in the upper to mid-dorsal region — as the precipitating structural cause of the asthmatic condition. Reading 85-1 is among the most anatomically explicit:

In the nerve system, in the cerebrospinal nerves, we find in the region of the 4th, 5th and 6th dorsal there has been at times back a lesion produced by subluxation of one of the dorsals themselves. The subluxation has in part been alleviated. While the strangulation to the sympathetic nerves of the secondary cardiac have not been relieved, this produces the choking as is produced in the bronchials and larynx, and the asthmatic condition as produced in lungs proper. (85-1)

The anatomical specificity of this account is notable. The 4th through 6th dorsal vertebrae correspond to the T4-T6 spinal segments, from which preganglionic sympathetic fibers originate and travel to the pulmonary plexus and cardiac plexus via the sympathetic chain ganglia (Canning, 2013). Reading 861-1 describes the same mechanism with particular clarity:

In the nervous system as related to the blood supply...a pressure upon the nerve forces that regulate the flow of blood supply and nerve energy through the brachial and bronchi and upper portion of the lung area. This pressure has gradually builded into the system until it has become a portion of the body. And the asthmatic reactions that occur when there is cold, overheat, overtiredness or a reaction to the system, are the effects of this center in the 3rd and 4th dorsal area of producing

a pressure upon the system in such a manner as to prevent the proper flow of energy. (861-1)

Two features of this passage deserve particular emphasis. First, the readings attribute the asthmatic attacks directly to impaired regulation of blood flow and nerve energy — not primarily to immune activation or smooth muscle spasm as such. Second, the passage explicitly identifies the resulting tissue state as one of heightened sensitivity: cold, heat, fatigue, and systemic reactions all trigger attacks, because the underlying vascular-neural dysregulation has rendered the bronchial tissue pathologically reactive. This is a description, in the readings' own framework, of what modern medicine calls bronchial hyperresponsiveness.

Reading 5682-1 states the circulatory mechanism with equivalent directness: "There have been those pressures created also in the cerebro-spinal system, that prevents a normal flow of blood supply to the lungs and bronchi, and an asthmatic condition is a result of same". Reading 1047-1 similarly describes a dorsal subluxation that has "impoverished the flow of the blood, or impulse" and notes that this produces "a spasmodic reaction of an asthmatic nature, either from cold or heat, too much sweets or too much of pollen or dust, too much of any of those influences that will make for an attack upon the sympathetic systems" (1047-1).

Multiple readings confirm the dorsal spinal origin of the sympathetic disturbance. Reading 227-1 identifies the 7th dorsal as producing "excess through sympathetic to the throat, larynx and bronchials, and the asthmatic effect to lung cell" (227-1). Reading 5618-12 specifies "the 7th, 6th, 4th and 5th DORSALS" as producing pressure on the sympathetic and cardiac plexus. Reading 90-1 references "segmentations in the dorsal region...5th, 6th, 7th, 4th,

3rd" as affecting heart action through the pulmonaries and producing irritation "from the first segmentation in the 5th and 6th vertebra to the lungs, and to the bronchials". These ranges correspond consistently to the T3-T7 spinal level — the anatomical origin of the sympathetic preganglionic supply to the pulmonary and cardiac plexuses in modern neuroanatomy.

The Vascular Dysregulation: Congestion, Plethora, and Slowed Circulation

The readings describe the pulmonary vascular consequence of the disturbed sympathetic supply in terms of both excess and deficiency — and in several readings, both states appear in the same account. This reflects an understanding that the same neural disturbance may at different times or in different vascular beds produce opposite circulatory effects.

The excess or congestion state is the more frequently described. Reading 85-1 states: "at such times we find the blood surcharged" and describes "a strangulated nature, producing the inability of the correct vibrations in their functioning. Hence the blood becomes choked, fullness of flesh to face, the spasms of asthmatic conditions being produced under such strain". Reading 304-45 describes "slowed circulation, tendency for coagulation, produces the shortness of breath, the tendencies for the cough, the asthmatic reactions." Reading 112-1 describes, with striking specificity, "an open plethora condition in the lungs, when the body from the bronchials and from the lung force suffers from the condition produced there" — occurring because "through the veins carrying this to the lungs for the clarification, there is often produced" this vascular engorgement (112-1).

Reading 595-1 offers a particularly detailed account of how slowed circulation produces the asthmatic tissue state:

There was a distress that was brought on by a germ, or 'flu', or deep cold, that with a subluxation already existent which made a tendency in the direction produced a slowing of the circulation through the bronchi and through the larynx. This, then, through the slowed circulation, tended to make for a plethora there.. .the high temperature, the slow blood supply, formed a lesion or a clot, or a thickening of the tissue in the bronchi itself. Hence we have with excess of heat, or with a pressure from even disagreeing properties for digestion, or that requiring the circulation to be drawn to other portions of the body, that which produces spasmodic asthmatic conditions in the bronchi itself. This makes for a filling of the tubes and a shortening of the breath, and slowing still farther the circulation through the lungs. (595-1)

This passage articulates a developmental sequence of direct clinical relevance. A pre-existing subluxation produces disordered circulation; an acute respiratory illness acting on this predisposed tissue produces local thickening; and the resulting structural alteration renders the bronchi hyperreactive to subsequent stimuli (heat, cold, dietary stress, circulatory demands from other organ systems). Reading 5682-2 uses the term "over full" to describe the vascular-tissue state that the inhalants are intended to relieve: "these will aid the system...to relieve those spasmodic conditions, or the tendency of the tissue to become over full from these pressures" (5682-2).

Reading 656-1 integrates the neurological and vascular dimensions most explicitly: "In times back there was produced a subluxation in the upper dorsal area, which — with the deflecting of the nerve impulse — gradually created a tendency for the increasing of tissue in such measures as to deflect nerve energy at times, and so become

susceptible to atmospheric pressures, cold, congestion; which in turn effects — through the sympathetic and imaginative forces of the nervous system — the bronchi and lungs, thus producing an asthmatic condition" (656-1). The phrase "increasing of tissue" in this passage corresponds closely to modern descriptions of bronchial vascular remodeling and mucosal thickening produced by chronic vascular engorgement.

The Cardiac Plexus and Cardiovascular Entanglement

A distinctive feature of the readings' asthma account is the consistent involvement of the cardiac plexus — the neural structure through which the sympathetic supply to both the heart and the lungs is coordinated. Reading 85-1 identifies the lesion as producing strangulation to "the sympathetic nerves of the secondary cardiac" as the proximate mechanism of the bronchial choking. Reading 90-1 elaborates: "the purely reflex condition as is seen from this pressure produced through the secondary cardiac plexus, and through cardiac plexus proper" (90-1). Reading 5618-12 specifies pressure on "the sympathetic and on the direct cardiac and sympathetic cardiac plexus, from the 7th, 6th, 4th and 5th DORSALS," producing a condition "something very similar to that of asthmatic, or heart asthmatic conditions" (5618-12).

The readings' repeated linkage of asthmatic symptoms with cardiac plexus involvement has clear anatomical grounding. The pulmonary plexus and the cardiac plexus are anatomically contiguous structures receiving sympathetic fibers from the same upper thoracic spinal segments (T1-T5), and functional disturbance at the level of the sympathetic chain in this region will affect both simultaneously. Reading 1536-1 explicitly warns that uncorrected asthmatic conditions may produce "a deflection in the circulation between the liver, the lungs, the heart and the hepatic circulation;

or a FUNCTIONAL disturbance of heart activity" — identifying the cardiovascular-respiratory entanglement as a secondary consequence of the primary neural disturbance (1536-1).

The Secondary Trigger Sensitivity: From Vascular Dysregulation to Hyperresponsiveness

The readings' understanding of asthmatic trigger sensitivity is explicitly neurovascular rather than primarily immunological. Reading 1047-1 identifies the sensitized state as the consequence of impaired nerve impulse and blood flow. The subluxation has "impoverished the flow of the blood, or impulse," and this produces "by this lack of impulse — a spasmodic reaction of an asthmatic nature, either from cold or heat, too much sweets or too much of pollen or dust, too much of any of those influences that will make for an attack upon the sympathetic systems through the mucous membranes" (1047-1).

This account is significant for several reasons. The triggers identified — cold, heat, pollen, dust, dietary excess, emotional and systemic stress — correspond closely to the full range of known asthmatic triggers in modern clinical description. But the readings attribute the sensitivity to these diverse triggers not to any specific immunological response to individual allergens, but to the underlying vascular-neural state of the bronchial tissue. The tissue is hyperreactive because its normal circulatory regulation has been disrupted. Any sufficient stimulus that makes further demands on the disturbed sympathetic supply will provoke the attack. Reading 5639-2 articulates this principle directly: the various conditions — asthmatic attacks, allergic reactions to pollens, cardiac effects — are all manifestations of "conditions existent in the cerebrospinal nerve centers from which radiate those depressions, causing the overflow of blood supply to the system in its various conditions" (5639-2).

Modern Context: The Neurovascular Hypothesis of Asthma

Autonomic Innervation of the Pulmonary and Bronchial Circulation

In modern neuroanatomy, the sympathetic supply to the lungs and bronchi arises from preganglionic neurons in the upper thoracic spinal cord (T1-T6), with fibers synapsing in the paravertebral sympathetic ganglia and traveling via the pulmonary plexus to innervate the bronchial vasculature, submucosal glands, and — in many species, though less densely in humans — the airway smooth muscle (Canning, 2013; Widdicombe, 2003). The bronchial and pulmonary circulations are primarily under adrenergic (vasomotor) control, with sympathetic stimulation producing vasoconstriction and reduced blood flow, while parasympathetic stimulation produces vasodilation and increased blood flow (Canning, 2013). Critically, while sympathetic innervation of human airway smooth muscle is sparse, sympathetic innervation of the bronchial blood vessels is well documented, making the vasomotor control of the airway circulation the primary mechanism through which the sympathetic nervous system influences lung function (Widdicombe, 2003).

The autonomic control of airway caliber involves an interplay between parasympathetic cholinergic innervation (the primary driver of bronchoconstriction in humans), inhibitory non-adrenergic non-cholinergic (NANC) pathways involving nitric oxide and vasoactive intestinal polypeptide (VIP) as the only known neural bronchodilator system in human airways, and excitatory NANC pathways involving substance P, neurokinin A, and calcitonin gene-related peptide, which cause bronchoconstriction, microvascular leakage, and mucous

hypersecretion (Kallenbach et al., 2006). Dysfunction of any component of this multi-pathway autonomic system has the capacity to produce bronchial hyperresponsiveness and asthmatic symptoms without a primary inflammatory mechanism.

Autonomic Imbalance and Bronchial Hyperresponsiveness

The hypothesis that autonomic nervous system imbalance — specifically, relative parasympathetic excess or sympathetic deficiency in the airways — contributes to bronchial hyperresponsiveness in asthma has been investigated since the mid-twentieth century and remains an active area of research (Kallenbach et al., 2006; Canning & Fischer, 2001). Asthmatic patients demonstrate increased bronchial sensitivity to cholinergic constrictors and, in some studies, decreased responsiveness to beta-2 adrenergic dilators (Kallenbach et al., 2006). Clinical dysautonomia — measured across multiple autonomic function tests — has been documented in asthmatic patients, with parasympathetic hyperresponsiveness emerging as a consistent finding (Hira et al., 2016).

Canning and Fischer (2001) provide a comprehensive review of the evidence implicating dysfunction of autonomic nerves innervating smooth muscle in the airways and associated vasculature as a prominent cause of airways hyperresponsiveness. They note that all of the cardinal symptoms of asthma — wheezing, dyspnea, chest tightness, cough, reversible airflow obstruction, mucus hypersecretion, and airways hyperresponsiveness — are inextricably linked to the nervous system. The authors argue that the underweighting of neural mechanisms in clinical guidelines represents a significant gap in the current understanding of asthmatic pathogenesis.

Of particular relevance to the readings' framework is the study by Jalota et al. (1997), who examined the effects of bilateral upper dorsal sympathicolysis (surgical sympathectomy at D2-D3) — performed as treatment for essential hyperhidrosis — on bronchial hyperresponsiveness. The study found that partial pulmonary sympathetic denervation by means of this upper dorsal procedure did not significantly change pre-existing bronchial hyperresponsiveness. While this result does not directly support a simple sympathetic deficiency model, it demonstrates both the close anatomical relationship between upper thoracic sympathetic activity and bronchial responsiveness, and the complexity of autonomic airway control — consistent with the readings' account of a system requiring balanced, coordinated sympathetic input rather than simply more or less of a single influence.

Bronchial Vascular Engorgement, Edema, and Airway Narrowing

The vascular component of the readings' asthma model — the description of blood "surcharged" in the lungs, "plethora" conditions, tissue becoming "over full" — finds its most direct modern parallel in the body of research examining bronchial vascular engorgement as a mechanism of airway narrowing and hyperresponsiveness. Kraft et al. (1997) demonstrated increased vascularity of the bronchial mucosa in mild asthma, finding that a model of airway-wall thickening proposed by Wiggs et al. (1980) suggested that even a small increase in thickness caused by vascular engorgement or edema could account for the increased airway resistance seen with bronchial provocation. In humans, vascular engorgement of bronchial vessels and consequent mucosal thickening has been hypothesized to narrow the bronchial lumen, increase airway resistance, and reduce forced expiratory flow rates (Kraft et al., 1997).

This hypothesis has been supported experimentally by Wagner et al. (1995), who used high-resolution computed tomography to directly measure airway caliber changes during pulmonary vascular engorgement in anesthetized dogs. Volume loading with normal saline decreased average airway luminal area to 68% of baseline, while concomitantly increasing airway wall thickness to 150% of baseline. Engorging the airways with blood also produced measurable luminal narrowing. The study confirmed that the presence of fluid — whether blood or edema — in or immediately surrounding the airway wall acts to decrease the airway lumen, providing direct experimental evidence for the vascular narrowing mechanism described in principle by the readings.

Cabanès et al. (1994) analyzed the mechanical and vascular factors in bronchial hyperreactivity and established that congestion and edema increase airway wall thickness and act in series with airway smooth muscle contraction to reduce airway caliber — an effect more pronounced in small and intermediate bronchi. They further noted that many mediators, neuromediators, and paracrine mediators produced by resident and migrant cells share both bronchomotor and vascular effects, and that contraction of airway smooth muscle itself facilitates vascular congestion by reducing the external diameter of the airway more than the muscle ring diameter. This mechanical coupling between smooth muscle tone and vascular engorgement creates a self-reinforcing cycle consistent with the chronic, recurrent character of asthma attacks described across the readings.

The vascular component of airway remodeling in chronic asthma has been independently established by multiple research groups. Park et al. (2010) reviewed evidence that airway circulation plays important roles in the exchange of heat and water, clearance of

inhaled materials and inflammatory mediators, regulation of airway caliber, and airway hyperresponsiveness. Vascular remodeling — including increased vessel number, size, and density — has been documented in the airways of asthmatics from mild to fatal severity, suggesting that vascular changes occur early in the disease and worsen with severity. Ribatti et al. (2009) confirmed in a comprehensive review that increased bronchial angiogenesis and vascular remodeling produce altered bronchial and pulmonary circulation in chronic lung disease, with endothelial cells, smooth muscle cells, and pulmonary fibroblasts all contributing to the progression of vascular inflammation.

The *CHEST* journal review "Is Asthma a Vascular Disorder?" (Wanner, 1995) explicitly examined the hypothesis that vascular disorders could be a primary rather than secondary feature of asthma, reviewing experimental evidence for how pulmonary and bronchial vascular engorgement affects airway obstruction. The review noted that increases in pulmonary vascular pressure cause distortions in the shape of airways, and that engorging canine airways in vivo with blood or saline produces bronchial thickening and luminal narrowing — a set of observations that resonates directly with the readings' descriptions of the lung becoming "overfull" and the tubes "filling" during an asthmatic attack.

Cardiovascular-Respiratory Autonomic Coupling in Asthma

The readings' consistent linking of asthmatic symptoms with cardiac plexus involvement, and their warnings about secondary cardiovascular consequences of untreated asthma, are also supported in the modern literature. Kallenbach et al. (2006) reviewed the evidence for cardiovascular-autonomic changes associated with asthmatic pathophysiology, noting that cardiac vagal reactivity appears to be increased in asthma and that altered

autonomic-cardiovascular control is associated with bronchial asthma. They observed that the cardiac response to various autonomic function tests is altered in asthmatic patients, reflecting the shared autonomic supply of the heart and lungs through the cardiac and pulmonary plexuses — exactly the anatomical relationship the readings identify in their repeated references to the secondary and primary cardiac plexus.

The readings' observation that untreated asthma may produce "a deflection in the circulation between the liver, the lungs, the heart and the hepatic circulation; or a FUNCTIONAL disturbance of heart activity" (1536-1) corresponds to the modern recognition that severe or chronic asthma is associated with measurable cardiovascular dysfunction, including right ventricular strain and altered hemodynamics. Reading 90-1's description of how sedatives given for the lungs "increase the heart's action" and how the body "draws up, as it were, the diaphragm, in attempting to pump the blood through" corresponds to the modern understanding of the mechanical loading imposed on both ventricles by the increased negative intrathoracic pressure generated during severe asthmatic attacks, as described by Cabanes et al. (1994).

Neurogenic Inflammation and the Spinal Afferent Contribution

The dorsal root ganglion (DRG) pathway — through which spinal afferent neurons projecting to the lung and bronchi traverse the sympathetic chain to enter the spinal cord via upper thoracic spinal nerves — has been identified as a potential contributor to neurogenic inflammation in asthma. Groth et al. (2006) demonstrated that neurons in cervical and upper thoracic dorsal root ganglia send axons to the lung, and that immunohistochemical investigation of these neurons indicated that the DRG pathway may have effects on the magnitude of neurogenic inflammation in

airway diseases such as asthma. This research provides a mechanism through which structural compromise at the upper dorsal spinal level — precisely the region identified by the readings — could amplify neurogenic inflammatory responses in the airways.

The concept of neurogenic pulmonary edema — in which sympathetic discharge from spinal cord or hypothalamic centers produces dramatic increases in pulmonary vascular pressure — further illustrates the capacity of spinal-level neural events to produce vascular engorgement in the lungs and airways. Alpha-adrenergic blockade and spinal cord transection have been shown to prevent neurogenic pulmonary edema, confirming the dependence of this vascular effect on upper thoracic sympathetic activity (Davison et al., 2012). While neurogenic pulmonary edema is an acute phenomenon of a different clinical magnitude than asthma, its pathophysiology demonstrates the principle — central to the readings' account — that altered sympathetic outflow from the upper thoracic spinal cord produces rapid and significant changes in pulmonary vascular pressure and perfusion.

Integrating the Readings' Model with Modern Research

The readings' neurovascular account of asthma cannot be directly mapped onto modern immunological models of asthmatic pathogenesis, which place T-cell dysregulation, mast cell activation, and eosinophilic inflammation at the center of the disease.

However, the readings' model corresponds with notable precision to a distinct body of modern research that has emphasized neural and vascular mechanisms as significant, and potentially primary, contributors to airway hyperresponsiveness — a body of research that remains underrepresented in clinical guidelines even as it has grown substantially in the decades since the readings were given.

Several specific correspondences merit particular emphasis. First, the readings' identification of the upper and mid-dorsal spinal segments (T3-T7) as the neural level from which sympathetic disturbance to the lungs and bronchi arises is anatomically consistent with modern neuroanatomy. The sympathetic preganglionic supply to the pulmonary plexus arises from exactly these segments; structural compromise — from subluxation, lesion, or other mechanical disturbance — at these levels would be expected to alter sympathetic vasomotor control of the bronchial and pulmonary circulation, consistent with the readings' account.

Second, the readings' description of the vascular states produced by this disturbance — plethora, surcharging, tissue becoming overfull — corresponds to the vascular engorgement mechanism documented by Kraft et al. (1997), Wagner et al. (1995), and Cabanes et al. (1994) as producing mucosal thickening and luminal narrowing in the bronchi. The readings do not describe bronchial smooth muscle spasm as the primary mechanism of airway obstruction. They describe a vascular filling and tissue thickening that reduces the airway lumen — a description more consistent with the vascular narrowing model than with the primary smooth muscle contraction model that has dominated standard asthma pathophysiology.

Third, the readings' explanation of trigger sensitivity — that the underlying vascular-neural dysregulation renders the bronchial tissue reactive to a wide variety of stimuli — corresponds to the modern understanding of bronchial hyperresponsiveness as an amplified response to triggers that would not affect normal airways. The readings do not propose that pollen, cold, heat, dust, or emotional stress are the causes of asthma. They propose that these triggers produce attacks in individuals whose bronchial tissue

has been rendered hyperreactive by a pre-existing neurovascular disturbance. This is precisely the distinction between cause and trigger that modern bronchial hyperresponsiveness research has documented. The fundamental tissue abnormality (in modern terms, autonomic imbalance with vascular dysregulation; in the readings' terms, disturbed sympathetic supply from spinal pressure) determines the degree and breadth of reactivity, while the individual triggers vary among patients.

Reading 1413-1 provides what may be the readings' most explicit summary of this integrative model: "it may be seen from these very conditions that, while these are in the NERVOUS REACTIONS of the body, it is a mechanical or structural pressure to a great degree that is the primary cause of the asthmatic condition; and the combination of disturbance to the glandular system, the accumulations of poisons in the body, the incoordination of the superficial and the deeper circulation, that aggravate and produce the abrasions in the superficial circulation" (1413-1). This passage explicitly identifies the structural-neural mechanism as primary, and identifies systemic factors — glandular disturbance, toxemia, circulatory incoordination — as aggravating contributors. It is a multifactorial model in which the neurovascular disturbance from spinal pressure occupies the primary causal position.

Therapeutic Implications

Asthma, when viewed as a condition which has its origin and basis in the nervous system, should then be approached in therapy with the objective of removing the stimulatory factors in the nervous system and correcting those adjunctive, correlated, and resultant imbalances that may prevent a return to normal function. Since pressures are present in the dorsal and sometimes the cervical ganglia, these should be relieved

osteopathically and treatments should be continued long enough to allow continuance of normal nerve function. The eliminations should be restored to normal, and assimilation should be balanced with the elimination. The deep and superficial circulation, which is often disturbed, should be restored to a balance of coordination. (McGarey, 1983, p. 57)

From the perspective of clinical and research application, the readings' model suggests that assessment of upper thoracic spinal mechanics may be relevant in asthmatic patients with inadequately controlled bronchial hyperresponsiveness, particularly where autonomic testing reveals evidence of dysautonomia or where vascular reactivity appears to be a prominent component of the clinical picture. The readings' consistent prescription of manual therapy directed at the upper dorsal and cervical spine as the primary treatment for the structural cause — alongside diet, eliminations, and inhalant therapy for symptomatic relief — reflects an integrated treatment model whose physiological rationale is consistent with what is now understood about the autonomic-vascular contributions to asthmatic pathogenesis.

And yet, while considering the readings in a modern context is more than simply updating terms and concepts, one must also take into considerations changes in therapeutic options for conditions such as asthma where a particular type of manual therapy was so often prescribed in the reading — namely osteopathic manipulation. During the early decades of the twentieth century osteopathic manual therapy (now called "manual medicine") was readily available to the individuals getting readings from Edgar Cayce. Now it is quite difficult to find an osteopathic physician who provides traditional osteopathic manual therapy.

One solution is to simply assume that chiropractors (who are now in relative abundance) are the same as traditional osteopaths and just go to a chiropractor instead. It is beyond the scope of this text to explore the differences between chiropractic and traditional osteopathy, which has been done elsewhere (e.g., McMillin, 1995).

Rather the focus here is on the actual relevance of manual therapy to treat asthma. In the *New England Journal of Medicine*, Balon et al. (1998) compared "active" and "simulated" chiropractic manipulation as adjunctive treatment for childhood asthma. The active treatment consisted of standard "manual contact with spinal or pelvic joints followed by low-amplitude, high velocity directional push often associated with joint opening, creating a cavitation, or 'pop'" (i.e., standard chiropractic technique). The simulated (sham/placebo/control) treatment resembled a traditional osteopathic general treatment as noted by researchers at Meridian Institute: Richards et al. (1999); Nelson et al. (2000); Mein et al. (2001); McMillin et al. (2001).

In their study, Balon et al. concluded that both forms of treatment resulted in improvement in symptoms, decreased use of medication, and improvement in the quality of life. But since the "sham" treatment by design and intent was assumed to have no therapeutic effect, chiropractic was judged as not effective for treating asthma. This is unfortunate, because the data indicates that the subjects in both groups improved after being treated by standard chiropractic and a rather crude form of traditional osteopathy. The "sham treatment" problem continues to plague manual therapy research on asthma. Thus the modern context of applying the readings' approach to asthma is complex and controversial, requiring additional research and clarification of specific methodological issues.

The neurovascular model proposed in the Cayce readings — in which upper dorsal spinal disturbance produces vascular dysregulation in the bronchial and pulmonary circulation, rendering the lung tissue hyperreactive — provides a theoretical framework for predicting which patients might benefit most from manual therapy approaches targeting the upper thoracic spine. The readings are explicit that this mechanism is common in asthmatic cases and that where the condition has become constitutional and organ-dependent, spinal correction alone will not suffice. The readings consistently prescribe spinal manipulation alongside diet, eliminations, and holistic therapies as elements of an integrated program. They anticipated the multi-modal approach to asthmatic management that has become increasingly recognized by modern researchers and clinicians.

Conclusion

The Cayce readings on asthma present a coherent and anatomically grounded neurovascular model of the condition that identifies structural compromise of the upper thoracic sympathetic nerve supply as the primary pathological cause of bronchial hyperresponsiveness, and identifies disturbed vascular regulation of the bronchial and pulmonary circulation — producing both excess (plethora, congestion) and deficiency (slowed circulation, impaired impulse) — as the mechanism by which this neural disturbance renders the lung tissue pathologically sensitive to asthmatic triggers. This model aligns with a substantial and growing body of modern research on autonomic imbalance, bronchial vascular engorgement, mucosal thickening, and neurogenic inflammation as contributors to asthmatic pathogenesis. The readings' consistent identification of the 3rd through 7th dorsal vertebrae as the site of sympathetic disturbance corresponds

precisely to the anatomical origin of the pulmonary and cardiac sympathetic supply in modern neuroanatomy with practical implications for treatment with manual therapy. While the readings' neurovascular model does not encompass the immunological dimensions of asthma fully characterized in modern research, it addresses the vascular and autonomic dimensions with a specificity and coherence that places it in productive relationship with the frontier of current asthma research on neurogenic and vascular mechanisms.

5.2 Epilepsy

Abstract

A central and often overlooked feature of the readings' approach to epilepsy is its insistence on diagnostic and etiological variety. The readings identify at least three distinct types — true epilepsy (lacteal duct type), colonic type, and hormonal type — each arising from different peripheral pathology and warranting distinct therapeutic approaches. Many of readings indexed as epilepsy explicitly state that the condition under examination is NOT true epilepsy, underscoring the clinical importance of differential diagnosis within the readings' own framework. *True epilepsy* is emphasized in the readings, corresponding to generalized tonic-clonic seizures. True epilepsy arises from adhesions in the lacteal ducts of the upper small intestine that propagate through the autonomic nerve system to produce incoordination between the sympathetic and cerebrospinal systems, ultimately generating seizure discharge. Its pathognomonic finding is a cold spot palpable in the right lower quadrant of the abdomen. *Colonic type epilepsy* involves the large intestine and enteric nerve system and corresponds most closely to focal-onset epilepsy, including the category of abdominal epilepsy associated with temporal lobe seizures. *Hormonal type epilepsy*, encompassing catamenial epilepsy

and related neuroendocrine conditions, arises from dysfunction of the reproductive glands. The therapeutic program for each type addresses its specific peripheral cause. The readings' account of epilepsy as a disorder of peripheral nervous system and abdominal lymphatic or enteric origin producing reflex brain seizures has received partial empirical support from thermographic studies of abdominal cold spots in epileptic populations and aligns with modern understanding of the gut-brain axis, enteric nervous system involvement in seizure susceptibility, and neuroendocrine bidirectionality in epilepsy.

Introduction

Again we would insist that we have asked that it be taken as a study, as a thing or condition in the experience of mankind — that this organization may give much to the world on one particular disturbance that has baffled the wise and the foolish. This study on that called epilepsy — for THREE YEARS! and you will be undefeatable! (254-82)

Reading 254-82 — an unsolicited interruption volunteered by the readings themselves during a session on a different subject — urges the A.R.E. to undertake a three-year dedicated study of epilepsy, with the confidence that such effort would make the organization "undefeatable." This urgency signals the readings' assessment that the study of epilepsy represents a clinically significant contribution — one that could transform the treatment of a condition that had, in the readings' own characterization, "baffled the wise and the foolish."

The physical readings contain approximately 95 cases of epilepsy, with over 200 readings discussing various aspects of the condition (McMillin, 2022). Dr. Walter Pahnke, a Harvard-trained physician, reviewed these cases systematically, organized them into three groups based on diagnostic certainty, and made his analysis available for inclusion in the *Physician's Reference Notebook* (Pahnke,

1983). Group I contains 46 cases with the most certain diagnosis; Group II contains 33 cases with less certain diagnosis; Group III contains 16 cases in which the diagnosis did not appear to be epilepsy. The 79 cases of Groups I and II formed Pahnke's primary database for analysis, which provides the core information for the discussion that follows.

The readings' approach to epilepsy is simultaneously one of their most anatomically specific accounts of any condition in the pathological sections of this chapter and one of their most diagnostically exacting. Crucially, the readings do not treat epilepsy as a single entity. Reading 281-4 states directly: "There are various characterizations in those that are termed epileptics. Some arise from one condition, some from another." Reading 1800-16 reinforces this: "what is KNOWN as epileptic, produced from the various causes. These, you see, have a variation." The diagnostic precision required by this framework has significant clinical implications, since epilepsy arising from physical causes in one system can be fundamentally different from epilepsy arising in another.

Definition and Classification

Types of Epilepsy in the Readings

In view of the modern classification approach to epilepsy, the readings' insistence on etiological variety is realistic while providing a substantive diagnostic framework. At least three recognizable types emerge from the readings, each with its own anatomical locus, pathophysiology, and therapeutic implications. These types correspond broadly to modern clinical categories, though the readings arrived at this differentiation through their own physiological framework rather than through neuroimaging or electroencephalography.

True epilepsy — the type receiving the most systematic treatment in the readings — arises from adhesions in the lacteal duct region of the upper small intestine and jejunum. It corresponds to what

was historically called grand mal epilepsy and is now classified as epilepsy with generalized tonic-clonic seizures. Its pathognomonic physical finding is a cold spot detectable over the right side of the abdomen during seizures. The readings state unambiguously: "From EVERY condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum" (567-4).

Colonic type epilepsy was specifically named in reading 281-5, which classified a young man's condition as "of the colonic type." The anatomical emphasis in this type is the large intestine — particularly the caecum and transverse colon — rather than the lacteal ducts of the small intestine. As discussed in the Modern Context section below, this type corresponds most closely to modern focal-onset epilepsy and the related category of abdominal epilepsy, which has been associated with temporal lobe epilepsy. The enteric nerve system — what the readings call "the vegetative nerve system of the intestinal tract" (120-3) — is the primary anatomical pathway through which colonic pathology generates seizure activity in this type.

Hormonal type epilepsy encompasses cases in which the reproductive glands and their associated neuroendocrine pathways are the primary causal system. Reading 4537-1 identifies the two originating systems of true epilepsy as "stomach or genitive system," pointing to the reproductive-endocrine axis as one of the fundamental sources. In females of reproductive age, the cyclic fluctuation of estrogen and progesterone can produce what modern epileptology calls catamenial epilepsy — seizures whose frequency and severity are tied to the menstrual cycle. In both sexes, dysfunction of the Leydig (lyden) gland and the pineal system may play a regulatory role in this type.

The critical diagnostic distinction running through all of these types is the readings' repeated assertion that some presentations that resemble epilepsy are not true epilepsy and are not even of the same type as one another. At least 14 readings contain explicit

statements that the condition under examination is NOT true epilepsy. Reading 4072-1 draws the sharpest line: "These are not epileptic reactions in the present, for they are not controlled by the activities from the lyden (Leydig) glands but from the injury to the lacteal duct center." This passage introduces the Leydig gland's involvement as a specific criterion distinguishing true epilepsy from epileptiform conditions that may involve the same anatomical territory without engaging the deeper neuroendocrine regulatory axis.

Reading 3231-1 offers a practical clinical corollary: "These disturbances as we find, while they bear a great deal of similarity to that ordinarily termed of an epileptic nature, are not true epileptic spasms. But, owing to injuries in the body and disturbances in the circulation, these reflect upon practically the same organs that are affected under epileptic tendencies. Hence if these are given the same type of treatments, in the main, we would have about the same results eventually." Even when differential diagnosis reveals a non-true epilepsy, therapeutic overlap remains possible when the anatomical territory involved is similar.

True Epilepsy (Lacteal Duct Type)

Reading 4537-1 provides the most direct statement of the origins of true epilepsy in the readings: "epilepsy comes either from stomach or genitive system." This brief but precise statement identifies two originating systems — the gastric-digestive system and the generative (reproductive-endocrine) system — as the primary sources from which true epilepsy arises. The brain is the site of seizure expression, not the site of the primary cause.

The readings use classifications such as "petit mal" and "grand mal" on occasion, as in reading 1683-1: "we will make for greater or better gradual coordination and alleviation of the causes of the spasmodic reaction — or the petit mal (or the grand mal that it would become, unless these corrections as indicated are considered necessary)." However, the primary concern is not diagnostic

classification but the identification of the specific etiology underlying each individual's condition.

Historically this form of epilepsy was called grand mal or idiopathic and its name can be traced explicitly to the work of Todd:

The leading and pathognomonic features of true epilepsy are these: – loss of consciousness and sensibility, most frequently accompanied by convulsions of the kind which I have described as epileptic, i.e. of movements which consist of alternate relaxations and contractions of muscles rapidly succeeding each other: these paroxysms occurring at intervals of variable length, with something of periodicity, the patient during the interval recovering himself completely. These phenomena are most frequently ushered in without any warning whatever, so that the patient is suddenly, and on the instant, seized, rendered senseless, more or less violently convulsed, and then awakes more or less suddenly. In many instances all this is done in scarcely as much time as it takes to describe the phenomena; at other times the fit is of much longer duration. (Todd, 1855, p. 995)

The current medical designation of this type is "epilepsy with generalized tonic-clonic seizures alone." A person experiencing true epilepsy will typically lose consciousness, fall to the floor or ground, shift between rigidity, called the tonic phase and convulsions, the clonic phase. Usually seizures may last for a few minutes, leaving the individual exhausted and disoriented. Given the dramatic nature of such seizures, it makes sense that this type of epilepsy would come to epitomize what became known as "true epilepsy." It is also reasonable that the readings would use this term, "true epilepsy" as the standard for differentiating between the various forms of the disease.

Colonic Type Epilepsy

The explicit classification of a case as "colonic type" epilepsy occurs in reading 281-5, given in response to questions about a young man (case 1784) whose condition had been brought to the Glad Helpers healing group for prayer and laying on of hands. When asked whether the attacks were epileptic and what type, the readings responded directly: "These, as we find, are of the colonic type."

Case 1784 is instructive for what distinguishes colonic type from true epilepsy. A single reading for this individual, age 21, describes a coccyx injury sustained at age three or four. The injury produced incoordination within the nervous and glandular systems, with the pineal system involved and transpersonal dimensions ("imaginative forces") active, particularly during sleep. The treatment plan specified laying on of hands with the right hand over the solar plexus center in the spine (9th and 10th dorsal) and the left hand over the caecum and transverse colon area. Critically, there was no recommendation for abdominal castor oil packs over the lacteal duct area, which would be expected in true epilepsy, and no mention of lacteal duct pathology. Case 1784 is in Pahnke's Group I, confirming the diagnosis was considered certain.

Case 251, also in Pahnke's Group I, presents a related pattern. Spinal injury produced adhesions in the caecum and ascending colon with a cold spot over the caecum and intestinal "strangulation." Treatment included osteopathic manipulation of the spine, Milk of Bismuth taken orally for bowel healing, enemas as needed to relieve pressure in the colon, and a cleansing diet. As in case 1784, there was no mention of lacteal ducts or castor oil packs. Poor eliminations are specifically identified as a contributing factor, consistent with the colonic rather than lacteal duct etiology.

Case 1625 (Group I) shows intestinal adhesions in the caecum and lacteal duct area with pineal system involvement through the medulla oblongata, and notable stomach discomfort during seizures. Documentation for this case states that the patient "would look wild, laugh and draw to the right side" (1625-1, report). This

presentation of gastrointestinal symptoms during seizures is characteristic of the colonic type and corresponds to the modern concept of abdominal epilepsy, discussed in the Modern Context section.

What unifies the colonic type cases is the emphasis on the large intestine and enteric pathology as the primary locus. The absence of the lacteal duct cold spot as a defining feature, and a treatment emphasis on spinal manipulation, colonic interventions, and bowel regulation rather than on the castor oil pack protocol targeting the right upper quadrant of the abdomen distinguishes this type.

Hormonal Type Epilepsy

Several cases in the readings link epilepsy primarily to the reproductive system and its hormonal function. This hormonal type encompasses what modern epileptology calls catamenial epilepsy in women of reproductive age, as well as related conditions in men in which the "genitive forces" are the primary causal system.

Case 543, in Pahnke's Group I, is a 21-year-old female whose epilepsy was described as prenatal in origin: "This is produced from those of prenatal conditions, the affection of same, as that gathered through those forces of the genital organs. This may be determined by the plasms in the blood test" (543-1). The blood test reference suggests a hormonal diagnostic marker. The onset of seizures at age 14 — coinciding with the onset of menstrual cycles — supports the interpretation of catamenial epilepsy. The treatment recommended was surgical, directed not at the brain but at the reproductive organs, with the readings acknowledging the impracticality of such a procedure at the time while expressing that the concept would gain acceptance in the future.

Case 571 documents nocturnal seizures in a young female aged 12 at the time of her first reading. Poor eliminations associated with menstruation was a primary etiological theme, with the readings emphasizing the interaction between channels of elimination and

menstrual function. The treatment plan included abdominal castor oil packs over the lacteal duct area, passion flower compound (also called mayblossom bitters), osteopathic adjustments, and a specific dietary protocol. Outcome was positive: a report from September 1940 by the mother stated that luminal was discontinued after the first reading and mayblossom bitters substituted, with attacks gradually diminishing and finally ceasing altogether.

Case 3606 is a 20-year-old woman whose seizures began at age 13, probably related to the onset of puberty and menstruation. Symptoms included jerking, shaking, and loss of consciousness during seizures, which were more frequent in association with menstrual periods. A spinal injury just before puberty caused lesions in the lacteal duct area, illustrating the complex etiology in which spinal, lacteal duct, and hormonal factors interact. Treatment included osteopathic treatment of the spine and abdomen and passion flower tonic, with the prognosis stated as removing the causes rather than merely warding off attacks.

Case 1001 involves a young man whose epilepsy was traced to glandular dysfunction involving the Leydig (lyden) and pineal glands. The readings described excitation of "genitive forces" through the lyden gland as the primary causal mechanism, with a pattern of uncontrolled sexual behavior reflecting the overactivation of this system. The life reading for this individual connected these patterns to karmic factors from a prior incarnation, representing the transpersonal dimension that the readings identify as particularly prominent in cases of hormonal type epilepsy (McMillin, 2022).

What unifies the hormonal type cases is the central role of the reproductive organs and the Leydig-pineal neuroendocrine axis, the relationship of seizures to hormonal fluctuations (particularly the menstrual cycle in women), and a therapeutic emphasis on the reproductive system and its regulating glandular network rather than on the lacteal duct or colonic pathology that predominates in the other types.

Anatomy and Pathophysiology: The Epileptic Process in True Epilepsy

The following account of anatomy and pathophysiology applies specifically to true epilepsy — the lacteal duct type — which has been the most thoroughly analyzed type in scholarly studies of the readings (Pahnke, 1983; McMillin, 2022). The pathophysiology of colonic type and hormonal type epilepsy is addressed briefly here and elaborated in the Modern Context section.

The Lacteal Ducts as the Central Anatomical Structure

The lacteal duct region — the lymphatic vessels of the small intestine, concentrated in and around the duodenojejunal junction and extending through the jejunum — is the anatomical structure at the center of the readings' account of true epilepsy. The lacteal system of the lymphatics serves a specialized function distinct from the general immune and cleansing functions of the lymphatic system: the absorption and transport of dietary fats (lipids, or chyle) from the small intestine to the general circulation via the thoracic duct.

Reading 2153-4 provides the most thorough anatomical description: "There are, to be sure, lacteal ducts. There are the strings or ducts all through the upper portion of the alimentary canal, or jejunum; but the larger patch or area is that lying just below the lower end of the duodenum, and where same empties into the jejunum... This patch is not only an internal activity, but an external, that makes for the production of assimilation." The identification of the duodenojejunal junction as the primary site of lacteal duct pathology is consistent across multiple readings.

Adhesions in or around the lacteal ducts, or stricture of these ducts, produce a disturbance in the abdominal nerve-lymphatic system that propagates upward through the sympathetic-cerebrospinal axis to the brain. Reading 1025-2 describes the mechanism: "adhesions AND lesions — in the lacteal ducts are the basic cause for the disturbance in the nervous system... When there is an

expression or activity from the sympathetic nervous system... we find there is the movement or impulse to and from the brain centers themselves. Then with a lesion or adhesion, the impulse is cut off — or deflected... Then this coordinating or connection with the solar plexus nerve centers, making for an incoordination with the cerebrospinal nerve system, produces at the base of the brain — or through the medulla oblongata — an incoordinant reaction [epileptic seizure]."

Reading 3603-1 describes the complete pathological anatomy: "there are those adhesions in the lacteal duct area as associated or connected with the pubic centers in this body. These cause, when there is the digestion or when there are activities of certain elements or environs, what might be called seizures, falling sickness, epilepsy or the contraction or spasmodic condition in the area of the 1st and 2nd cervical, where the emotions through the superficial circulation or the sympathetic and the cerebrospinal system do not coordinate in their entrance to brain reflexes." The pathway is complete: lacteal duct adhesions → disturbance in abdominal nerve centers → failure of sympathetic-cerebrospinal coordination at the cervical level → seizure expression at the brain.

The Short Circuit Mechanism

Reading 3565-1 introduces the "short circuit" characterization: "lesions in the coccyx and those adhesions in the lacteal duct that cause the spasmodic reaction to the 1st, 2nd and 3rd cervical. Or where nerves of the sympathetic system or impulses coordinate with the brain flexes in the circulation. Thus there is caused what might be termed a short circuit to the wave responses in the impressions to reflexes in brain, causing these centers to produce in the locomotories, spasmodic seizures."

Reading 1025-3 elaborates this electrical analogy: "there is a breaking; or a non-coordination between the sympathetic and the cerebrospinal systems. And it is almost the same effect of a shock, of an excitement, that would be produced in a wire that is partially broken; when set in a certain way the current passes through, but a

turning of same causes sparks or a disconnection and a reaction that makes for a flashing. So with the nervous system." Normal nerve impulse transmission follows its proper pathway. When the lacteal duct adhesion disrupts coordination, the nerve wave encounters a pathway obstruction and discharges abnormally, producing the motor expression of the seizure.

The Abdominal Cold Spot: Pathognomonic Finding

Reading 567-4 provides the single most diagnostically specific statement in all of the readings: "From EVERY condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum." Reading 561-1 describes detection: "when there is the spasm to the head, or when the circulation between the liver and the heart is affected, if the hand is placed upon the caecum and the area about the lacteal ducts it will be found that there is a COLDNESS there — though the body may not be aware of same." Pahnke (1983) noted that this sign was usually only present at the time of the seizure, a finding with important implications for clinical detection methodology.

Glandular and Endocrine Involvement

The endocrine glands were involved in 21 of the 79 cases that Pahnke regarded as providing strong evidence of epileptic seizures. There was a pattern of reflex via the autonomic nerve system — with the adrenals and gonads affected and triggering responses in the pineal and pituitary glands (Pahnke, 1983). McMillin (2022) identifies the Leydig-pineal axis as the governing regulatory system that coordinates the entire epileptic process in true epilepsy. Reading 4072-1's distinction — that true epilepsy is "controlled by the activities from the lyden (Leydig) glands" places the Leydig gland's involvement as the defining criterion of true epileptic pathology within the readings' framework.

The Role of Eliminations

Reading 1980-1 describes the role of inadequate alimentary elimination as a seizure trigger: "With the activity of the lymph

through the area, we find that periodically, when there is the lack of proper eliminations through the alimentary canal, there occurs a reflex to the coordination between sympathetic and cerebrospinal system area; that takes the governing of the impulse, as it were, to the brain reactions; OR a form of spasmodic reaction that might be called epileptic in its nature." This establishes that seizures are more likely when bowel function is compromised — a finding relevant to both the lacteal duct type and the colonic type, and which directly informs the eliminative components of the therapeutic program.

Etiology: The Causes of Lacteal Duct Pathology

The readings identify several mechanisms through which the lacteal duct adhesions and strictures that produce true epilepsy may develop.

Physical Injury to the Coccyx and Spine

The most common cause given for the lacteal duct lesion when a specific cause was described was reflex action from an initial injury to a spinal segment, particularly in the sacral-coccygeal region (Pahnke, 1983). Reading 1980-1 describes the mechanism: "causes arise from an injury received some years ago, in the coccyx area, and then a contributory cause later in the area above the lumbar axis. These caused a slowing of the circulation through the areas of the lacteal ducts, thus producing a cold area there, that has produced a partial adherence of tissue."

Direct Abdominal Trauma and Birth

Direct trauma to the right upper quadrant of the abdomen or injury during or after birth was also repeatedly described. Post-natal infection in the umbilical area was given as a cause for case 2441-1. Birth-related compression and injury producing lacteal duct disturbance connects epilepsy to the broader pattern of birth complications producing neurological and glandular pathology documented across the readings.

Fever and Inflammatory Episodes

Reading 2153-4 identifies excess temperature as a causal mechanism: "The adhesions in these ducts here were produced by an excess temperature, which the body suffered at some period when there was too sudden dropping of the temperature... and not sufficient water, or manipulations, or activity, through the alimentary canal." Reading 561-1 similarly describes lacteal duct stricture arising during a febrile illness in infancy, associated with the transition to more astringent foods and the properties given to treat the fever.

Prenatal and Developmental Causes

Reading 543-1 states: "This is produced from those of prenatal conditions, the affection of same, as that gathered through those forces of the genital organs. This may be determined by the plasms in the blood test." Case 2019-1 illustrates that prolonged fasting in the past produced injury to the umbilical and lacteal autonomic plexuses, so that a tautness was produced in the lacteal ducts periodically.

Reproductive System Dysfunction

Reading 3603-1's description of lacteal duct adhesions "as associated or connected with the pubic [genital] centers" illustrates the connection between reproductive system dysfunction and epileptic pathology. Two cases in the readings (571 and 3606) were linked specifically to menstruation, representing what modern epileptology calls catamenial epilepsy (McMillin, 2022). The Leydig gland's role as an intermediate in this pathway — receiving impulses from the reproductive organs and transmitting them through the pineal system — provides the anatomical basis for the reproductive-epileptic connection.

Pathogenesis: The Causal Chain

The readings' account of true epilepsy, synthesized by Pahnke (1983) and McMillin (2022), describes a causal chain that may begin

at different peripheral entry points but converges on a common pathophysiological mechanism. The initiating event is typically a structural lesion — spinal injury (most commonly coccygeal), direct abdominal trauma, febrile adhesion formation, or birth-related compression — that produces or contributes to adhesion formation in the lacteal duct region of the right abdomen. Once established, these adhesions impede the flow of chyle through the lacteal vessels, producing circulatory stagnation and the temperature reduction detectable as the cold spot (567-4).

The lacteal duct lesion produces far-reaching effects through the autonomic nerve system. Pahnke (1983) identifies secondary consequences documented across the readings: interference with elimination through the large and small bowels, decrease in hepatic circulation, interference with oxidation in the body, and disturbance to liver and pancreatic secretions. By autonomic reflex, lesions in spinal segments are set up — most commonly in the sacrococcygeal region, ninth and tenth dorsals, and first, second, and third cervicals (Pahnke, 1983). There is a reciprocal relationship between the lacteal lesion and the spinal segment lesions: where the lacteal lesion was produced first, spinal segment lesions develop by reflex, and vice versa.

The combined disturbance produces the fundamental incoordination between the cerebrospinal and autonomic nerve systems. Reading 1025-2 describes this directly: "we have a lesion in the lacteal duct area, from an injury there in times back... Hence we have first an intestinal disturbance through the activity of the assimilating system... Then this coordinating or connection with the solar plexus nerve centers, making for an incoordination with the cerebrospinal nerve system, produces at the base of the brain — or through the medulla oblongata — an incoordinant reaction." The brain lesion, where present, is consistently described as reflex rather than primary: "the accumulations that have been there are rather reflex — and are produced by the condition in the lacteal duct area" (1025-2).

Clinical Features

The seizure expression in the readings' account ranges from grand mal convulsions through "falling sickness" (3603-1) to spasmodic conditions of lesser severity. Reading 885-2 describes both "epileptic or cataleptic conditions that concur one with another" as part of the same presenting picture. The relationship of seizures to digestive and eliminative states is consistent across cases. Reading 3603-1 notes that seizures occur "when there is the digestion or when there are activities of certain elements or environs," and reading 1025-3 observes that attacks are triggered by "a slight shock of some kind; as unexpected noise, stumbling," illustrating the sensitized state of the nerve system when sympathetic-cerebrospinal incoordination has lowered the seizure threshold.

Somatic comorbidities documented across the epilepsy cases include kidney dysfunction, liver problems, gastrointestinal symptoms, and back pain, all consistent with the systemic gastrointestinal-lymphatic-autonomic disturbance that the readings identify as underlying the epileptic process (McMillin, 2022). Psychiatric comorbidity is also present. Reading 241-1 provides a specific explanation for post-ictal depression, and several cases present with psychotic symptoms alongside epilepsy.

In the colonic type, gastrointestinal symptoms during or around seizures — as in case 1625 correspond to what modern medicine describes as the abdominal epilepsy spectrum, including abdominal pain, nausea, bloating, and diarrhea as primary or associated seizure manifestations. In the hormonal type, seizures show a temporal relationship to hormonal cycles, with increased frequency and severity correlated with the menstrual period in catamenial epilepsy.

Therapeutics

The therapeutic approach in the readings addresses the root cause of each epilepsy type rather than the seizure expression itself. The readings acknowledge conventional anticonvulsants (Dilantin,

phenobarbital, bromides) as sometimes useful for temporary control, but consistently identify them as secondary measures that do not address the underlying cause. The goal is the restoration of normal anatomy and function in the affected system — lacteal duct, colon, or reproductive-endocrine axis — and the reestablishment of sympathetic-cerebrospinal coordination.

Castor Oil Packs

Hot castor oil packs are the cornerstone of true epilepsy treatment, targeting the lacteal duct adhesion directly. Reading 2153-4 states: "they are disagreeable, but they will break up lesions as no other administrations will." Packs were applied for one to one-and-a-half hours daily for three-day series, over the right abdomen from the costal margin to the iliac crest. The therapeutic goal was stated as: "Keep these up until this coldness and the lesion in the right side is removed — which is just a hand's breadth below the point of the rib, or over that area of the ducts." In colonic type cases such as 251 and 1784, castor oil packs were not prescribed, reflecting the different anatomical locus.

Abdominal Massage and Olive Oil

Immediately after removal of the castor oil packs, the right abdominal area received thorough massage with deep kneading movements using a mixture of olive oil and tincture of myrrh, to help break up lesions and adhesions. Two tablespoonfuls of olive oil taken internally at bedtime on the last day of each three-day series was a consistent prescription — as a fat absorbed through the lacteal ducts, potentially increasing flow through them and lubricating the adhesion zone.

Osteopathic Manipulation

Osteopathic massage and manipulation followed castor oil packs in virtually every case, designed to correct mechanical abnormalities in spinal segments and stimulate the autonomic nerve system. Special attention was directed to the sacrococcygeal area, the ninth through eleventh dorsal segments, and the first three cervicals

(Pahnke, 1983). Pahnke notes the sequential dependency: castor oil packs were an essential preliminary step so that manipulations would have maximum effect on the lesions and adhesions.

Passion Flower (Maypop)

A boiled concentrate prepared from the passion flower (*Passiflora incarnata*, also called Maypop or mayflower) was prescribed to replace or reduce the use of sedative anticonvulsants. The readings described it as non-habit-forming with a calming action on the nerve system that aided eliminations and helped retard muscular contractions (Pahnke, 1983). It was a consistent recommendation across all three epilepsy types, though its specific formulation and dosing varied by case. The outcome in case 571 is illustrative: the mother's report confirmed attacks gradually diminished and finally ceased altogether after Maypop bitters replaced luminal as the primary treatment.

Diet and Eliminations

The dietary prescription follows the general Cayce dietary principles with specific modifications, the most distinctive being severe restriction of sugars and avoidance of fried foods and certain fruits. Maintenance of adequate bowel function was addressed through olive oil, laxatives, and colonics when elimination was particularly problematic, given the direct connection between eliminative adequacy and seizure frequency established in reading 1980-1.

Laying on of Hands

For colonic type epilepsy and cases involving the pineal and spiritual dimensions, the laying on of hands was a specific therapeutic recommendation. Reading 281-5 specifies placement of the right hand over the solar plexus center in the spine (9th and 10th dorsal) and the left hand over the caecum and transverse colon area — the anatomical locus of colonic type pathology. For hormonal type cases with strong spiritual dimensions, daily laying

on of hands with specific affirmations was prescribed to restore energetic coordination through the Leydig-pineal axis.

Modern Context

The Brain-Centered Model and the Readings' Alternative

Modern neurology defines epilepsy as a chronic neurological disorder characterized by recurrent unprovoked seizures arising from abnormal, excessive, or synchronous neuronal activity in the brain. The ILAE classification (Scheffer et al., 2017) organizes epilepsies by seizure type, epilepsy type, and epilepsy syndrome, with etiology classified as structural, genetic, infectious, metabolic, immune, or unknown. Fifty percent of all cases remain classified as of unknown etiology. The readings' identification of primary pathology in peripheral systems — the lacteal ducts, the large intestine, the reproductive-endocrine axis — with seizures arising as secondary consequences, represents a fundamentally different etiological framework. The readings do not deny that the brain is the site of seizure expression. They locate the primary cause upstream of the brain.

True Epilepsy and the Gut-Brain Axis

The gut-brain axis — the bidirectional communication system between the gastrointestinal tract and the central nervous system, mediated through the enteric nerve system, vagal afferents, and spinal sympathetic pathways — is one of the most actively researched areas in modern neurogastroenterology. The readings' account of lacteal duct adhesions producing a "short circuit" in the sympathetic-cerebrospinal system corresponds in anatomical terms to modern understanding of visceral afferent pathways from the small intestine reaching the brain through the sympathetic splanchnic nerves and vagal afferents, pathways capable of influencing cortical excitability and seizure threshold.

Intestinal lymphatic function and its metabolic implications are subjects of growing research attention. Cifarelli and Eichmann (2019) note that "modulation of gut lymphatics might represent a

novel therapeutic strategy to prevent diet-induced obesity and the metabolic syndrome" — signaling a renewed scientific interest in the lacteal system as a therapeutic target. Solari et al. (2021) document the interplay between gut lymphatic vessels and the microbiome, noting that "the knowledge on the reverse relationship between lymphatic function and gut microbiota is still to be acquired" — an area that overlaps directly with the readings' emphasis on lacteal duct pathology as a systemic disturbance.

Colonic Type Epilepsy: Abdominal Epilepsy and Focal-Onset Epilepsy

The readings' designation of colonic type epilepsy finds its closest modern parallel in abdominal epilepsy and focal-onset epilepsy, particularly temporal lobe epilepsy (Murai et al., 2014; Meng et al., 2026). Thus abdominal epilepsy is associated with temporal lobe epilepsy (TLE), most commonly diagnosed in the pediatric population but also occurring in adults, and often missed because gastrointestinal symptoms rather than obvious convulsions dominate the presentation (Harshe et al., 2016). Its clinical picture spans a spectrum of both gastrointestinal and CNS manifestations: gastrointestinal symptoms include recurrent abdominal pain, nausea, vomiting, bloating, and diarrhea; CNS manifestations include confusion, fatigue, headache, dizziness, and syncope (Dutta et al., 2007). Peppercorn and Herzog (1989) note that "it is not clear that the initial disturbance in abdominal epilepsy arises in the brain," pointing to direct sensory pathways from the bowel via the vagus nerve to the solitary nucleus of the medulla, which is heavily connected to the amygdala, and which can be activated during intestinal contractions.

The abdominal aura — abdominal sensations such as pain, nausea, gassiness, and hunger that commonly herald the onset of a motor seizure — is recognized as the most common aura in epilepsy,

especially TLE (Zinkin & Peppercorn, 2005). Henkel et al. (2002) found that an abdominal aura is associated with TLE with a probability of 73.6%, rising to 98.3% when the abdominal aura evolves into an automotor seizure. This high diagnostic specificity places the abdominal aura at the center of the TLE-abdominal connection that the readings appear to anticipate in the colonic type designation.

The enteric nervous system (ENS) — the third division of the autonomic nervous system, alongside the sympathetic and parasympathetic — corresponds closely to what the readings call "the vegetative nerve system of the intestinal tract" (120-3). Khlevner et al. (2018) describe the ENS as a "second brain" because of its many similarities with the central nervous system: virtually every class of neurotransmitter found in the CNS is also detected in the ENS, and the development of the ENS shows numerous parallels with that of the CNS. The interaction between the gut microbiota, the enteric and vagus nerve system, and the hypothalamic-pituitary-adrenal axis is identified as potentially involved in the manifestation of epileptic events (Mengoli et al., 2023), connecting the colonic type's enteric pathology to modern seizure neuroscience.

The King et al. (2017) thermography study is particularly relevant to the colonic type, since it used focal-onset epilepsy as its study population. The results supported "the hypothesis that individuals with focal onset epilepsy have colder abdominal areas" and the authors specifically noted that "formulation of the present study was also derived from the possible relationship between the nature of the focal-onset epilepsy and the infrequently occurring diagnosis of 'abdominal epilepsy.'" The cold areas in that study were distributed across the abdomen in the area of the transverse colon — the same

anatomical region emphasized in the colonic type cases and in the laying-on-of-hands protocol for case 1784.

Hormonal Type Epilepsy and Catamenial Epilepsy

The hormonal type epilepsy described in the readings corresponds closely to the modern category of catamenial epilepsy, in which seizure frequency and severity fluctuate with the menstrual cycle. Research confirms a complex, bidirectional interdependence between sex steroid hormones and epilepsy: hormones affect seizures, while seizures affect hormones and thereby disturb reproductive endocrine function (Taubøll et al., 2015). Both female and male sex steroid hormones influence brain excitability. Velíšková and Desantis (2013) document that clinical and experimental studies show "seizures reflect changes in sex hormone levels; in some women with epilepsy, seizure exacerbation can be related to periodical hormonal fluctuations during the ovarian cycles." Morrell (2002) notes that seizure frequency and severity may change at puberty, over the menstrual cycle, with pregnancy, and at menopause, with estrogen increasing seizure risk and progesterone having an inhibitory effect.

The treatment gap for catamenial epilepsy is significant. Reddy (2009) states that there is "no specific drug available today for catamenial epilepsy, which has not been successfully treated with conventional antiepileptic drugs." The readings' emphasis on addressing the reproductive system directly — through natural remedies, hormonal intervention, and in cases such as 543, even surgical options — represents a peripheral-cause therapeutic strategy that modern neuroendocrinology has yet to fully operationalize. French (2005) notes that treatment attempts have involved hormonal manipulation including hysterectomy or oophorectomy as well as oral contraceptives, natural progesterone,

and estrogen-receptor antagonists, none conducted under blinded, randomized, or controlled conditions.

The section on neuroendocrine involvement in epilepsy in *The Treatment of Epilepsy* (McMillin, 2022, section 1.6) reviews the modern literature on sex hormones and seizure susceptibility (1.6.2), the hypothalamic-pituitary-adrenal axis and stress (1.6.3), the pineal gland (1.6.4), and the brain as an endocrine gland (1.6.5) — providing the comparative framework within which the hormonal type cases from the readings can be evaluated.

Conclusion

The readings' account of epilepsy presents a fundamentally different etiological framework from the brain-centered model that dominates modern neurology. Seizures are understood as the terminal expression of peripheral pathological processes originating in the abdominal lymphatic system, the large intestine, or the reproductive-endocrine axis, with the brain serving as the site of seizure expression rather than primary cause. Three clinically distinct types emerge from the readings — true epilepsy arising from lacteal duct adhesions in the upper small intestine, colonic type arising from enteric nervous system pathology in the large intestine, and hormonal type linked to reproductive system dysfunction — each requiring different diagnostic identification and a distinct therapeutic program directed at its specific peripheral cause. The readings' most diagnostically specific claim — that from every condition of true epileptic nature there will be found a cold spot or area over the lacteal duct region on the right side of the abdomen — has received partial empirical support from thermographic studies of epileptic populations. The broader account of abdominal lymphatic pathology producing sympathetic-cerebrospinal incoordination finds structural resonance in modern understanding

of visceral afferent pathways from the small intestine to the brain. The growing gut-brain axis literature, the documented clinical entity of abdominal epilepsy corresponding to the colonic type, and the well-characterized bidirectional relationship between sex hormones and seizure frequency in catamenial epilepsy all provide modern scientific context within which the readings' peripheral-cause framework can be productively evaluated. The readings' therapeutic program — directed at the root cause in the abdominal and endocrine systems through castor oil packs, osteopathic manipulation, passion flower, and dietary and eliminative measures — represents a clinically coherent strategy that complements the modern pharmacological approach of seizure suppression without addressing primary etiology. As the readings themselves urged, sustained and systematic research on this framework could yield meaningful contributions to the understanding and treatment of a condition whose primary cause remains, in approximately 50% of cases, classified as unknown.

5.3 Migraine

Abstract

The readings' account of migraine is distinguished by two features that set it apart from the dominant modern neurological model. First, the readings consistently locate the primary cause in the colon and digestive system rather than in brain neurochemistry or neurovascular physiology. Second, they treat migraine not as a primary brain disorder but as a reflex condition in which colonic, gallbladder, stomach, or glandular disturbance generates toxic pressure that is conducted upward through the sympathetic and cerebrospinal systems to express as violent headache through the fifth cranial nerve and vagus centers. This upstream localization

makes migraine, in the readings' framework, among the most correctable of serious chronic conditions — because addressing the colonic-eliminative source removes the basis on which the reflex headache rests. The therapeutic program that follows from this account emphasizes intestinal cleansing, dietary modification, spinal manipulation, and osteopathic treatment of the upper dorsal and cervical relay centers, with the stated expectation that removing the colonic source will progressively eliminate the headaches. The readings' intestinal etiology model finds substantial support in a body of modern gastroenterological and epidemiological research, and has been developed into a formal integrative framework by McMillin (1999) drawing on both the readings' account and the contemporary literature on gut-brain interaction, dietary migraine, and enteric nervous system involvement in headache pathophysiology.

Introduction

A basic etiologic relationship exists among all cases of migraine headaches.... Most of them, Cayce said, begin from congestion in the colon which causes pressures on the sympathetic nerve centers and the cerebrospinal system indicating distress somewhere in the body. Each reading represents an individual case, though there is a cause-and-effect similarity in all of them. (Bjork, 1983)

Like the conditions addressed in other sections of this chapter, migraine receives careful diagnostic scrutiny in the readings. Several readings explicitly state that the condition presented is not true migraine, while carefully describing what it is and how, in certain instances, it may develop into true migraine if left uncorrected. The readings thus distinguish between migraine as an established constitutional condition and migraine-like headaches arising from

correctable causes that may progress toward true migraine if the underlying disturbances are not addressed.

The readings' account of migraine is notable for two features that distinguish it from the dominant modern neurological model. First, the readings consistently locate the primary cause of migraine in the colon and digestive system — not in the brain, neurovascular system, or any primary cranial structure. Second, the readings treat migraine not as a brain disorder but as a reflex condition. The colon, gallbladder, stomach, or glandular system generates toxic pressure that is conducted upward through the sympathetic and cerebrospinal nerve systems to express as violent headache through the fifth cranial nerve and vagus centers. This understanding makes migraine, in the readings' framework, among the most clearly correctable of serious chronic conditions — because addressing the source in the digestive-eliminative system removes the upstream cause of the reflex.

Reading 3329-1 offers an unusually candid comment on the medical understanding of migraine in the period: "Here we have a type that is sometimes called migraine, or that really means 'we don't know the source of same.'" This editorial observation reflects the readings' characteristic position. The difficulty in treating migraine in contemporary medicine arose not from therapeutic limitations but from etiological confusion — the failure to trace the headache back to its digestive and eliminative source.

Definition and Classification

True Migraine and Its Mimic Conditions

The readings apply the same "true" qualifier to migraine that they apply to epilepsy, arthritis, and other conditions. Reading 3051-6 states: "when we remove entirely the conditions through the colon

we will have less and less of the headaches; for this is not true migraine." Reading 3148-1, asked directly "Do I have migraine?" responds: "No, not true migraine." Reading 5285-1 states: "These are not true migraine, rather are they the thickening of tissue which causes the pressure over the eyes, from the particular area indicated in the lumbar, and where the brush end of the cerebrospinal and the sympathetic nerve reflex, from the 3rd cervical, branch into the area." Reading 1400-1 applies the characteristic restraint of the readings' diagnostic precision: "These conditions as we find are somewhat of a complication. While these have been called migraine, this as we find is not the perfect description of the character of distresses as would be indicated by the name."

Reading 1017-1, asked whether the patient suffers from what the medical world calls migraine headaches, responds: "No. Not in toto. True, there are some symptoms of same; but it is rather that as we have indicated — a disturbance in the circulation that has borne upon the system in such a manner as to make for irritations in such measures, in such ways, that it has borne upon not only the sympathetic but the cerebrospinal nervous system."

Several readings identify migraine as the potential endpoint of a developing condition that has not yet reached that stage. Reading 5020-1 states: "These, as we find, are not migraine but they may become such unless measures are taken." Reading 5285-1 similarly notes: "These, as we find, should be dissipated and, unless they are, may grow to become constitutional or turn towards what is sometimes called migraine headaches." This developmental framing — conditions that will progress to true constitutional migraine if left uncorrected — reinforces the readings' consistent message that early intervention at the correctable functional stage prevents the transition to established constitutional pathology.

Anatomy and Pathophysiology: The Migrainous Process

The Colon as the Primary Source

The most consistently identified anatomical source of migraine in the readings is the colon — specifically, congestion and adhesion in the colon that produces toxic material which then exerts pressure upon the sympathetic and cerebrospinal nerve centers. Reading 3400-2 provides the most direct and comprehensive statement: "Most of these, as in this case, begin from congestions in the colon. These cause toxic conditions to make pressures on the sympathetic nerve centers and on the cerebrospinal system. And these pressures cause the violent headaches, and almost irrational activities at times."

Reading 3630-1 adds the structural detail: "As in most conditions of the nature of migraine or so-called headaches, the cause is in the colon — where there are patches of adhesions of fecal forces to the walls of the intestine, causing activities that come in general cycles. These may come at times regularly, almost so that you could set this by your clock at times; for it is as the regularity of the system itself." The characterization of fecal adhesions — patches of fecal material adhering to the colon walls — as the structural basis of the toxic production is one of the most specific pathological descriptions in the migraine readings. The cyclical, clock-like regularity of attacks noted here corresponds to the clinical observation of periodic migraine occurring at predictable intervals, here explained by the regularity of the intestinal cycling that generates the toxic pressure.

Reading 4023-1 provides an extended account of the colon-to-fifth-nerve pathway. Colonic disturbances "cause what has been termed migraine headache or pressures upon the 5th nerve; so as to cause, as it were, all characters of nerve tension through head and face, teeth — or in gums, sinus, soft tissue of face and head." Reading

5200-1, asked the cause of migraine headaches that precede rectal hemorrhages, states simply: "The conditions in colon."

The Gallbladder and Gall Duct as Contributing Source

The gallbladder and gall duct are specifically identified as the "larger contributing factor" in the 2078 case series. Reading 2078-3 responds to the direct question "Does the gall bladder ailment cause the occasional migraine headaches?" with: "It's the larger contributing factor, and with the better eliminations these should be farther and farther apart." Reading 1857-1 prescribes specific treatment: "This is the reflex here from the condition in the gall duct area, and as those applications are made CORRECTING the eliminations and the lesions, we will find that the headaches will gradually disappear." Reading 5020-1 describes the combined contribution: "the impactions in the colon area have added to the congestions in the liver and gall duct. These increase the headaches, the sick headaches and nausea, hard headaches."

The gallbladder-migraine connection in the readings is consistent with the gallbladder's position as a key organ of the hepatic-eliminative axis. Gallbladder congestion produces a disturbance in the hepatic circulation that propagates through the mesenteric and sympathetic nerve networks, generating reflex effects at sites distant from the gallbladder itself. The migraine represents one expression of this gallbladder-mediated toxic reflex when the sympathetic pathway conducting the gallbladder disturbance reaches the fifth cranial nerve and vagus centers.

The Stomach as Source

In reading 3043-1 the question is asked "What causes the migraine headaches?" The response is a direct etiological statement: "This is from the stomach." Poor assimilation from the stomach, producing

incompletely processed food mass entering the intestinal system, contributes to the toxic accumulation in the colon that is the more proximate cause of migraine in most cases. The stomach's role as a source of both migraine and epileptiform conditions reflects the readings' broader identification of the upper digestive system as a primary generator of reflex nerve disturbances in the head.

The Glandular System as Contributing Cause

Reading 1295-1, asked to give "the cause and cure of migraine," responds: "The glandular system as has been indicated, that makes for the pressures upon the nerve system and the activities of same to the body." Reading 739-1, asked whether migraine headaches come from a faulty glandular condition, states: "They come rather from the EFFECT of the glandular trouble upon the eliminating system." This formulation is precise and important. The glandular system is not the direct cause of migraine but produces its headache effects by first disturbing the eliminative system, which then generates the toxic colonic pressure that reaches the nerve centers. The glandular chain is thus an upstream contributor — when the glandular system is properly balanced, the eliminative system functions normally, and the colon does not generate the toxic pressure that produces migraine.

Reading 3326-1 points to dietary allergic reactions in the digestive system as the specific link between the eliminative system and the colonic source of migraine: "the sources of the conditions to which the body becomes allergic in the digestive system should be looked for — that deal with all migraine headaches."

The Nerve Pathway: From Colon to Fifth Nerve and Vagus

The pathway by which colonic toxic pressure reaches the head as migraine runs through the sympathetic and cerebrospinal nerve

systems, ultimately expressing through the fifth cranial nerve (trigeminal) and the vagus nerve (pneumogastric). Reading 2078-1 describes this pathway: "These find reflex reaction through the nerve pressures from the areas in the cerebrospinal system as indicated, as combined with the nerve flexure to head, nasal passage, and those areas in the whole of the vegetative nerve force, — as to produce a continued reaction from digestive forces, or a headache — that is called the migraine nature."

Reading 1651-1 identifies the terminal nerve structures: "there has been caused what has been termed migraine, or the effect of the fifth nerve center and the vagus center as to the headaches — on top of the head at times, at others at the base of the brain and then through the temple and eyes." This description of pain distribution — top of the head, base of the brain, temple, eyes — corresponds precisely to the classical clinical description of migraine headache distribution along the trigeminal (fifth nerve) and its ophthalmic branch, and the vagal centers governing the base of the brain.

Reading 5285-1 identifies an intermediate relay between the colonic source and the cranial nerve distribution: the lumbar nerve centers, from which the brush end of the cerebrospinal and sympathetic nerve reflex from the 3rd cervical branches into the cranial territory. Reading 1807-1 identifies the upper dorsal and vagus centers as accessible at the ascending nerve pathway: "the pressure and the effect of these upon the nerve forces as radiate through the vagus centers and areas are becoming involved, and will be found to be very tender; especially in the upper dorsal areas." Reading 480-8 specifies the directly treatable relay points: "By a direct application or treatment to those centers through which this activity is pushing to the impulses of the whole system; that is, to the 3rd and 4th dorsal and 4th and 5th cervical."

Etiology: The Causes of Migrainous Colonic Disturbance

The readings identify the colonic congestion and adhesion that produces migraine as itself having multiple upstream causes. These correspond directly to the precipitating and maintaining factors that modern migraine research has identified through the dietary migraine literature.

Dietary Causes

Reading 3326-1's refers to conditions "to which the body becomes allergic in the digestive system" as the sources of migraine headaches places dietary allergy and food intolerance at the etiological origin. The colon's fecal adhesions described in reading 3630-1 represent the structural residue of dietary-digestive dysfunction — the accumulation, over time, of incompletely processed food material that adheres to the colonic walls and generates the ongoing toxic production that drives migraine cycles.

McMillin (1999) places this within a comprehensive framework. Historical perspectives on migraine consistently directed therapeutic attention to the gastrointestinal features of the illness, using natural therapies to improve digestion, assimilation, and elimination. The rediscovery of dietary migraine in modern research — with identified triggers including wheat (78% of food-sensitive migraineurs in one study), orange, eggs, tea, coffee, chocolate, milk, beef, corn, and yeast (Grant, 1979) — is consistent with the readings' identification of digestive allergic responses as a primary cause.

Poor Elimination and Hepatic Congestion

Inadequate bowel elimination — allowing toxic material to accumulate in the colon rather than being expelled — is identified across the migraine readings as the condition that permits the fecal

adhesion pattern to develop and persist. The gallbladder and liver connection (readings 2078-3, 5020-1) places hepatic congestion as a compounding factor. When the liver and gall duct are congested, their contribution to the toxic burden in the abdominal system intensifies the colonic pressure that reaches the nerve centers.

Glandular Imbalance

As described above, glandular dysfunction produces its migrainous effects by disturbing the eliminative system rather than directly generating headache. The hormonal dimension is particularly significant for female patients. The readings' identification of the glandular system as a contributing cause is consistent with the well-documented clinical association between hormonal fluctuations (menstrual cycle, pregnancy, menopause) and migraine.

Spinal and Somatic Dysfunction

The lumbar and cervical spinal factors identified in reading 5285-1 represent a distinct etiological pathway. Spinal lesions at the lumbar-sacral level or cervical level that disrupt the sympathetic-cerebrospinal coordination can themselves generate the pattern of ascending nerve irritation that produces migraine, or can compound and perpetuate a migraine process initiated by colonic toxemia. The osteopathic and chiropractic literature has consistently documented the role of cervical and upper dorsal somatic dysfunction in migraine — not through direct nerve compression but through the effects of disturbed nerve reflexes on vegetative digestive function and on vasomotor regulation of cranial circulation.

Pathogenesis: The Causal Chain

The readings' account of migraine describes a causal chain beginning in the digestive-eliminative system and ascending to cranial nerve expression. The process begins with dietary, glandular,

or hepatic factors that impair normal digestive processing and elimination. Incompletely processed food material accumulates in the colon; over time this produces the patches of fecal adhesions described in reading 3630-1, adhering to the colon walls. These adhesions generate ongoing toxic production — reading 3400-2's "toxic conditions" — that exerts pressure upon the sympathetic nerve centers of the abdomen.

This abdominal sympathetic pressure propagates upward through the nerve system, traveling from the lower abdominal plexuses through the mesenteric and solar plexus ganglia, through the lumbar relay centers identified in reading 5285-1, ascending along the upper dorsal and vagus centers identified in reading 1807-1 as tender under palpation, and reaching the 3rd and 4th dorsal and 4th and 5th cervical relay points identified in reading 480-8 as the accessible treatment points for interrupting the ascending impulse.

At the cervical-cranial junction, the ascending toxic pressure engages the vagus nerve centers and the fifth cranial nerve, producing the inflammatory vasodilation and neurogenic activation in the trigeminal territory that generates the characteristic migrainous headache. The wide distribution of pain through head, face, teeth, gums, and sinuses (reading 4023-1) reflects the extensive sensory territory of the trigeminal nerve, activated reflexively from the ascending colonic-sympathetic pathway rather than from primary central nervous system excitability.

The periodicity of migraine attacks — described in reading 3630-1 as cyclical enough to set by your clock — reflects the cyclical rhythm of the intestinal process that generates the toxic pressure. When the colon cycles into a period of greater adhesion activity or toxic production, the ascending pressure sufficient to trigger the vagal-trigeminal reflex threshold is reached and an attack results.

Clinical Features

The readings describe migraine's clinical presentation in terms that correspond closely to the modern characterization of the condition. Reading 3630-1 describes attacks of unusual severity that reach "such proportions at times that there is the lapse of memory, that there is then the incoordination in certain areas where the imaginative and the retentive system are disordered, or so disturbed as to bring these lapses" — corresponding to the modern concept of hemiplegic or confusional migraine, rare but recognized variants in which cognitive and memory disturbance accompany the headache.

Reading 3400-2 notes "almost irrational activities at times" during the violent headache phase — a clinical observation consistent with the cognitive impairment, confusion, and behavioral changes that can accompany severe migraine attacks. Reading 2078-1 documents hematemesis during attacks — "traces of blood when I vomit (during migraine attacks)" — attributed to the straining from vomiting and the liver-gall duct disturbance rather than to gastric hemorrhage.

The periodicity of attacks is specifically noted in reading 3630-1's observation that attacks "come in general cycles. These may come at times regularly, almost so that you could set this by your clock at times; for it is as the regularity of the system itself" — identifying the rhythmicity of intestinal cycling as the basis for the periodicity of migrainous attacks, a clinical feature that distinguishes episodic migraine from other chronic daily headaches.

The case reports of reading 480-28 document a complete cure following pregnancy: "Following this pregnancy, Mrs. [480] was completely relieved of the migraine headaches and constant mental haziness with which she had suffered for a period of over three years." (480-28, report) This illustrates the hormonal-glandular

dimension of migraine that the readings' emphasis on the glandular system as a contributing factor suggests — a pregnancy-related hormonal change sufficient to normalize the glandular-eliminative system and permanently resolve a long-standing migraine condition.

Therapeutics

The readings' therapeutic approach to migraine follows directly from its colonic-eliminative etiology. Remove the source of toxic pressure in the digestive system, restore normal eliminative function, address the spinal relay points through which the ascending impulse travels, and support the glandular and nutritional balance that maintains normal digestive function.

Intestinal Cleansing: Colonics and Enemas

Colonic irrigation is prescribed across the migraine readings as the primary intervention for removing the fecal adhesions and toxic colonic content that generate migrainous pressure. Reading 3051-6's statement — "when we remove entirely the conditions through the colon we will have less and less of the headaches" — captures the therapeutic rationale: eliminating the colonic source removes the basis of the reflex headache. Reading 5200-1's prescription for injections to "heal the prolapsus in the ascending colon" in a case of migraine associated with rectal hemorrhages illustrates the specificity with which the readings address individual anatomical patterns.

Bjork (1983) specifically recommended colonic irrigation in migraine management — particularly for cases presenting with chronic constipation or x-ray evidence of fecal cakes or intestinal blockage — a recommendation consistent with the readings' emphasis on colonic cleansing as the primary eliminative intervention.

Dietary Modification

Dietary adjustment was consistently prescribed in the migraine readings, both to remove the food triggers that irritate the digestive system and to provide a nutritional foundation that supports normal digestive and eliminative function. The general Cayce dietary principles apply — avoiding fried foods, heavy meats, and strongly acid-producing foods; emphasizing vegetables, fruits, and easily digestible protein. Reading 3326-1's identification of digestive allergic responses as sources of migraine headaches implies an individualized approach to identifying and eliminating specific food triggers, consistent with the elimination diet protocols described in the modern dietary migraine literature (Grant, 1979; Egger et al., 1983).

Osteopathic Manipulation

Osteopathic manipulation at the relay centers identified in reading 480-8 — the 3rd and 4th dorsal and 4th and 5th cervical — is prescribed to interrupt the ascending nerve pathway through which colonic toxic pressure reaches the cranial nerve territory. The manipulation is not directed at the head or the headache itself but at the nerve relay points through which the ascending impulse travels, consistent with the readings' understanding that treating the ascending pathway rather than the terminal expression is the correct therapeutic approach.

Historically, numerous sources in the manual therapy literature (primarily osteopathic and chiropractic) state that structure does affect function and that physical manipulation is efficacious in the treatment of migraine (Barber, 1898; Hazzard, 1905; American College of Mechano-Therapy, 1910). More recent examples of this sort of thinking are also in the literature (Parker et al., 1978; Vernon, 1995; Nelson et al., 1998). Cervical manipulation and upper thoracic

manipulation have demonstrated clinical efficacy in migraine prophylaxis. The readings' specific identification of the upper dorsal and cervical relay centers as treatment targets provides a more anatomically precise rationale than is typically articulated in the manual therapy literature on migraine.

Glandular Support: Atomidine and Related Measures

Where glandular imbalance is identified as a contributing factor, Atomidine and related glandular measures are prescribed to normalize glandular secretion and restore normal eliminative function. The glandular intervention is always secondary to and supportive of the primary intestinal-eliminative program — consistent with reading 739-1's identification of glandular trouble as producing its headache effects through the eliminative system rather than directly.

Modern Context

McMillin's (1999) paper "An Integrative Model of Migraine Based on Intestinal Etiology" represents the primary comparative analysis bringing the readings' account into dialogue with the modern medical literature. The paper proposes that intestinal pathology constitutes a significant etiological subgroup within the broader migraine population — perhaps a major subgroup — or alternatively represents a common pattern that ties together various other migraine subgroups (dietary, cervical, menstrual, abdominal) into a more integrated etiological model. The model draws explicitly on the readings' systems approach and is framed as a complement to standard medical treatments directed toward symptomatic relief.

Modern Neurology's Brain-Centered Model

In modern neurology, migraine is classified as a primary headache disorder — meaning the headache itself is the primary condition, not

a symptom of underlying structural disease. Modern pathophysiology emphasizes cortical spreading depression as the electrophysiological basis of migraine aura and trigeminovascular activation as the primary mechanism of migraine headache — the release of neuropeptides (particularly calcitonin gene-related peptide, CGRP) from trigeminal nerve terminals innervating meningeal blood vessels, producing neurogenic inflammation and vasodilation that generate the characteristic pulsating headache.

The readings' identification of the fifth cranial nerve (trigeminal) and vagus as the terminal nerve structures of the migraine pathway corresponds precisely to the trigeminovascular theory that is now central to modern migraine pathophysiology, and to the known role of the vagus nerve in modulating trigeminovascular nociception (Akerman et al., 2017). The readings' description of pain distribution "through head and face, teeth — or in gums, sinus, soft tissue of face and head" corresponds accurately to the trigeminal distribution that characterizes migrainous pain. Where the readings' account diverges most significantly from the modern neurological model is in locating the primary cause upstream of the brain rather than within brain neurochemistry or neurovascular physiology — treating migraine as a reflex condition rather than a primary brain disorder.

Intestinal Pathology and the Gut-Brain Axis

There is substantial research evidence for intestinal pathology as a significant factor in migraine from multiple lines of research. The association between irritable bowel syndrome (IBS) and migraine has been documented epidemiologically: Watson et al. (1978) observed that persons with IBS have a significantly higher prevalence of migraine-like headache than age-matched controls; Jones and Lydeard (1992) found migraine and related systemic

symptoms significantly more common in IBS individuals than in those without IBS. Gasbarrini et al. (1998) found *Helicobacter pylori* in 40% of 225 consecutive migraine patients, with significant reduction in migraine intensity, duration, and frequency following *H. pylori* eradication in 83% of treated patients. Rousset et al. (1985) documented a high rate of migraine and systemic symptoms in cholecystectomized patients — directly consistent with the readings' identification of the gallbladder as a major contributing source.

The enteric nervous system — the extensive network of neurons dispersed throughout the gut, first named by British physiologist Langley, now recognized as containing approximately 100 million neurons (comparable to the spinal cord) — provides the anatomical basis for the readings' gut-to-brain nerve reflex account of migraine. About 80% of vagal fibers are visceral afferents (Davenport, 1978), and the enteric nervous system can influence the central nervous system both through nerve reflexes and the production of neuropeptides — providing multiple mechanisms by which intestinal pathology could trigger the trigeminovascular activation that produces migraine headache.

Serotonin is a key neurotransmitter in the pathogenesis of migraine — 5-HT_{1B/1D} receptor agonists (triptans) are the most effective and best-established drugs for acute migraine treatment (Ferrari et al., 2001) — and intestinal serotonin dysregulation, including altered enterochromaffin cell numbers, serotonin content, and serotonin reuptake transporter expression, is a recognized feature of IBS (Mawe et al., 2006). The gut-brain serotonin axis thus provides a plausible biochemical mechanism connecting the intestinal disturbances the readings identify as the primary cause of migraine to the trigeminovascular activation that produces the headache.

The modern gut-brain axis literature has further documented bidirectional communication between the gastrointestinal tract and the central nervous system through the vagus nerve, spinal afferents, and the microbiome-gut-brain pathway. Hindiyeh et al. (2020) reviewed the role of diet and nutrition in migraine triggers and treatment, confirming the extensive evidence for dietary food triggers and noting the emerging role of intestinal microbiome composition in influencing trigeminal pain sensitivity and migraine frequency — directly resonant with the readings' account of dietary digestive disturbance as a primary migrainous cause.

Dietary Migraine

The connection between food consumption and migraine has "respectable antiquity" (Glover et al., 1983). Grant's (1979) study of 60 migraine patients using an elimination diet found that 85% became headache-free when specific trigger foods were avoided. Egger et al.'s (1983) double-blind controlled trial of oligoantigenic diet demonstrated recovery in 93% of 88 children with severe frequent migraine. Monro et al. (1984) demonstrated that sodium cromoglycate — a mast cell stabilizer that prevents food-allergic reactions — significantly reduced migraine symptoms compared to placebo, supporting a food-allergic etiology.

The biochemical dimension includes Glover et al.'s (1983) identification of a deficiency in phenolsulphotransferase — an enzyme particularly active in the intestine that detoxifies phenols present in migraine triggers such as chocolate, cheese, and citrus fruits — in dietary migraine patients. This enzyme-deficiency model provides a specific intestinal metabolic mechanism consistent with the readings' colonic-toxic etiology.

Somatic Dysfunction and Manual Therapy

The osteopathic and chiropractic literature has consistently documented the role of cervical and upper dorsal somatic dysfunction as a significant factor in migraine. Data from both historical sources (Hazzard, 1905; Barber, 1898) and modern controlled trials (Parker et al., 1978; Nelson et al., 1998), documents that cervical manipulation has demonstrated efficacy in migraine prophylaxis. The readings' specific identification of the 3rd and 4th dorsal and 4th and 5th cervical as treatment relay points provides a more mechanistically grounded rationale than is typically provided in the manual therapy literature — framing these centers not as sites of direct nerve compression but as accessible points in the ascending pathway through which colonic toxic pressure reaches the cranial nerve territory.

Pregnancy and Hormonal Remission

The case note documenting patient [480]'s complete migraine cure following pregnancy corresponds to the well-documented clinical phenomenon of migraine improvement in the second and third trimesters of pregnancy — attributed in modern medicine to the sustained high estrogen levels of pregnancy, which reduce trigeminovascular excitability (Sances et al., 2003; Nappi et al., 2022). The readings' attribution of this cure to normalization of the glandular-eliminative system during pregnancy offers a complementary explanation from within their own physiological framework.

Conclusion

The readings' account of migraine locates its primary cause not in brain neurochemistry or neurovascular physiology but in the colon and digestive-eliminative system — specifically in the fecal adhesion

pattern and toxic production of a congested colon that conducts pressure upward through the sympathetic and cerebrospinal nerve systems to express as violent headache through the fifth cranial nerve and vagus centers. This intestinal-etiology model is among the most therapeutically practical because migraine is a reflex condition with an identifiable and correctable peripheral source. The readings express confidence that systematic removal of that source through colonic cleansing, dietary modification, osteopathic manipulation at the spinal relay centers, and glandular support will progressively eliminate the headaches rather than merely suppress their expression. The modern research literature provides substantial support for this framework from multiple independent lines of evidence. The epidemiological association between irritable bowel syndrome and migraine, dietary trigger research demonstrating headache remission in the majority of food-sensitive migraineurs through elimination protocols, the gut-brain serotonin axis connecting intestinal serotonin dysregulation to trigeminovascular activation, and the vagal afferent pathways providing the anatomical infrastructure for the ascending visceral reflex the readings describe are all well documented. The readings' identification of the fifth cranial nerve and vagus as the terminal structures of the migrainous pathway corresponds precisely to the trigeminovascular model now central to modern migraine pathophysiology. Where the readings' account diverges most significantly from modern neurological classification — in treating migraine as a secondary reflex condition whose primary cause lies upstream of the brain rather than a primary brain disorder — is precisely where it offers the greatest clinical potential, since most current therapeutic approaches are directed toward acute symptomatic relief at the brain level rather than correction of the peripheral digestive source from which the reflex originates.

5.4 Psoriasis

Abstract

Psoriasis is a chronic, immune-mediated inflammatory skin disease. Long viewed primarily as a disorder of aberrant keratinocyte proliferation, psoriasis is now recognized as a systemic inflammatory disease with wide-ranging implications for metabolic, cardiovascular, musculoskeletal, hepatic, renal, gastrointestinal, and neuropsychiatric health. This section describes the Cayce readings' approach to the causes and treatment of psoriasis. Essentially, the readings describe psoriasis as the system's intelligent deployment of the skin as a secondary eliminative organ — the body routing toxic material through the epidermis and capillary-lymph circulation because it cannot adequately eliminate it through the other primary channels (intestines, kidneys, and lungs). From this perspective, suppressing the skin eruption without addressing the underlying systemic toxic burden would not cure the condition but could redirect the toxic material to an internal organ resulting in a wide variety of well documented comorbidities. This perspective — that the skin eruption is protective rather than pathological in the primary sense — has a practical therapeutic implication. Topical suppression alone is explicitly insufficient, and the readings consistently prescribe systemic treatment (dietary correction, intestinal cleansing, lymph circulation restoration) rather than local applications as the foundation of effective management.

Introduction

The Cayce readings implicate the lack of proper coordination of the elimination systems causing a thinning of the walls of the small intestine — specifically, the jejunum and the lower duodenum — in the etiology

of psoriasis. This thinning allows toxic products to leak from the intestinal tract into the circulation; these eventually find their way into the superficial circulation and lymphatics and are eliminated through the skin, producing the plaques of psoriasis. (Mein, 1989, p. 196)

Psoriasis is one of the oldest documented human diseases. Descriptions matching its characteristic plaques appear in ancient Egyptian papyri, classical Greek medical texts, and the writings of Galen and Hippocrates. Yet despite millennia of observation and more than a century of modern biomedical investigation, psoriasis continues to surprise researchers with the depth and reach of its pathophysiological complexity. Once categorized narrowly as a disorder of excessive skin cell proliferation, it is now understood as a prototypical systemic immune-mediated inflammatory disease whose manifestations extend far beyond the visible lesions of the skin (Boehncke & Schön, 2015).

Globally, psoriasis affects approximately 2–3% of adults and 0.5–1% of children, with an estimated 60 million people worldwide living with the condition (Cristofori et al., 2025; Sieminska et al., 2024). The disease carries an enormous burden of morbidity—physical, psychological, and social—and is associated with a substantially reduced quality of life and a measurably shortened life expectancy in severe cases.

Psoriasis stands as a paradigmatic example of a disease whose conceptual boundaries have been radically redrawn by modern biomedical research. What was once understood as excessive skin cell turnover is now recognized as a complex autoimmune inflammatory disorder with its pathophysiological roots in a dysregulated immune system, a permeable gut barrier, a disturbed microbiome, neuroendocrine dysregulation, and genetic

susceptibility—and its clinical consequences extending to the cardiovascular system, joints, liver, kidneys, brain, and psychological health.

Standard treatment options include corticosteroids, vitamin D₃ analogues, calcineurin inhibitors, methotrexate, cyclosporine, acitretin, phototherapy, and biological agents (Zhu et al., 2022)

There has been a growing awareness that treatments that focus on skin inflammation may not fully address the systemic consequences of psoriatic disease—and that the gut, the microbiome, the nervous system, and metabolic health must also be considered—driving an increasingly integrative and holistic approach to management. The gut-skin axis, intestinal permeability, and microbiome dysbiosis represent domains where the frontier of mainstream science is converging with frameworks that have long emphasized the centrality of intestinal health, systemic eliminations, and the interconnectedness of bodily systems in the genesis of chronic skin disease. These convergences represent one of the most intellectually and clinically productive frontiers in contemporary dermatology.

The Cayce Readings Perspective

The readings' approach to psoriasis has been described by Lansford (1983), Mein (1989), and Pagano (1991). In essence, it focuses on intestinal permeability as a primary factor in the pathogenesis of psoriasis. Thinning of the walls of the small intestine allows toxins to leak from the intestinal tract into the circulation. These eventually make their way to the perspiratory system of the skin for elimination, triggering an immune response and the plaques of psoriasis.

Thus the readings treat psoriasis not as a primary skin disease but as a manifestation of a systemic eliminative failure — specifically, the

escape of intestinal poisons through thinned intestinal walls into the lymph circulation, which then carries the toxicity to the skin surface as the body's secondary eliminative channel. This understanding inverts the conventional medical approach to psoriasis — which has historically treated it as a condition of the skin to be addressed locally. It places the therapeutic focus entirely on the intestinal tract, the lymph circulation, and the elimination channel operating through the pores of the skin. Reading 992-2 states this principle with characteristic directness: "Let's get at the base of the condition, if we would make a COMPLETE removal of the conditions! These may NOT be done speedily, for the CAUSES must be removed, else we will have a continued return of the condition."

Definition and Diagnosis

What Psoriasis Is in the Readings

The readings consistently identify psoriasis as a condition of the lymph and emunctory circulation rather than a primary skin condition. Reading 3032-1 states: "the activities of the lymph and emunctory circulations through these portions carry that humor into the lymph circulation, which causes that irritation to the skin called psoriasis." Reading 943-17 defines it as "an infectious condition that affects the emunctory and lymph circulation, and causes an improper coordination of the eliminating forces of the system." Reading 3827-1 offers the term "cuticle psoriasis" and explains: "a condition produced in the system whereby the body, through its blood supply, attempts to eliminate the toxins carried in the blood where they are not eliminated through their proper functionings."

Reading 5016-1, asked whether psoriasis is always from the same cause, responds: "No, but it is more often from the lack of proper coordination in the eliminating systems. At times the pressures may be in those areas disturbing the equilibrium between the heart and

liver, or between heart and lungs. But it is always caused by a condition of lack of lymph circulation through alimentary canal and by absorption of such activities through the body." This passage establishes both the common cause (lymph circulation failure through the alimentary canal) and the possibility of variation in the proximate pressures that create it — while maintaining the intestinal-lymphatic mechanism as the primary focus.

Diagnostic Qualification

Reading 982-1's exchange is notable for being a clear negative: asked "Is this condition what is commonly known as psoriasis?" the response is simply "No" — with the editorial note identifying this as Gladys Davis's own incorrect guess. It was a reasonable question based on the stated premise of thinned intestinal walls and leakage of toxin into the circulation described in the reading: "For there is a thinning of the walls of the intestines themselves, in the jejunum." However not all cases of "leaky gut" result in psoriasis. As noted by Pagano (1991), other skin diseases (such as eczema) can also be traced to a leaky gut. So the brief denial in reading 982-1 serves to remind the reader of the readings' diagnostic precision. The skin condition in question was something other than psoriasis, and the readings made that distinction without a definite diagnosis for that case.

Anatomy and Pathophysiology

The Thinned Intestinal Walls: The Primary Structural Condition

The most fundamental anatomical statement about psoriasis in the readings is the identification of thinning of the intestinal walls as the structural condition through which the systemic toxic seepage originates. Reading 289-1, in response to "Please give me the cause and cure for the so-called psoriasis with which I am troubled," states:

"The cause is the thinning of the walls of the intestinal system, which allows the escaping of poisons — or the absorption of same by the muco-membranes which surround same, and becomes effective in the irritation through the lymph and emunctory reactions in the body."

Reading 641-5 confirms and specifies: "As it is a psora [psoriasis] condition, its action or activity is from seepages through the small intestines." The "seepages" — a term with precise physiological implications — describe not a complete intestinal wall perforation but a diffuse, low-level leakage through thinned, permeable intestinal wall tissue. Reading 289-2 provides the anatomical location: "disturbances in the jejunum where thinning of the walls of the intestines makes for disturbing forces." The jejunum — the second portion of the small intestine, following the duodenum — is identified as the specific segment where the wall thinning is most pathologically significant for psoriasis. This is the same anatomical territory as the lacteal ducts addressed in Section 4.6.3 and the epilepsy material of Section 5.6 — consistent with the readings' identification of the duodenojejunal region as a particularly significant zone for both lymphatic absorption and systemic toxemia.

Reading 270-33 describes the secondary circulatory consequence: "leakages in the intestinal tract, in the thinned walls, and those tendencies for the circulation to carry this in an improper way and manner for the eliminations; producing the rash." The seepage from the thinned walls enters the mesenteric circulation and lymphatics, where the material is carried in an abnormal manner that defeats rather than supports normal elimination — producing the systemic toxicity that ultimately reaches the skin as psoriatic eruption.

The Lymph and Emunctory Pathway to the Skin

Once the intestinal seepage occurs, the pathway to the skin runs through the lymph and emunctory circulation. Reading 3032-1 describes how "the activities of the lymph and emunctory circulations through these portions carry that humor into the lymph circulation, which causes that irritation to the skin." Reading 943-17 identifies the skin as the body's secondary eliminative channel — the route through which the emunctory system discharges what the primary channels (liver, kidneys, bowel) cannot process.

The most remarkable passage in all the readings that discuss psoriasis is the extended statement in reading 943-17 about what would happen if psoriasis were not expressed through the skin:

... psoriasis is — itself — an infectious condition that affects the emunctory and lymph circulation, and causes an improper coordination of the eliminating forces of the system, as in this body. Would this not be thrown off in the epidermis, or the lymph and capillary circulation, with this particular condition of this body, the intestinal tract would be full of pinholes; or, were it to go to the lungs, there would be tuberculosis; were it to go to the valves of the heart, it would be heart trouble — as would be called; were it to go to the liver, it would be cirrhosis of the liver; were it to go to the spleen, it would be a hardening of one end of it; were it to go to the brain, it would be softening of the brain; were it to go to the glands of the throat or thyroids, it would be that of goitre; or were it to settle in some other portion — were it to SETTLE — it would become a tumor of some character or nature. (943-17)

This extraordinary passage frames psoriasis not as a disease to be eliminated but as the body's own emergency eliminative response to

a systemic toxic burden — a response that, while producing an uncomfortable and cosmetically distressing skin condition, is preventing the same toxic material from settling in vital internal organs with catastrophic consequences. The skin eruption is, in this account, a form of systemic protection. Reading 943-17 continues: "whatever may arise, and it TAKES THAT direction in carrying out for what it WAS constructed, and when it meets obstructions; then it attempts to build around, or overcome, by USING other portions or functionings to carry out its function." Psoriasis, properly understood, is the system working — imperfectly but intelligently — to manage a systemic toxic load that it cannot discharge through the primary eliminative channels.

The Liver, Gall Duct, and Hepatic Component

Reading 289-2 identifies the hepatic-digestive system as involved in psoriasis pathology: "Pancreas, spleen and gall ducts show irritation; and fullness in the gall duct, as torpidity in the liver would naturally indicate; as well as disturbances in the jejunum where thinning of the walls of the intestines makes for disturbing forces." The liver's torpidity — its failure to maintain adequate excretory function — contributes to the toxic burden that the intestinal walls and lymph system must compensate for. Reading 5016-1 notes that "the pressures may be in those areas disturbing the equilibrium between the heart and liver, or between heart and lungs" as the proximate cause — acknowledging that hepatic-circulatory imbalance is one pathway through which the eliminative incoordination producing psoriasis can arise.

Etiology: What Produces the Thinned Intestinal Walls

The readings address the causes of intestinal wall thinning in psoriasis less directly than they describe its consequences, but several contributing factors emerge across readings.

Toxic Accumulation and Colon Impaction

Reading 2491-5, asked why the psoriasis appears worse, responds: "The toxic conditions and perforations are worse, through the lack of adherence in diet. Hence the purifying of the colon should aid the more." This confirms the colon as a primary contributor to the systemic toxic burden that drives psoriatic eruption — consistent with the pattern established across migraine (Section 5.3) and other conditions where colon impaction produces systemic toxic pressure. Reading 315-6 prescribes: "Get the poisons out of the system through the colonic, the sweats and massages." Reading 2455-3, on worsening psoriasis, prescribes fruit juices, kraut juices, tomato juices, and prune juices "to aid in the eliminations" — identifying ongoing eliminative support as the daily maintenance requirement.

Acid-Alkaline Imbalance

Reading 270-33 identifies "the tendencies towards an acidity" as associated with the intestinal wall thinning and the psoriatic eruption. This acid tendency — arising from dietary excess of acid-forming foods and insufficient alkaline-reacting foods — corresponds to the acid-alkaline imbalance discussed throughout the readings as a systemic condition that impairs the integrity of mucosal and intestinal tissues. An overacid system weakens the intestinal wall's structural integrity, making it more susceptible to the thinning and seepage that characterize psoriasis.

Nerve Tension and Vital Force Insufficiency

Reading 2491-1 identifies the cause as "nerve tensions, as produced by lack of the vital forces to produce the proper reactions" — placing nerve system insufficiency alongside the eliminative-digestive causes. This nervous dimension, while less prominent in the psoriasis readings than in other conditions, is consistent with the readings' general principle that adequate nerve supply governs

tissue integrity, and that when nerve vitality is depleted, mucosal and epithelial tissues lose their normal resilience and become susceptible to thinning and permeability.

Constitutional and Hereditary Tendencies

Reading 1048-2, asked whether the psoriasis infection will recur, responds: "Not if the corrections are made that are causing or producing same." This implies that psoriasis, in the readings' account, is not an inevitable constitutional destiny but a correctable functional condition — one that will recur only if the underlying causes (intestinal wall thinning, lymph circulation failure, eliminative incoordination) are not addressed. The readings' consistent framing of psoriasis as correctable rather than purely hereditary or irreversible places it firmly in the functional rather than organic category.

Psoriasis as Systemic Self-Protection

The passage from reading 943-17 cited above deserves further consideration as one of the most conceptually distinctive statements about skin disease in all the readings. The readings describe psoriasis as the system's intelligent deployment of the skin as a secondary eliminative organ — the body routing toxic material through the epidermis and capillary-lymph circulation precisely because it cannot adequately discharge it through the other primary channels (intestines, kidneys, and lungs). From this perspective, suppressing the skin eruption without addressing the underlying systemic toxic burden would not cure the condition but redirect the toxic material to an internal organ — where it might produce tuberculosis, cirrhosis, cardiac valvular disease, brain softening, thyroid goiter, or tumor formation, depending on where it "settled."

This perspective — that the skin eruption is protective rather than pathological in the primary sense — has a practical therapeutic implication. Topical suppression alone is explicitly insufficient, and the readings consistently prescribe systemic treatment (dietary correction, intestinal cleansing, lymph circulation restoration) rather than local applications as the foundation of effective management. Reading 992-2's instruction — "These may NOT be done speedily, for the CAUSES must be removed" — reflects the readings' characteristic insistence on addressing root causes rather than surface expressions.

Clinical Picture

Psoriasis in the readings presents as a skin condition with patches, rash, itching, and scaly eruptions distributed across the body and scalp. Reading 3827-1 uses the term "cuticle psoriasis." Reading 641-4 addresses "itching and the tendency for the breaking out." Reading 2455-3 addresses the condition "on my scalp."

Reading 943-17 identifies a progression in severity when the underlying conditions worsen. The psoriasis "shows more in the present than ordinary because of the poisons that arose from the intestinal tract, and in the eliminations of the body — as in the appendicial region." The appendicial-region involvement suggests that focal areas of intestinal inflammation compound the systemic toxic burden and drive more severe psoriatic eruption.

The chronic and recurring character of psoriasis is addressed across the series of readings for case 2455, where the psoriasis persists over multiple readings and requires sustained dietary and therapeutic discipline. Reading 2455-2, asked whether there is an absolute cure for psoriasis, responds: "Most of this is found in diet. There is a cure. It requires patience, persistence — and right thinking also." This three-part prescription — patience, persistence, and right thinking

— is one of the most compact therapeutic directives in the readings on psoriasis, placing the condition's resolution squarely in the domain of sustained individual discipline and mental-spiritual orientation alongside the physical dietary interventions.

Modern Context – A Comprehensive Literature Review

[Note: This review is an extension and update of a previous review by McMillin et al. (1999): *Systemic Aspects Of Psoriasis: An Integrative Model Based On Intestinal Etiology*.]

In modern dermatology, psoriasis is classified as a chronic immune-mediated inflammatory skin disease characterized by hyperproliferation of keratinocytes (the primary skin cells), thickening of the epidermis, and accumulation of inflammatory immune cells, particularly T-lymphocytes and neutrophils, in the dermal and epidermal layers. The plaques of psoriasis — raised, red, scaly patches most commonly on the scalp, elbows, knees, and lower back — represent the visible expression of this inflammatory-proliferative process. The condition affects approximately 2–3% of the global population and has a complex pathogenesis (Bhagwat & Madke, 2023).

The readings' characterization of psoriasis as arising from intestinal wall thinning with toxic seepage into the lymph circulation does not correspond to the current immunological model of psoriasis, in which the primary pathology is understood as a T-cell-mediated immune response in the skin rather than a consequence of intestinal permeability. However, modern gastroenterological research has provided substantial evidence for the concept of increased intestinal permeability — colloquially termed "leaky gut" — as a contributor to systemic inflammation and immune dysregulation. Intestinal permeability, measured by various markers including zonulin, claudin, and occludin, is increased in psoriasis patients compared to

controls, and this increased permeability is associated with altered gut microbiome composition and elevated systemic inflammatory markers (Sikora et al., 2020). The readings' description of the thinned intestinal walls allowing "seepages" of toxic material corresponds in anatomical and physiological terms to the modern concept of intestinal barrier dysfunction — a correspondence that places the readings' psoriasis account within reach of contemporary research frameworks.

The readings' identification of the skin as an eliminative channel activated when other channels are overwhelmed corresponds to the modern recognition that the skin participates in immune surveillance and systemic homeostasis through its extensive vascular, lymphatic, and immunologic networks (Kabashima et al., 2019). The concept that psoriatic eruption represents the body's compensatory routing of inflammatory material through the skin—when the intestinal, pulmonary, and renal channels are inadequate—corresponds in principle to the modern understanding of psoriasis as a systemic inflammatory condition with cutaneous expression rather than a purely local skin disease (Griffiths et al., 2021).

The readings' consistent emphasis on diet as the primary therapeutic tool corresponds to modern evidence that dietary interventions — including gluten-free diet, Mediterranean diet, caloric restriction, and specific micronutrient correction — can significantly affect psoriasis severity in subsets of patients. The identification in reading 270-33 of acid-forming foods, excessive starches, and combination eating patterns as contributors to the condition anticipates modern research on dietary triggers of psoriatic flares, including high glycemic index foods, saturated fats, and alcohol. The emphasis on alkaline-reacting vegetables, fruit juices, and "right thinking" in

readings 270-33 and 2455-2 corresponds to the modern evidence base for plant-based dietary patterns in reducing systemic inflammatory markers and improving psoriasis outcomes (see the dietary section below).

The extraordinary passage in reading 943-17 — describing the systemic consequences if the psoriatic elimination were suppressed — represents one of the most conceptually advanced statements in the readings about the purpose of skin disease as a systemic protective mechanism. While modern dermatology does not endorse the specific organ-by-organ correspondence the readings describe (psoriasis suppressed → tuberculosis, cirrhosis, etc.), the underlying principle — that suppression of cutaneous elimination without addressing systemic inflammation redirects inflammatory processes to internal organs — is consistent with the modern understanding that systemic inflammation, if inadequately discharged, manifests across multiple organ systems. The well-documented association between psoriasis and psoriatic arthritis, cardiovascular disease, metabolic syndrome, inflammatory bowel disease, and depression in modern medicine illustrates the multisystem character of psoriatic disease, consistent with the readings' framing of psoriasis as a systemic rather than local condition. Following is a closer look at the medical literature on comorbidity of psoriasis with various diverse common ailments.

Comorbidities in Psoriasis

Bowel Disease

The comorbidity of skin and bowel disease is particularly noteworthy. Person and Bernhard (1986) observed that the link between pustular dermatitis associated with small bowel bypass surgery and the cutaneous manifestations of inflammatory bowel disease is well established. Such manifestations of skin disease

(including psoriasis) may be due to the absorption of microbial antigens from the bowel (Sikora et al., 2020). Interestingly, the case of Mr. [943] in the readings specifically noted that it was a "form of colitis" (943-1), raising the possibility of a comorbidity of inflammatory bowel disease and psoriasis.

Other clinicians have also described the association of digestive system surgery with skin disease. D'Amico et al. (1999) reported an association of primary biliary cirrhosis and psoriasis. Following implantation of a porto-caval anastomosis, the patient experienced remission of psoriasis and psoriatic arthritis. The physicians hypothesized that the blood flow redistribution reduced bowel congestion and decreased the involvement of pathological intestinal flora, particularly with regard to hepatic functioning. Porres (1977) noted that jejunio-ileo bypass surgery resulted in improvement of psoriasis symptoms in a 44-year-old woman, allowing her to discontinue her psoriasis medication.

Yates et al. (1982) also emphasized the comorbidity of bowel disease and psoriasis. To test the hypothesis that these disorders are related, they studied 204 patients with inflammatory bowel disease (116 with Crohn's disease and 88 with ulcerative colitis) and 204 age- and sex-matched controls. They concluded: "The prevalence of psoriasis in Crohn's disease (11.2%) and in ulcerative colitis (5.7%) was significantly greater than in the control group (1.5%). The prevalence of psoriasis in first-degree relatives of patients with inflammatory bowel disease was also increased. It is suggested that there is a relationship between psoriasis, ankylosing spondylitis, sacroiliitis, peripheral arthropathy and inflammatory bowel disease." (p. 323)

Menzel and Holzmann (1986) analyzed stool samples of patients suffering from seborrheic eczema of the scalp, psoriasis capitis, or seborrhiasis. The researchers measured pathological flora of the

bowel to a high degree in all patients. The flora were predominantly pathogenic yeasts. With regard to treatment, they observed that therapy for the intestine is helpful for the skin disease as well. Numerous studies have emphasized the significance of pathological intestinal microorganisms in the etiology of psoriasis (Yaffee, 1971; Buslau et al., 1990; Senff et al., 1990; Rosenberg et al., 1994; Myers et al., 2019; Sikora et al., 2021). The extensive current literature on gut microbiome involvement in psoriasis will be explored in greater depth in the section that focuses on autointoxication.

Fry (1970) theorized that the association of small intestine pathology and skin disease can be classified using the following subgroups:

1. A non-specific relationship in which a primary disease of the small intestine causes non-specific changes in the skin [e.g., acquired ichthyosis] or, a primary disease of the skin produces non-specific changes in the small intestine [e.g. dermatogenic enteropathy].
2. A specific relationship in which a particular disease-entity of the skin is associated with a particular disorder of the small intestine [e.g. dermatitis herpetiformis].
3. A generalized disease process which affects both the skin and the gut but which is not necessarily confined to these two organs [e.g. systemic sclerosis or polyarteritis nodosa].

Depending upon the orientation of the investigator, psoriasis has been placed within each of these subgroups. Pagano (1991) regards psoriasis as a nonspecific manifestation of bowel pathology (increased intestinal permeability) in which toxins leak out of the gut and are eventually relayed to the skin for elimination from the body. Marks and Shuster (1970) emphasized a nonspecific process in which psoriasis is the primary disease producing secondary pathology in the small bowel. De Vos et al. (1995) noted that

psoriasis may be associated with a particular disorder of the small intestine (coeliac disease). The growing literature on the spondyloarthropathies (Mielants et al., 1995) reflects an interest in the systemic manifestations of auto-immune diseases including psoriatic arthritis.

Over the past decade, substantial evidence has emerged demonstrating a bidirectional association between psoriasis and inflammatory bowel disease (IBD). Patients with psoriasis exhibit a higher risk of developing IBD, while individuals with IBD demonstrate an increased prevalence of psoriasis and related inflammatory disorders (Jauregui et al., 2024; Kang et al., 2025; Shani et al., 2024; Tabbarah et al., 2024; Yousaf et al., 2021).

Joint Disease

The comorbidity of joint disease and psoriasis is also well known (Gupta et al., 2021; Panagiotopoulos et al., 2023). Approximately 5 – 7% of psoriasis patients suffer from a specific form of arthritis associated with psoriasis (Espinoza, 1985). Although the relationship between these diverse manifestations is unknown, the bowel has been implicated as a possible link between joint disease and skin. Of note, inflammatory bowel disease has been shown to be comorbid with psoriatic arthritis and other illnesses classified as spondyloarthropathies. As a concept, spondyloarthropathy links diseases with common clinical, radiological, and genetic features. In addition to psoriatic arthritis, other conditions in this category include ankylosing spondylitis, reactive arthritis caused by urogenital or enterogenic infection, inflammatory bowel disease (ulcerative colitis and Crohn's disease), some forms of juvenile chronic arthritis, and acute anterior uveitis (Mielants et al., 1995). Furthermore, gut inflammation has been specifically cited as a likely causative factor in some forms of psoriatic arthritis based on

ileocolonoscopy studies of patients with psoriatic arthritis (Schattelman et al., 1995).

Cardiovascular Comorbidities

Patients with psoriasis have been shown to have an increased incidence of cardiovascular disease and metabolic syndrome compared with the general population (Gottlieb & Dann, 2009). Specifically, a higher prevalence of cardiovascular risk factors including hypertension, diabetes, dyslipidemia, obesity, metabolic syndrome and smoking have been noted, putting patients at increased risk of developing severe vascular events such as myocardial infarction and stroke. Various mechanisms linking these comorbidities have been proposed including shared genetic factors, common inflammatory pathways, secretion of adipokines, insulin resistance, lipoprotein composition and function, angiogenesis, oxidative stress, microparticles, and hypercoagulability (Hu & Lan, 2017). Considering the readings' model of intestinal (i.e., leaky gut) etiology for psoriasis, the possible linkage of lipoproteins, microparticles, and hypercoagulability to cardiovascular comorbidity is particularly interesting.

Leaky Gut

By far, the most common pathophysiological pattern for psoriasis in the readings is a thinning of intestinal walls (usually in the jejunum or duodenum), allowing toxins to be absorbed into the mucosal lymph and emunctory circulation, thus gaining access to the systemic circulation resulting in disease of the skin and other organs systems. Such increased intestinal permeability is sometimes called "leaky gut." (Lacy et al., 2024)

Pursuing the pathophysiology of bowel and skin disease comorbidity, researchers have investigated intestinal permeability

as a potential etiological factor. Hamilton et al. (1985) explored passive small intestinal permeability in 29 patients with psoriasis using the cellobiose/mannitol differential sugar absorption test that measures urinary recovery ratio of cellobiose and mannitol. The recovery ratio was found to be abnormal in seven patients. However the researchers concluded that these rates were similar to values in a control population, and were not related to the extent or activity of the skin disease.

Using a different assessment technique, Humbert, et al. (1991) studied the intestines of 15 psoriatic patients and 15 healthy subjects. Intestinal permeability was evaluated using the ⁵¹Cr-labeled EDTA absorption test. The psoriasis group exhibited significantly increased bowel permeability compared to controls. The researchers concluded: "The difference in intestinal permeability between psoriatic patients and controls could be due to alterations in the small intestinal epithelium of psoriatics" (p. 324).

In seeking to reconcile these inconsistent findings of intestinal permeability in psoriasis, a possible explanation is that absorption of antigens through the bowel wall is primarily through the lymphatic system (as noted in the readings). The ⁵¹Cr-labelled EDTA absorption test is sensitive to lymph movement (MacDonald, 1975; Freitas & de Sousa, 1976). Thus, the apparent contradiction may provide a valuable clue to the pathophysiology of psoriasis. Absorption of antigens via the intestinal lymphatics may be a significant source of systemic autointoxication. Because the intestinal lymphatic absorption vessels (lacteals) drain fats and proteins from the bowel, increased permeability through the lacteals should lead to increased serum levels for fats and proteins. Hyperlipoproteinaemia has been documented in psoriasis (Brustein et al., 1976; Ma et al., 2013) and is thought to be a primary factor in

the comorbidity of psoriasis and heart disease (Seishima et al., 1994). The role of the lymphatic immune system in psoriasis will be reviewed in a later section.

Methods for measuring bowel permeability and assessing damage to intestinal mucosa from leaky gut continue to evolve. Sikora et al. (2018) measured blood concentrations of claudin-3 (associated with epithelial tight junction structures of cells lining the small intestine villi) and intestinal fatty acid binding protein (I-FABP; a marker of enterocyte damage) in patients with moderate to severe chronic plaque psoriasis (n = 20) and healthy individuals (n = 20). Claudin-3 concentration was higher in patients with psoriasis compared with healthy control and patients with psoriasis also had elevated concentration of plasma I-FABP, supporting the hypothesis that dysfunction of the intestinal barrier in psoriasis disturbs the homeostatic equilibrium between the microbiota and immune system.

Following this line of inquiry Sikora et al. (2019) measured circulating claudin-3 in patients with psoriasis to evaluate clinical and metabolic factors that determine its concentration. The design utilized a cross-sectional study that included 60 patients with psoriasis and 30 healthy controls – age, sex and body mass index-matched. Plasma claudin-3 concentration was measured using an enzyme-linked immunosorbent assay. Plasma claudin-3 concentration was significantly higher in patients with psoriasis in comparison with healthy controls. Patients who improved after 16 weeks of treatment showed a tendency to decrease in circulating claudin-3 plasma concentration. Positive correlations between claudin-3 concentration and increased psoriasis symptoms were noted. Thus Claudin-3 is a useful biomarker for gut permeability, is increased in psoriasis, and correlates with disease severity.

Building on these studies, Sikora et al. (2021) measured claudin-3 and TMAO in 114 patients with psoriasis in which 68 had altered gut barrier and 46 with normal functioning intestinal barrier. Patients with an altered gut barrier showed a significantly higher score in a standard gastrointestinal symptom rating scale. Moreover, patients with psoriasis and a disrupted intestinal barrier demonstrated a higher disease activity and systemic inflammatory parameters. The marker of bacterial translocation was also significantly higher in psoriatic patients with damaged gut integrity leading to the conclusion that altered gut barrier in psoriasis is associated with gastrointestinal symptoms, systemic inflammatory profile and increased blood concentration of gut microbiota-derived metabolite – TMAO.

In addition to bowel permeability, the intestinal mucosal structure of psoriatic patients has also been investigated. Using microscopic analysis of the gut, Shuster and Marks (1965) initially reported structural abnormalities of the jejunal mucosa in psoriasis, but later withdrew the claim citing faulty analysis technique and small sample size (Marks & Shuster, 1970). Barry et al. (1971a, 1971b) created a more precise grading system for measuring bowel mucosal architecture pathology which demonstrated differences in jejunal mucosa in psoriatic patients as compared to normal controls. The researchers focused on severe psoriasis (greater than 50% surface area involved). "Both the structural and functional intestinal changes described suggest that there is a decrease in the small bowel surface area in patients with severe psoriasis" (Barry et al., 1971b, p. 877). Thus, smoothing of the intestinal wall in the jejunal area of the bowel is regarded as a feature of severe psoriasis. In addition to the normal controls, an additional comparison group included sick and wasting individuals. The results indicated that pathological changes in the small bowel mucosal architecture are not specific to psoriasis, but

may also be found in patients who are sick and losing weight from other causes. The nonspecific aspect of intestinal permeability is consistent with the readings' account of systemic effects of leaky gut. Furthermore, Hendel et al. (1982) reported that 6 of 15 psoriasis patients had abnormal jejunal histology, with short villi – another indication of what the readings call thinning and smoothing of the intestinal wall in such cases.

Michaelsson et al. (1997) found that 37 psoriasis patients had highly increased numbers of tryptase-positive mast cells in the duodenal stroma. The authors hypothesized "that there are at least two types of abnormalities in the duodenal mucosa in psoriasis, one type that is present in most psoriasis patients and characterized by an increase in mast cells and eosinophils, and another that is present in a subgroup of patients with antibodies to gliadin and an increased number of duodenal intraepithelial lymphocytes" (p. 866)]. Michaelsson et al. had previously noted physiological abnormalities in the duodenal mucosa of psoriasis patients involving increased lymphocyte infiltration and IgA antibodies to gliadin (1995), and elevated serum eosinophil cationic protein with increased numbers of EG2 positive eosinophils in the duodenal mucosa of psoriasis patients (1996).

Interestingly, consumption of food-derived products containing wheat, barley, and rye by individuals genetically susceptible to celiac disease leads to villous atrophy, atrophied enterocytes, intestinal inflammation, and disassembly of tight junctions associated with leaky gut (de Sousa Moraes et al., 2014) – another fascinating parallel to the smoothing and thinning of intestinal walls as described in the readings that discuss leaky gut in psoriasis. Gluten sensitivity is one of numerous possible candidates for toxic substances/pathogens that may be involved in increased bowel

permeability and subsequent systemic toxicity discussed in greater detail in the next section.

Autointoxication

As noted in the excerpt above, the body has *normal*, inherent channels for eliminating toxicity (such as metabolic waste, infectious agents, assimilated substances/pathogens that gain access to the systemic circulation via excessive bowel permeability, etc). The *normal* processes of elimination are defecation, urination, respiration, and perspiration. *Normally* these channels of elimination coordinate so that the body is cleansed internally naturally. When one or more of these channels become defective or incapable of normal eliminations, the other channels step in to pick up the load. With regard to dermatological conditions such as psoriasis, the skin is the channel of last resort for eliminating toxins that leak from the intestines (i.e., autointoxication).

Autointoxication is an ancient theory based on the belief that intestinal toxins can enter the systemic circulation and poison the body. The concept may have originated in Egypt or Greece where a broad range of pathological agents including residues of food, bile and phlegm (as portrayed in the humoral theory of disease) were cited as contributing to illness (Chen & Chen, 1989). Until the early 20th century, autointoxication was widely accepted and various therapies (including colonic irrigation) were commonly used for a variety of systemic disorders (Ernst, 1997). Lacking support from scientific evidence, the autointoxication concept fell out of favor several decades ago. However, the growing body of information linking intestinal disease, excessive intestinal permeability, and systemic illness has revived interest in the theory (Person & Bernhard, 1986; Swank & Deitch, 1996). Similar concepts such as

multiple chemical sensitivities (Gots, 1993) and endotoxins (Chen & Chen, 1989) have also gained in favor.

Autoantigens and Autoimmunity in Psoriasis

Dialysis for Psoriasis

The concept of autointoxication in psoriasis gained support from numerous case reports suggesting that dialysis can be effective in the treatment of psoriasis. As early as 1965, dialysis was used to treat psoriasis by Russian clinicians (Kramer et al., 1982). McEvoy and Kelly (1976) reported that a uremic patient with psoriasis experienced clearing of skin lesions while being treated with hemodialysis. Numerous subsequent case reports documented the efficacy of dialysis in decreasing psoriatic lesions (Twardowski, 1977; Twardowski et al., 1978; Buselmeier et al., 1978; Chen et al., 1978; Muston & Conceico, 1978; Gliński et al., 1979). However, a controlled trial with 7 patients by Nissenson et al. (1979) failed to confirm the efficacy of dialysis for psoriasis. Halevy et al. (1980) pointed out methodological flaws in the Nissenson et al. study, especially a predominance of patients with psoriatic erythroderma, a variation of the disease regarded as particularly unresponsive to dialysis. A notable double-blind crossover study of 5 patients (Whittier et al., 1983) resulted in two patients with complete clearing, two patients with greater than 75% clearing, and one patient with no substantial response. None of the patients responded to the sham dialysis procedure.

A study by Sobh et al. (1987) compared hemodialysis, peritoneal dialysis, and Goeckerman treatment (coal tar dressings and ultraviolet light). Forty patients with severe psoriasis (greater than 50% body surface area affected) were randomly assigned to treatment groups. Statistical analysis of the data obtained following ten dialysis sessions showed better response in peritoneal than

hemodialysis, and both were better than Goeckerman treatment. The researchers concluded that dialysis treatment is a useful therapeutic modality, especially for those with severe lesions in whom mortality and morbidity are high, especially if other potent therapeutic modalities are contraindicated.

In practice, dialysis has not assumed a prominent position among the various therapeutic options available to clinicians. In reviewing the literature, Halevy et al. (1980) concluded that "dialysis does have an effect on psoriasis and that this effect is more prominent after peritoneal dialysis than after hemodialysis. The clinical response is not always complete, however, and in most cases short lasting. For these reasons, and because such therapy is not a simple procedure, dialysis is not a practical mode of treatment for psoriasis" (p. 72).

Conceptually, the apparent therapeutic efficacy of dialysis is supportive of an autointoxication model of psoriasis. "The mechanism by which dialysis affects psoriasis is unknown. Removal of some substances from the bloodstream is the most likely explanation. These substances could be carried free in plasma or on white blood cells and removed in the peritoneal dialysate during treatment" (Twardowski et al., 1986, p. 1179). The reported increased efficacy of peritoneal dialysis over hemodialysis may be explained by the fact that peritoneal dialysis can remove solutes of higher molecular weight in larger quantities than hemodialysis (Steck et al., 1982). Although the psoriasis/dialysis literature is complex and at times conflicting, the overall thrust of this body of information supports the plausibility of an intestinal etiology in psoriasis which involves autointoxication via the absorption and circulation of toxins from the digestive tract. One possible explanation is that, for psoriasis patients whose kidneys are weak or overtaxed, the overload of toxins may enter the systemic circulation and eventually

provoke an immune response in the skin (and other organs resulting in comorbidities) as suggested by some of the dialysis studies cited above.

Gut Microbiome Involvement in Psoriasis

Historically the theory of autointoxication, which found its clearest articulation in the late nineteenth and early twentieth centuries among physicians and the general public, focused on bowel physiology (typically constipation) as a cause of widespread physical disease while advocating for the pursuit of healthy bowel habits (such as colonic irrigation). Recently, under the banner of the microbiome, interest in commensal bacteria makes a similar case for associations between the alimentary canal and manifestations of illness far outside the gastrointestinal tract (Ahuja & Ahuja, 2016; Bested et al., 2013; Mathias, 2018). This has led to increasing interest in the possibility of systemic microbial-centered autointoxication via leaky gut:

A perturbed gut integrity and permeability ("leaky gut") may lead to microbial (bacterial) translocation, and the eventual leakage of bacteria or their metabolites into the circulation can make the host susceptible to various types of diseases via inducing chronic or acute inflammatory response. (Nagpal & Yadav, 2017, p. 11)

The term "microbiome" is used to designate the genetic material of all microbes, currently a very exciting field of research. The human microbiome is composed of bacteria, archaea, viruses and eukaryotic microbes that reside in and on our bodies (Shreiner et al., 2015). The human gastrointestinal tract is known to host trillions of microbes belonging to 4000 strains that constitute the intestinal microbiota (Lin & Zhang, 2017).

Numerous studies have identified gut microbiota dysbiosis as possible triggers or causes for recurrent episodes of psoriasis. Intestinal permeability has been more frequently reported in plaque psoriasis patients and the bacterial DNA from the gut can be detected in patients' blood (Ramírez-Boscá et al., 2013). This finding provides a possible explanation for how microbiota is recognized as one of the pathogenic factors of psoriasis. Evidence from genome sequencing provides further links on how gut microbiota can play an important role in psoriasis pathophysiology. Gut microbes in healthy people are significantly different compared to psoriasis patients. Furthermore, gut microbiota dysbiosis in arthropathic psoriasis is similar to patients with inflammatory bowel disease (Zhang et al., 2021).

A comprehensive systematic review of studies investigating intestinal microbiome in psoriasis by Sikora et al. (2020, p. 464) concluded: "A growing body of evidence highlights that intestinal dysbiosis is associated with the development of psoriasis. The gut–skin axis is the novel concept of the interaction between skin diseases and microbiome through inflammatory mediators, metabolites and the intestinal barrier." Yet the authors noted the heterogeneity of the results in the studies which may reflect differences in study populations, design, methodology – and the inherent heterogeneous nature of psoriasis in its broad spectrum of clinical presentations.

Lymphatic And Immune System Involvement In Psoriasis

One of the key elements of pathophysiology of psoriasis portrayed in the reading is the involvement of the emunctory and lymph systems. Although the lymphatics are currently receiving considerable attention (primarily with regards to immune function), the emunctory system is relatively obscure.

The Emunctory System

Historically, the concept of *emunctory* relates to cleansing and excretion of waste as defined by Dorland:

emunctory [L. *emungere* to cleanse]. 1. Excretory or depurant. 2. Any excretory organ or duct. (Dorland, 1908, p. 253)

A more contemporary definition simply explains that an emunctory is "an organ (as a kidney) or part of the body (as the skin) that carries off body wastes" (Merriam-Webster, n.d.). Although the cleansing role of the skin (via sweat glands) seems to be minor compared to the excretory power of the kidneys, these diverse emunctory organs do share similar functions:

Another important function of the kidneys is excretion of metabolic and dietary waste products. Since some waste products appear in sweat the eccrine [sweat] glands are also thought of as an excretory organ. For example, sweat contains urea, the major nitrogen-containing metabolic product of protein catabolism. (Baker, 2019, p. 240)

These similarities are also particularly relevant considering that in the modern medical literature both of these organs (kidneys and skin) are associated with psoriasis, as will be discussed in the sections that follow. More broadly, the readings describe the emunctories in aggregate as the eliminating system of the body exemplified by the organs responsible for the four primary channels of elimination: defecation, urination, respiration, and perspiration. Modern discussion of the emunctories and their role in internal cleansing and detoxification has been enthusiastically embraced by the naturopathic profession which has coined the term "emunctorology" to encapsulate the eliminating system of the body (very much as described in the readings):

Traditionally, the emunctories were divided into primary and secondary roles. The primary emunctories, classically, the bowel, kidney, lungs and skin, are the most efficient routes of elimination. When these are not functioning optimally, the body will attempt to compensate and use the secondary emunctories, including the stomach, liver, pancreas, spleen, lymphatic system, prostate and mucosal surfaces. These secondary emunctories are not as efficient at elimination as this is not the primary function of these organs or tissues. Consequently, when the primary emunctories are not functioning optimally, the secondary emunctories may also become perturbed and respond with a generalized inflammation. (Myers et al., 2019, p. 41)

With regard to the typical location of psoriatic lesions on the body, the readings may provide an explanation based on the role of the superficial circulation of lymph and emunctory activity for eliminations coming closer to the surface in certain areas based on the proximity of increased presence of lymph nodes and sweat glands. This is the emunctory function as it pertains to the skin.

Thus sweat gland activity is emunctory. The superficial circulation to the sweat glands is emunctory – cleansing through the excreting of sweat. The areas of perspiration increase the likelihood of psoriatic plaques as the system seeks to eliminate toxins absorbed through the bowel.

The Lymphatic System

Compared to the emunctories, discussion of the *lymphatic system* is much more common in the medical literature. The lymphatic system is a network of lymphoid organs and lymphatic vessels that transports lymph fluid and helps to clear toxins and other waste from the body's tissues. In conjunction with the immune system,

lymphocytes use the lymphatic system to circulate throughout the body (Alberts et al., 2002).

The entire lymphatic system embodies three primary aspects:

1) *lipid absorption and transport* via the intestinal lacteals and collecting lymph vessels in the wall of the small intestine and mesentery emptying into the cisterna chyli and thoracic duct prior to entering the systemic circulation. Historically this facet of lymphatic function has been called the "lacteal system." (Trall, 1854, p. 140)

2) general purpose *cleansing* and maintenance of tissue fluid balance. This aspect of lymphatic function has been historically regarded as the "sewer of the vasculature, passively draining fluid and proteins from the interstitial spaces" (Dixon, 2010, p. 480). In this functional sense, the lymphatics are closely associated with (or even part of) the emunctory system discussed above.

3) *immune* function as part of the larger immune system. In the intestinal tract the Peyer's patches are most notable in this regard.

All three aspects of lymphatic function are prominent in the psoriasis literature.

1) The role of the lymphatics in *lipid pathology* in psoriasis is well established (Xiao et al., 2022).

2) Likewise, the role of the lymphatic system in the process of inflammation in psoriasis illustrates the *cleansing* aspect of lymphatic function seeking to remove waste and heal lesions.

3) Finally, and most demonstrably, the role of the lymphatic system with regard to *immune* activity in psoriasis is extensively documented in the literature. For many years psoriasis was regarded as a disease characterized by keratinocyte hyperproliferation and inflammation as key features.

In recent decades, psoriasis has been increasingly grouped with numerous other systemic disorders that are related to immune system dysfunction. One of the seminal events in drawing attention to the immune system involvement in psoriasis was the chance clinical observation that psoriasis improved in patients treated with cyclosporine, a drug used to prevent rejection of transplanted organs. Immunotherapeutic drugs are now used extensively to suppress immune reactions in psoriasis.

As the understanding of psoriasis has evolved from a hyperkeratotic disorder of keratinocytes to a dysregulation of the immune system mediated by cytokines, research breakthroughs led to a further shift in its classification from a 'skin disease' to a systemic 'T-cell mediated disease' (Reich, 2012).

All of this has framed psoriasis within the context of a systemic autoimmune disease with numerous co-morbidities. Autoimmune diseases are caused by over stimulation of the body's own immune defenses, in which the immune cells attack healthy cells. In psoriasis, immune system T cells become activated and stay turned on causing the skin to constantly regenerate itself. The specific trigger for T cell activation is unknown, but may be an antigen, a bacterial or viral infection, or an environmental factor. Even bacterial DNA, previously considered immunologically inert, has been recently shown to trigger immune responses (Pisetsky, 1997).

The human body is in continuous relationship with the outer environment. Various allergens are known to trigger autoimmune responses. Furthermore, autoimmune disorders have inner, self-perpetuating causes, such as medicines and food materials. It is important to keep in mind that food is a primary source of the external environment that interacts with the immune system within the body. In addition to inherently toxic substances that may be

ingested, intact peptides and proteins are absorbed into the circulation (Gardner, 1988). Thus, diet may play a significant role in autoimmune diseases.

The bowel has protection from harmful materials which are ingested. The process of absorption takes place via the villi of the intestinal walls. Normal bowel permeability permits assimilation of nutrients while providing protection against pathogens being absorbed into the systemic circulation.

Food-enriched blood from the bowel is processed in the liver where most immune-complexes are removed. The other pathway of intestinal absorption is through lymphatic circulation. The abdominal lymph vessels are channeled into the thoracic duct, which drains the lymph into the subclavian vein. In both circulatory patterns (blood and lymph), antigens are eventually directed to the liver where they may be removed from the circulation or made harmless to the body's tissues. If the antigens are passed beyond the liver, they will circulate through the lungs, heart, kidneys, and then to the rest of the body where they may disrupt the functioning of various systems. In a healthy body, appropriate bowel permeability and adequate liver and kidney functioning are able to maintain a level of minimal systemic toxicity which can be easily managed by the immune system.

Intestinal permeability can become excessive (so-called "leaky gut syndrome") due to a wide variety of factors including alcohol consumption, bacterial or viral infection, reduced blood flow (resulting from injury, surgery or atherosclerosis), certain drugs (NSAIDS). If the amount of circulating toxins becomes excessive, and if the liver and kidneys are unable to keep up, autointoxication can result. The immune system reacts to antigens producing the characteristic inflammation associated with autoimmune diseases.

Psoriatic skin lesions and arthritis are two possible outcomes from this process.

The immune and lymphatic systems are key factors in this process. In addition to the lymphatic vessels in the intestinal villi, the intestinal tract is a mucosal immune system lined with lymph nodes (Peyer's patches) and solitary lymphoid nodules (Bienenstock et al., 1987). Thus, the mucosal epithelial surfaces of the intestine are important mediators in the interaction between external and internal milieus.

Beyond the intestinal tract, lymphatic circulation has been implicated in the pathophysiology of skin disease with regard to lymphocyte migration into the skin. Jalkanen et al. (1990) studied lymphatic circulation patterns in celiac disease (CD) and dermatitis herpetiformis (DH). They observed that "the staining results of inflamed duodenum in DH and CD were identical with those obtained from inflamed skin. Because more specific markers are not presently available in the human system, we cannot exclude the possibility that there is a common lymphocyte-endothelial cell-interaction system for differing sites of inflammation" (p. 791). Lymphatic/immune system involvement in psoriasis is well established, although the precise homing mechanism by which lymphocytes migrate to the skin remains unknown (Chin et al., 1989; Bacon & Camp, 1990; Arvilommi et al., 1996).

The concept of autoimmune inflammatory response produced by leaky gut and the ensuing autointoxication is not limited to psoriasis and other inflammatory skin diseases, but may also apply to various systemic conditions. For example, Swank and Deitch (1996) described the relationship between intestinal permeability, autoimmune inflammatory reactions, systemic disease, and

comorbidity in multiple organ failure as a complex process of bacterial translocation.

It is clear that increased gut permeability and bacterial translocation play a role in multiple organ failure (MOF). Failure of the gut barrier remains central to the hypothesis that toxins escaping from the gut lumen contribute to activation of the host's immune inflammatory defense mechanisms, subsequently leading to the autointoxication and tissue destruction seen in the septic response characteristic of MOF. However, the role of the gut is more than that of a sieve, which simply allows passage of bacteria and endotoxin from the gut lumen to the portal or systemic circulation. It appears, in addition, that the translocation of bacteria and endotoxin may lead to local activation of the immune inflammatory system and the local production of cytokines and other immune inflammatory mediators." (Swank & Deitch, 1996, p. 411).

Thus, in viewing psoriasis as a systemic disorder involving increased autoimmune reactivity in the skin (and to the joints in psoriatic arthritis), the intestinal tract and lymphatic system take on important roles with regard to etiology and pathophysiology of the disorder. Naturally, diet and nutrition also become important in the cause and treatment of psoriasis.

Diet And Psoriasis

Based on the substantial literature linking bowel pathology to skin disease, it is not surprising that dietary factors are well represented in the psoriasis literature. There have been numerous dietary approaches for psoriasis dating back many years. Although the literature does support the idea that diet can have significant

positive effects on psoriatic symptoms, the evidence is complex and open to various interpretations.

For example, Schamberg (1932) reported remarkable treatment efficacy using a low-protein diet. The typical diet contained about 30 gm of protein. Typically, patients were hospitalized for three to four weeks. Lerner and Lerner (1964) reported a 69-year-old man whose psoriasis improved on a low-protein diet and exacerbated on a high-protein steak diet. Roe (1965, 1966) reported good results with a low-aurine diet in psoriasis. Because the principal source of aurine is animal protein, a low-aurine diet is necessarily a low-protein diet.

However, reports from some observers do not support the efficacy of a low-protein diet for psoriasis. Zackheim and Farber (1969) failed to see significant improvement in 13 psoriatic patients who were hospitalized for periods of 4 to 17 weeks. Kwitten and Kantor (1967) reported on a 37-year-old man whose psoriasis failed to improve on a starvation diet consisting of one head of lettuce, two medium-sized tomatoes, one cucumber, tea, and 12 ounces of soda daily for six days a week. The estimated protein consumption was 4.7 gm per day. Interestingly, Pagano (1991) asserts that certain foods (including carbonated beverages and tomatoes) contribute significantly to psoriasis.

Food deprivation has been associated with improvement in psoriatic symptoms. Simons (1949) reported that 8 of 13 Dutch prisoners with psoriasis improved in Japanese concentration camps in Java in World War II, while on a near starvation diet. Some observers feel that psoriasis is exacerbated with weight gain (Baden, 1963; Farber & Roth, 1964). Others have reported remissions with weight loss under conditions of prolonged food deprivation (Simons, 1949). Although some physicians feel that psoriasis diminishes during periods of

food deprivation or poor nutrition, there is no consensus on this point (Zackheim & Farber, 1969).

Spiera and Lefkovits (1967) reported dramatic improvement in four psoriatic patients who were placed on a diet believed to be low in tryptophan. The patients substituted turkey meat for regular sources of meat. Symptoms decreased while on the turkey diet and increased when the previous diet was resumed. Later measurements of the tryptophan levels of turkey meat indicated an error in the original calculations – turkey meat is not devoid of tryptophan. Although tryptophan level was probably not a factor in the clinical improvement, perhaps the change in protein sources was influential.

Dietary supplementation with fatty acids (fish oil) has been credited for the improvement of psoriatic patients. Kromann and Green (1980) observed a decreased incidence of psoriasis in fish-eating Greenland Eskimos. This finding, combined with evidence for epidermally derived eicosanoids in the pathogenesis of psoriasis (Voorhees, 1983), led Ziboh et al. (1986) to investigate the effect of fish oil dietary supplementation on psoriatic symptoms. Global evaluation showed that 8 of 13 patients demonstrated mild to moderate improvement of their psoriatic lesions. Further studies (Maurice et al., 1987; Bittiner et al., 1988; Kragballe & Fogh, 1989; Collier & Payne, 1996) supported the claim for modest improvement in psoriasis for patients consuming daily dosages of fish oil. As with much of the psoriasis literature, the effects of fish oil supplementation are variable. Fish oil has been found to be no better than corn oil (Søyland et al., 1994) or olive oil (Bjørneboe et al., 1988) in reducing psoriasis symptoms. Kettler et al. (1988) noted that although 25 patients with plaque-type psoriasis vulgaris showed no significant clinical improvement while taking fish oil supplement, one patient with generalized pustular psoriasis show marked

improvement. It may be that fish oil is most helpful for certain individuals or specific forms of psoriasis.

Using a treatment model based on the readings, Pagano (1991) reports significant improvement of psoriasis in patients using a restrictive diet (discussed below) and dietary supplementation with herbal teas (most often yellow saffron and slippery elm) and olive oil. Yellow saffron (*Carthamus tinctorius*) has been shown to possess anti-inflammatory (Xu, 1986; Akihisa et al., 1996) and immunosuppressive properties (Lu et al., 1991). Slippery elm (*Ulmus fulva*) is an herb used traditionally for digestive difficulties, stomach and intestinal ulcers, and colitis. Slippery elm is a demulcent, high in mucilage, noted for its ability to soothe or protect irritated mucous membranes (Duke, 1997; Golan, 1995; Tierra, 1992). Although herbal therapy has been used effectively for atopic dermatitis (Atherton et al., 1990; Sheehan & Atherton, 1992; Sheehan et al., 1992; Atherton et al., 1992), Pagano appears to be the primary advocate of herbal therapy for psoriasis.

In an epidemiological study of the association between diet and psoriasis, Naldi et al. (1996) noted that dietary factors may influence psoriasis and modulate its clinical expression in an Italian population. Notably, increased intake of fresh vegetables and fruit was linked to a decreased prevalence of psoriasis. This study is in agreement with a similar prevalence survey in a Norwegian population (Kavli et al., 1985).

In summary, diet does seem to play a role in the etiology and treatment of psoriasis. In general, a diet of fresh fruits and vegetables and low protein seems helpful. On the other hand, diet is a highly individual matter. Food allergies and sensitivities (e.g. coeliac disease) may play a role for certain individuals while others may be relatively unaffected by the same foods. The degree of gut

permeability and the system's ability to handle autointoxication are important factors in this regard. The use of dietary supplements (e.g., fish oil) may be helpful for specific individuals. Research has tended to look for "the" dietary factor (whether protein, taurine, fatty oils) which is problematic for psoriatics. A multifactorial model which recognizes human diversity and systemic interactions will probably be most useful in clinical practice. Assessment of individual dietary patterns and reactions could be of use in understanding the process, in both research and clinical settings.

Discussion

Psoriasis is a complex disorder involving a variety of factors. Therefore a multifactorial approach is needed to integrate the various aspects of psoriasis into a plausible model which addresses both the theoretical and clinical dimensions of the illness. The sources cited above point to the bowel as one possible integrative factor in the etiology, pathogenesis and treatment of psoriasis. This section focuses on the central themes of an intestinal model. These include:

Bowel Pathology: Due to injury, illness and/or poor dietary habits, a variety of abnormalities in the upper small bowel (duodenum and/or jejunum) compromise the integrity of the intestinal tract. Various microorganisms may be involved in bowel pathology in psoriasis. From a clinical standpoint, screening for microorganisms is an appropriate early step in the assessment process (Rosenberg et al., 1994; Skinner et al., 1995).

Intestinal permeability and autointoxication: Deterioration of the intestinal wall results in a smoothing effect to intestinal villi and a thinning of the intestinal wall, particularly in the upper portion of the small bowel. Microorganisms and/or other toxins that would normally be eliminated or restricted to the bowel are absorbed into

the circulation (autointoxication). Additional bowel permeability studies using the ^{51}Cr -labeled EDTA absorption test as per Humbert et al. (1991) are needed to determine the prevalence of intestinal permeability in psoriasis.

Lymphatic/Immune System Involvement: The lymphatic/immune system is a likely channel by which the pathogens enter the systemic circulation. An immune response to the misplaced pathogens produces the various forms of psoriatic lesion, depending upon the type of pathogen and the unique response of the individual system.

Comorbidity: Because the systemic toxicity associated with intestinal permeability provides access to various organs in the body, toxicity can manifest in a variety of conditions in addition to psoriasis, most notably joint disease. There is a need for further research to clarify the extent of comorbidity and the specific causal relationships between psoriasis and other systemic illnesses.

Natural Therapeutics: "Cure by removal of cause" via natural healing modalities such as diet and nutritional supplementation can assist with internal cleansing and healing the gut. The sources cited in the preceding section support the notion that a diet consisting primarily of fresh fruits and vegetables and low in protein can be helpful for some individuals suffering from psoriasis. In addition to a cleansing diet, the work of Pagano (1991) suggests that herbal teas may be helpful in healing the intestine. Specifically, yellow saffron tea and slippery elm are mainstays of Pagano's approach. Avoidance of foods which contribute to systemic toxicity may require careful monitoring of the effects of specific foods or food groups. For example, Pagano observed that the nightshade group (tomatoes, eggplant, peppers, etc.) tends to exacerbate psoriasis.

Psoriasis has a genetic aspect which can best be regarded as a predisposition or vulnerability. The diathesis/stress concept in which a genetic vulnerability is triggered into action via environmental or endogenous stressor is an excellent model of this view of hereditary factors in psoriasis. In addition to a predisposition for skin disease, an individual may also possess hereditary predispositions for other conditions which are known to be comorbid with psoriasis. In other words, the autointoxication manifests most obviously in weak systems of the body. The genetic diathesis may involve a predisposition for increased bowel permeability or a tendency for the immune system to react to certain toxins. Stressors may be physical, social or psychological.

Although not directly related to intestinal etiology in psoriasis, treatment compliance is a practical concern for anyone attempting significant lifestyle changes (such as diet). Psychosocial support should be considered as an adjunct to clinical interventions for any condition requiring substantial lifestyle changes. For example, Ornish et al. (1998) convincingly demonstrated the role of group support with regard to intensive lifestyle changes for reversing coronary heart disease. Abel et al. (1990) recognized the beneficial effects of psychosocial support for stress reduction, improvement of coping skills, and health education in psoriasis patients. Because stress has been linked to increased psoriatic symptoms (Winchell & Watts, 1988; Kantor, 1990; Zachariae et al., 1996), psychosocial support and stress reduction training are reasonable adjuncts to any psoriasis treatment program.

Thus, the therapeutic model described in this review is holistic and integrative. The diet is intended to avoid foods that irritate the gut or increase autointoxication. Although each individual is unique, in general the diet is intended to improve assimilation of nutrients and

elimination of toxins. Essentially, the diet consists mainly of fruits and vegetables while avoiding fried foods and refined carbohydrates ("junk food"). The nightshade vegetables (such as tomatoes and peppers) are avoided (Pagano, 1991). For some individuals, colonic irrigation may be helpful for cleansing the lower bowel and decreasing autointoxication (Lansford, 1983; Mein, 1989).

Evidence of the efficacy of this intestinal model based on the readings rests largely on the numerous case reports documented by Pagano (1991). Pagano has conducted over 15 years of clinical studies resulting in impressive before-and-after photography of the total clearing of severe psoriatic lesions in numerous individuals. Longitudinal case reports of these patients strongly support the contention that the model is effective in healing psoriasis.

Research by Meridian Institute (2000) in cases of psoriasis treated according to Pagano's protocol lend some support to his approach. Seven of the nine patients in one group exhibited decreased psoriasis symptoms; three had essentially complete clearing of skin lesions. In a later group of five patients, all five showed improvement when treated according to the Pagano protocol. More case studies from other investigators and controlled clinical studies will be necessary to confirm these observations.

Conclusion

The etiology of psoriasis involves varied factors, both specific and nonspecific. Based on the literature, the bowel pathology model described in this review provides a conceptual framework for understanding certain systemic features of psoriasis. Although intestinal etiology in psoriasis may not account for all the varied manifestations of the illness, it does provide a plausible approach for integration of some of the diverse research and clinical information in the literature. Additional research is needed to further document

the clinical effectiveness of this model, to evaluate the role of bowel permeability in psoriasis, and to determine which elements of the treatment protocol contribute to the improvement in symptoms.

Appendix A: The Pineal Gland and System

[Note: The content of this appendix is adapted from previous works. Part 1 was originally included in *The Treatment of Schizophrenia* (1991) as a literature review on the pineal gland with just a bare mention of the "pineal system." Thirty-one years later *The Treatment of Epilepsy* (2022) repeated that appendix and added Part 2 — a highly developed elaboration of the "pineal system" concept. Both parts are included here, updated and adapted to the pedagogical nature of this text. To date, the pineal project has been a thirty-five year quest, and counting.]

Part 1 – The Pineal Gland: A Literature Review

Introduction

For centuries the pineal gland occupied a curious position in Western thought — simultaneously dismissed as a cerebral vestige and elevated as the very seat of the soul. The ancient Greeks associated it with the regulation of thought; Descartes, in the seventeenth century, identified it as the organ through which the soul exercised its most direct influence on the body (Wheelwright, 1954). Contemporaneous physicians, influenced by that thesis, linked the pineal causally to madness — an association that, as Miles and Philbrick (1988) observed, proved "uncannily prophetic for the present day" (p. 409). Throughout the nineteenth century and well into the twentieth, however, this philosophical legacy could not be sustained by available biochemistry, and the gland was widely dismissed as vestigial.

The rehabilitation of the pineal gland as an active endocrine organ is a story of the latter half of the twentieth century, driven largely by the isolation of melatonin in 1958 and the subsequent development of sensitive bioassays capable of detecting pineal secretions in the bloodstream (Lerner et al., 1958). From that point forward the literature has expanded dramatically. The pineal is now recognized as a photoneuroendocrine transducer of considerable complexity, playing documented roles in the regulation of circadian rhythms, seasonal physiological adaptation, reproductive cycles, immune function, and the modulation of neural excitability. Pineal involvement in major psychiatric and neurological conditions — including depression, bipolar disorder, schizophrenia, and epilepsy — is an active area of investigation.

The Edgar Cayce readings were ahead of medical consensus on this subject. During the early decades of that period, the prevailing view held the pineal to be "a mass without apparent functioning" — language that appears in reading 294-141 as the readings' own characterization of how medical science then regarded the gland. Yet the readings consistently insisted on the pineal's preeminent role as a major mediator of physiological and psychospiritual processes. As the research literature reviewed in this appendix demonstrates, contemporary views of the pineal gland have moved substantially in the direction the readings indicated.

This section focuses on the pineal gland as it is understood in mainstream neuroendocrinology — a discrete glandular entity located in the center of the brain, primarily defined by its melatonin-producing function and its role as the body's photoneuroendocrine interface. Aspects of the readings that engage directly with this mainstream picture are discussed throughout. The more extensive and unusual aspects of the readings'

perspective — the pineal as a system extending throughout the body, the pineal cord, the pineal nerve, and the spinal centers — are reserved for Part 2 of this appendix, which addresses the pineal system as a conceptual framework.

Anatomy and Anatomical Peculiarities

The pineal gland is a small, cone-shaped structure attached to the posterior roof of the third ventricle of the brain, sitting in the quadrigeminal cistern between the two superior colliculi. In adults it weighs approximately 50 to 150 mg and has a blood flow second only to the kidney (Arendt, 1988), reflecting its high secretory activity relative to its modest size. Unlike most of the mammalian brain, the pineal gland sits outside the blood-brain barrier, its capillaries being fenestrated rather than tight-junctioned, allowing direct access between the bloodstream and pinealocytes (Miyata, 2015). This places it among the circumventricular organs — a group of midline brain structures in direct contact with both the blood and the cerebrospinal fluid, positioned to monitor and influence the systemic environment (Miyata, 2015).

The brain exhibits a high degree of bilateral symmetry, a characteristic not shared by the pineal, which is not generally regarded as having left and right divisions. Its central, unpaired position was one reason Descartes identified it as a candidate for the seat of the soul — "the only solid part in the whole brain which is not duplicated" (Wheelwright, 1954, p. 357). Its location in the geometrical center of the brain and its unique proclivity to calcify with age make it a valuable and commonly used landmark in neuroradiology.

Morphologically, the pineal has been considered a homologue of the "third eye" in certain lizard species (Gray, 1901, p. 673). In

lampreys and frogs the pineal complex retains photosensory cells capable of directly transducing light. In mammals the direct photosensitivity has been replaced by an indirect pathway from the retina through the suprachiasmatic nucleus of the hypothalamus and the sympathetic nervous system, yet the photoreceptor-like structure of some pineal cells is preserved. The pineal stalk, connecting the gland to the posterior commissure and habenular commissure, provides a fixed anatomical anchor. The posterior commissure, situated immediately below the subcommissural organ — itself the source of the cerebrospinal-fluid glycoprotein thread discussed in Part 2 of this appendix — places the pineal in close anatomical relationship with structures that appear repeatedly in the readings' descriptions of the pineal system.

The readings acknowledge these anatomical peculiarities in scattered passages. The description of the pineal as the "Builder" during fetal development (294-141) — "the location of same is in the beginning in that of the center or the nucleus about which all of the matter takes its first form" — resonates with the developmental primacy of the pineal as a circumventricular organ formed very early in embryogenesis. The readings' repeated emphasis on the pineal's central position — "in the center of the brain system" — corresponds to its anatomical reality as a midline, unpaired structure in the geometric center of the brain.

Circadian Rhythms and the Molecular Clock

The pineal gland's role in the regulation of circadian rhythms is now among the most thoroughly documented functions in all of neuroendocrinology. The 2017 Nobel Prize in Physiology or Medicine was awarded to Jeffrey C. Hall, Michael Rosbash, and Michael W. Young for their discoveries of the molecular mechanisms controlling the circadian clock (Nobel Assembly,

2017). Their work revealed that circadian timing is governed by a transcription-translation feedback loop: the positive transcription factors CLOCK and BMAL1 drive expression of the Period (PER1-3) and Cryptochrome (CRY1-2) genes; the resulting PER and CRY proteins translocate back into the nucleus and inhibit their own transcription, completing approximately one cycle every twenty-four hours.

The suprachiasmatic nucleus (SCN) of the hypothalamus serves as the master pacemaker, receiving direct photic input via the retinohypothalamic tract and coordinating peripheral oscillators throughout the body (Moore, 1996). The pineal gland is the primary hormonal output of this system. Light information received at the retina is relayed through the SCN to the paraventricular nucleus of the hypothalamus, descends to the intermediolateral cell column of the upper thoracic spinal cord, passes through the superior cervical ganglion via preganglionic sympathetic fibers, and arrives at the pineal via postganglionic sympathetic fibers. There, noradrenaline stimulates pinealocytes to produce melatonin, primarily during darkness. Melatonin is thus aptly termed a "darkness hormone" — its nocturnal secretion encoding the length of the night and signaling that information to the body as a whole (Arendt, 1988).

Melatonin secretion increases during sleep and decreases during waking hours (Axelrod, 1974; Arato et al., 1985). Because light both entrains and suppresses melatonin secretion, the pineal serves as the body's biological clock-setter, translating the photoperiod into a hormonal signal that coordinates physiological processes with the external environment. This function is analogous, in modern language, to the readings' description of the pineal as the "governing body to the coordinating of the mental and physical" (567-1) — an aerial-like activity through which the body remains

attuned to its environment. Reading 281-53 describes the pineal's coordinating function specifically in terms of an aerial receiving and transmitting vibration — a metaphor that proves remarkably apt for a neuroendocrine transducer that converts electromagnetic environmental signals (light) into hormonal outputs (melatonin) that synchronize every cell in the body.

Melatonin acts on two primary G-protein-coupled receptors, MT1 and MT2, which are distributed throughout the body but concentrated in the SCN and pituitary (Liu et al., 2016). Through these receptors melatonin modulates clock gene expression, providing a feedback loop between the pineal output and the master circadian pacemaker. Research published between 2020 and 2025 has further established that melatonin modulates mitochondrial function, inflammatory responses, and synaptic plasticity through its interaction with clock genes — extending its influence well beyond simple rhythm-setting into metabolic and neuroprotective domains (Wiciński et al., 2025).

Photoperiodicity, Seasonal Adaptation, and the Life Span

The melatonin signal encodes not only the time of day but the time of year. Because the nocturnal duration of melatonin secretion tracks the length of the night, the pineal provides a continuous hormonal record of the photoperiod that governs seasonal physiological adaptations in many mammals — including coat color, coat growth, patterns of reproduction, thermoregulation, and behavior (Arendt, 1988). Ralph (1984) emphasized the "adaptive" nature of the pineal, arguing that "the pineal organ participates in preparation for future conditions" (p. 193). This anticipatory, forward-oriented quality of pineal function — preparing the organism for conditions not yet arrived — is one of the more philosophically striking aspects of its physiology.

Pineal involvement in cycles of growth and development across the life span has been documented since the nineteenth century. Pineal tumors have long been associated with precocious puberty in children (Kitay & Altschule, 1954; Turner & Bagnara, 1971), and the role of melatonin in suppressing gonadotropin-releasing hormone prior to puberty is well established. As melatonin levels decline at puberty — part of a developmental reduction in amplitude that continues across the adult life span (Young et al., 1986; Iguchi et al., 1982) — the hypothalamic-pituitary-gonadal axis is released from inhibition and sexual maturation proceeds. Blind adults exhibit various circadian dysynchronicities related to the loss of photic input (Lewy & Newsome, 1983).

The readings acknowledge this developmental role explicitly. Reading 294-141 describes the pineal's activity during fetal development: it begins activity within the third week after conception as "the Builder," organizing the body's formation from the umbilical center outward. Across the life span, the readings treat the pineal as a regulator of vitality and youth. The statement in reading 294-141 — "Keep the pineal gland operating and you won't grow old — you will always be young" — finds its mainstream correlate in the extensive literature on melatonin as an antioxidant and neuroprotective agent, as well as in the documented association between progressive pineal calcification and declining melatonin production across adulthood.

Pineal calcification is now recognized as the highest of any organ or tissue in the human body and is understood as an active process with consequences for health (Tan et al., 2018). A 2018 review in *Molecules* by Tan et al. concluded that "an intact and functional pineal gland is necessary for preserving optimal human health" (p. 301) — a formulation that closely echoes the readings' insistence on

maintaining pineal activity as a condition of sustained vitality. The same review proposed that pineal health can be preserved by retarding premature calcification, and that the calcified gland may even be amenable to functional rejuvenation (Tan et al., 2018). A 2020 review in *International Journal of Neuroscience* provided an updated clinical picture of pineal calcification, masses, precocious puberty, and melatonin functions (Chhabria et al., 2020).

Sensitivity to Environmental Energies

The pineal's sensitivity to environmental light, mediated by the retinohypothalamic tract, is now a textbook fact. Less settled, but still of interest, is evidence that the pineal may respond to other forms of environmental energy. Early work by Milin et al. (1988) investigated the pineal as a potential mediator of geomagnetic influences on the organism, suggesting that the gland "plays its physiological role through the modulation of the homeostatic and behavioral responses upon the changes in the living microambient" (p. 1083). Research by Wilson, Stevens, and Anderson (1989) reviewed evidence that extremely low frequency (ELF) electromagnetic field exposure alters the normal circadian rhythm of melatonin synthesis and release, raising the possibility of pineal susceptibility to anthropogenic electromagnetic fields.

The evidence base for geomagnetic and ELF effects on the pineal has not expanded as robustly as other areas of pineal research over the intervening decades, and the health risk implications of ELF exposure remain contested. Nevertheless, the possibility of electromagnetic sensitivity — beyond the well-established photic pathway — remains an open line of investigation that resonates with the readings' description of the pineal's aerial-like activity as an interface between the body and its environment (281-53). The readings are particularly explicit that this interface operates

through vibration, not only through conventional neural pathways: "it is a matter of vibration in the body" (281-53). Whether future research will establish additional modalities of environmental sensitivity for the pineal beyond light remains to be seen.

Immune Function and Oncostatic Activity

The link between pineal function and immune response has grown substantially since early work by Blask (1984) identified the pineal as an "oncostatic gland." Melatonin is now understood to exert direct and indirect immunomodulatory effects, acting as both a pro- and anti-inflammatory agent depending on context, stimulating T-helper immune responses, and decreasing nitric oxide formation to ease inflammatory responses (Mafi et al., 2023). Its oncostatic properties — the suppression of tumor growth and proliferation — have been demonstrated across a wide range of cancer types including colon, prostate, ovarian, oral, gastric, breast, hepatocellular, and cervical cancers (Targhazeh et al., 2022; Cao et al., 2025).

The mechanisms underlying melatonin's oncostatic activity include the modulation of the tumor microenvironment, suppression of angiogenesis, induction of apoptosis, regulation of cell cycle proteins, and the inhibition of inflammatory signaling pathways including NF- κ B (Targhazeh et al., 2022). Additionally, melatonin has been shown to modulate drug resistance in cancer, potentially enhancing the sensitivity of tumor cells to chemotherapy. These developments considerably extend the earlier observation by Rodin (1963) that pinealectomy is associated with proliferation of cancer cells. The readings do not discuss cancer in direct parallel to these mechanisms, but they do emphasize throughout that the pineal's functioning is foundational to the maintenance of health.

The Pineal Gland and Psychiatric Conditions

Depression and Bipolar Disorder

The relationship between the pineal gland and affective disorders was an active area of investigation in the 1980s and has continued to develop. Reduced nocturnal melatonin secretion has been documented in depression (Wetterberg et al., 1979, 1981, 1984), and Brown et al. (1985) found that lowered nocturnal melatonin concentrations differentiated between melancholic patients and patients suffering from major depression without melancholia. The connection between melatonin and depression may involve serotonergic and noradrenergic neurotransmitters — both precursors in the melatonin synthesis pathway — such that disruptions in these systems might predictably affect melatonin production (Arendt, 1988).

Seasonal affective disorder (SAD), a recurring winter depression linked to reduced light exposure, is the clinical condition most directly associated with pineal photoperiodic function.

Phototherapy has been used therapeutically to suppress the elevated or mistimed melatonin secretion hypothesized to underlie the winter depressive phase, with documented clinical benefit (Kripke & Risch, 1986). The circadian disruption hypothesis of bipolar disorder has continued to develop: persons with bipolar disorder exhibit supersensitivity to the inhibiting effect of bright light on nocturnal melatonin secretion (Lewy et al., 1981), and during mania show elevated melatonin levels throughout the day and night (Lewy et al., 1979). Lithium has been shown to affect pineal functioning and may modulate photosensitivity as part of its therapeutic mechanism (Miles & Philbrick, 1988).

A 2023 systematic review in *Brain Sciences* by Chauhan et al. examined neuroimaging and melatonin studies across 36

publications and found smaller-than-normal pineal gland volume in people with major depression, with particular association in subgroups showing high scores on loss-of-interest symptoms (Chauhan et al., 2023). The same review documented evidence of lower-than-normal melatonin and aberrant melatonin secretion patterns in schizophrenia and, less consistently, in bipolar disorder and major depression. A 2025 systematic review in *Brain and Behavior* found that melatonin improves sleep quality, restores circadian balance, and modulates stress-related neuroimmune pathways in psychiatric populations, with emerging evidence of support for neuroplasticity and resilience against psychosocial stressors (Baig et al., 2025).

Schizophrenia

The structural similarity between melatonin and known hallucinogenic agents — harmine, bufotenine, and psilocybin — had earlier led to speculation about melatonin involvement in schizophrenic psychosis (Arendt, 1988). Psychotomimetic agents including cocaine, L-dopa, and amphetamine increase melatonin production, and research into LSD distribution in primate brains showed concentrations in the pineal and pituitary 7–8 times those found in the cerebral cortex (Snyder & Reivich, 1966). The prevalence of sigma receptors in the pineal, noted by Jansen et al. (1990), represents another potential interface with psychotic conditions, as haloperidol and other antipsychotics bind sigma receptors.

More recent evidence has moved from pharmacological hypothesis to structural measurement. The systematic review by Chauhan et al. (2023) found smaller-than-normal pineal gland volume in people with schizophrenia regardless of symptom severity and illness stage, representing a more robust structural finding than

was available in earlier reviews. Aberrant melatonin secretion patterns in schizophrenia were found across multiple studies, consistent with earlier reports of reduced nocturnal melatonin in this population (Ferrier et al., 1982).

The readings consistently associate the pineal with the full range of psychiatric conditions discussed above. The statement in reading 281-24 that the disintegration of brain structure — "by the very smoothing of the indentations necessary for the rotary influence or vital force of the spirit within same to find expression" — produces what the readings call dementia praecox (schizophrenia) suggests a physical, glandular basis for psychosis. The readings' frequently expressed distinction between those who are "close to the borderland" and those who are simply mentally ill resonates with contemporary discussions of a spectrum from mystical experience to psychosis — a continuum in which the pineal, through its role in consciousness, plays a central part. Those aspects of the readings that emphasize the pineal's role in altered states of consciousness are developed more fully in Part 2.

The Pineal Gland and Epilepsy

The connection between the pineal gland and epileptic seizures has been established in both experimental and clinical contexts.

Pinelectomy has been shown to produce convulsive states in experimental animals (Philo & Reiter, 1978), and melatonin has demonstrated seizure-suppressing effects in humans and other mammals (Fariello et al., 1977). The mechanism of action of melatonin's anticonvulsant activity has been linked to GABAergic pathways, antioxidant effects, anti-inflammatory properties, and antiexcitotoxic mechanisms (Akyuz et al., 2021).

A 2024 meta-analysis published in *Seizure: European Journal of Epilepsy* evaluated melatonin's clinical efficacy in epilepsy patients across multiple randomized trials and concluded that melatonin effectively reduces seizure severity and sleep latency, with a reasonable safety profile (Zhang et al., 2024). A 2023 randomized, double-blind, placebo-controlled clinical trial in *Brain and Behavior* found that add-on melatonin was effective in reducing seizure frequency in adults with idiopathic generalized tonic-clonic seizures, also improving sleep quality (Maghbooli et al., 2023). The interplay between sleep disruption, circadian dysregulation, and seizure susceptibility — all of which involve melatonin and the pineal — represents a clinically significant convergence.

An important caveat in this literature is that melatonin's relationship to epilepsy is not straightforwardly anticonvulsant in all contexts. Some research has suggested proconvulsive effects under specific conditions (Fariello et al., 1977; Paprocka et al., 2016), and the overall picture is dose- and context-dependent. A 2021 review in *ACS Chemical Neuroscience* summarized the current understanding of melatonin as an antiepileptic molecule, noting its neuroprotective and anti-inflammatory properties while cautioning that further randomized controlled trials are needed (Akyuz et al., 2021).

The readings address the pineal-epilepsy relationship extensively, associating pineal dysfunction with epileptic seizures across multiple case readings (see Part 2 for pathophysiological details). The readings describe the pineal as "the governing point of the brain impulses" (5498-1) and associate its dysfunction with loss of consciousness, incoordination between the sympathetic and cerebrospinal systems, and abnormal electrical activity — all features consistent with what modern epileptology recognizes as

the electroclinical manifestations of seizures. The statement in reading 2153-4 that abdominal pathology causes "a spasmodic reaction in the medulla oblongata, or that balance at the base of the brain" through the pineal provides a systems-level description that anticipates modern research into autonomic nervous system dysregulation in epilepsy.

The Pineal as Regulator of Regulators

A consistent theme across the diverse areas of pineal research reviewed above is the pineal's role as a higher-order regulator — not simply secreting a hormone but orchestrating the timing and coordination of multiple endocrine, immune, neural, and metabolic systems. Reiter (1984) described the pineal as a "regulator of regulators" (p. v), a characterization that has been borne out by subsequent research and that corresponds closely to the readings' portrait of the pineal as "the governing body to the coordinating of the mental and physical" (567-1).

The neural control of the pineal involves multiple hierarchically organized components: the retinohypothalamic tract from the retina to the SCN; the SCN-to-PVN projection; the PVN-to-IML descent through the thoracic spinal cord; the preganglionic-to-superior-cervical ganglion relay; and the final postganglionic sympathetic innervation of the pineal via the nervus conarii (Moore, 1996; Gregory et al., 2023). This multi-stage pathway, descending the length of the thoracic spinal cord before ascending back to the brain, is a remarkable anatomical substrate for a gland that occupies a few cubic centimeters in the middle of the head. It reflects the systemic reach of pineal influence, which the readings describe in terms of a governing system that "runs all the way through the system" (567-1).

The pineal's position as a circumventricular organ — outside the blood-brain barrier, in contact with both blood and cerebrospinal fluid — gives it a unique capacity to monitor the systemic environment and translate that information into endocrine signals that reach every cell. As Arendt (1988) summarized: "After years of disregard the pineal has taken its place in mainstream biology and medicine. It is an organ of particular fascination in that it serves as an interface between the environment and the body" (p. 205). The readings anticipated this conclusion in their insistence on the pineal's role as the primary mediator between the organism and the forces — physical, mental, and spiritual — that constitute its larger environment.

The Readings' Perspective on the Pineal Gland

Having surveyed the mainstream literature, it is useful to draw together the aspects of the readings that correspond most directly to the picture of the pineal as a discrete endocrine gland. The readings describe the pineal in terms that are largely consistent with modern endocrinology when the focus is confined to the gland itself — its location, its governing role, its connection to the pituitary, its involvement in development across the life span, and its association with both mental health and neurological conditions.

The readings acknowledge the pineal's central position in the brain repeatedly — "the pineal gland in the base of brain" (4862-1), "as is at the base of the brain itself" (294-141) — and describe its function in developmental terms that resonate with modern neuroendocrinology: "the Builder" (294-141) during gestation, the regulator of cycles of growth and development across the life span, and the governor of brain impulses in the mature human body.

The pineal-pituitary relationship is frequently cited in the readings as particularly important — the two glands are paired repeatedly as the primary neuroendocrine interface (262-20, 281-49, 1001-9, 1593-1). Modern endocrinology confirms this pairing: the pituitary is the primary target of melatonin's reproductive and circadian effects, and the hypothalamic-pituitary-pineal axis is a recognized functional unit. The readings' description of the endocrine system as "not glands but system" (281-38) anticipates the modern systems-biology perspective on neuroendocrine regulation.

The readings also give the pineal a specific role in the secretion of impulses that govern the sympathetic nervous system: "the pineal gland and nerve being the seat of the forces as exercised in the sympathetic nerve system" (4581-1). The modern research on the retinohypothalamic-pineal pathway, which routes through the thoracic intermediolateral cell column of the sympathetic system, provides an anatomical substrate for exactly this description. The pineal is governed by the sympathetic system (via the superior cervical ganglion and nervus conarii) and in turn governs sympathetic tone through its melatonin output, which modulates autonomic function throughout the body.

Where the readings depart most conspicuously from the mainstream picture of the pineal as a discrete endocrine gland is in their insistence that the pineal is much more than a gland in the conventional sense — that it extends throughout the body as a governing system. That extension is the subject of Part 2.

Summary

The pineal gland, long dismissed as a vestigial relic and philosophically caricatured as the seat of the soul, has emerged in the past half century as a neuroendocrine transducer of remarkable

complexity. Its primary secretion, melatonin, serves as the hormonal signal of the photoperiod, synchronizing physiological processes throughout the body with the light-dark cycle. Melatonin is implicated in the regulation of circadian rhythms, seasonal adaptation, reproductive cycles, immune function, cancer suppression, sleep, and the modulation of brain excitability in neurological conditions including epilepsy. Structural and secretory abnormalities of the pineal have been documented in schizophrenia, depression, and bipolar disorder. Progressive pineal calcification across the adult life span is associated with declining melatonin output and with neurological vulnerability.

The Edgar Cayce health readings anticipated many of these conclusions during an era when the prevailing medical view held the pineal to be inactive and insignificant. At the level of the gland as a discrete endocrine entity, the readings are largely consistent with what modern research has established: the readings describe the pineal as governing biological rhythms and development across the life span, coordinating with the pituitary and the sympathetic system, and playing a foundational role in the maintenance of health. The readings go considerably beyond this picture, however, describing pineal activity that extends throughout the entire body via a cord, nerve, and series of centers. That broader framework is addressed in Part 2.

Part 2 – The Pineal System

Introduction

Part 1 of this appendix surveyed the pineal gland as mainstream neuroendocrinology understands it — a discrete circumventricular organ in the center of the brain, the primary source of melatonin, and a regulator of circadian rhythms, seasonal adaptation, immune

function, and neural excitability. The Edgar Cayce health readings engage with that portrait at many points. But they go considerably further, describing a body-wide network in which the pineal gland is the namesake and anchor of a much larger coordinating and integrating system.

The term "pineal system" does not appear in the readings. It is an organizing concept introduced by McMillin (1991a) to accommodate the diverse and sometimes perplexing range of anatomical and physiological references to the pineal. The readings use the word "pineal" to designate: a discrete gland in the center of the brain; a cord or thread extending from the brain through the length of the spinal cord; a nerve traversing the spine with connections to both the sympathetic and cerebrospinal systems; a series of ganglionic centers at specific vertebral levels; a major branch in the lower cerebellum; and a governing influence that, in the words of reading 567-1, "runs all the way through the system and is the GOVERNING body to the coordinating of the mental and physical." No single anatomical referent recognized in modern medicine can accommodate all of these usages, and the confusion among Cayce scholars that resulted from attempts to reduce them to one was the practical motivation for the systems framework adopted in this text.

The term "pineal system" is justified by the readings themselves in a conceptual sense, however. The readings treat the endocrine system as "not glands but system" (281-38), and they describe "the endocrine system of the pineal" (281-49) in terms that imply a distributed functional network rather than a single organ. Reading 311-4 instructs: "Don't forget that this runs from the toes to the crown of the head!" Such language calls for a systems framework, not a single anatomical designation. The application of systems

theory to the readings' pineal-related material was not an imposition of an external framework but a recognition of the implicit logic of the readings themselves. Alternatively, one could describe such extensive pineal activity as a psychoneuroendocrine network — entirely accurate but considerably less economical as a working designation.

A note on scope and terminology: The term "pineal system" encompasses structures and functions that are partly physical and partly non-physical in the readings' own framework. The physical dimension — nerves, glands, a cord or thread, spinal centers — is the primary focus of this appendix because it is amenable to comparison with the scientific literature. The non-physical dimensions — the soul's connection to the body, kundalini energy, psychic activity, and altered states of consciousness — are acknowledged where they arise naturally in the readings but are not the central focus here.

The Nature of Glandular Activity in the Readings

Before examining the components of the pineal system individually, it is essential to understand how the readings define glandular activity, because this definition shapes how all pineal system components — including the lyden/Leydig gland — should be understood. Edgar Cayce was asked to provide a discourse on the endocrine glands, which resulted in an extended series of readings (the 281 series). The first reading in that series established a foundational principle:

... they are not present in a dead body ... [only through] active forces of a physical body ... ever the whole activity; not as separating them one from another but the whole anatomical structure must be considered EVER as a whole. ... What are the activities of the

glands? Most every organ of the body may be considered a gland . . . that which enables it to perform its duty in taking FROM the system that which enables it to REPRODUCE itself! That is the functioning of the glands! . . . Hence there is then in the system that activity of the soul, that is the gift of the Creator to man. . . . Thus the glandular forces then are ever akin to the sources from which, through which, the soul dwells within the body. Then we find the endocrine system – not glands but system . . . (281-38)

In summary: glands are defined by their activity (physiology) rather than by their anatomical structure. A gland is what it does. This principle has direct consequences for interpreting all components of the pineal system. When the readings describe the lyden/Leydig gland as present at multiple locations in the body, or when they say that the Leydig is "IN the pineal" (1001-9), these statements are not anatomical contradictions — they reflect the readings' consistent position that glandular identity is functional rather than structural. The life force that defines glandular activity is described elsewhere as "a low form of electrical energy" that is the basis of all physiological functioning (412-9, 1299-1).

Components of the Pineal System

The pineal system as described in the readings comprises the following primary components, each of which will be addressed in turn: (1) the pineal gland proper; (2) the lyden/Leydig gland and its subsystem; (3) the main pineal branch in the lower cerebellum; (4) the pineal cord or thread; (5) the pineal nerve; and (6) pineal centers at the base of the brain and along the spine.

The Pineal Gland Proper

As the namesake and conceptual anchor of the pineal system, the pineal gland in the center of the brain is the logical starting point. One reading uses the phrase "pineal gland proper" explicitly to distinguish the discrete pineal from its broader systemic extensions (4625-1). Yet even the readings' use of "pineal gland proper" can refer to locations other than the center of the head. Reading 3997-1 specifies "the pineal gland proper — that brush end of the cerebro-spinal system" in describing a reaction at the lower lumbar spine, suggesting that what the readings call "pineal gland proper" may include the brush-end terminus of the pineal thread in the coccygeal region as well as the cranial gland.

The ambiguity reflects the readings' consistent functional orientation: the pineal is identified wherever its activity is most directly expressed, whether in the brain, the cerebellum, or the terminus of the spinal cord. Nevertheless, the readings unambiguously describe a discrete cranial gland: "the pineal gland — as is at the base of the brain itself — which opens up for its activities and associations to those other portions of the brain" (294-141). This gland is the primary neuroendocrine anchor of the system and the interface with the brain's higher functions.

Reading 294-141 also provides the most detailed account of the pineal's developmental role in the embryo and fetus, describing it as "the Builder" — the primary organizing center during gestation from which the brain, and subsequently the whole body, takes its form. Its activity begins "within the third week" of conception, centered first at the cranial center and then at the ninth dorsal, the motivative force through the umbilical cord (281-47). This embryological account corresponds in general terms to the very early differentiation of the pineal complex during human brain

development, a process that begins in the third to fourth week of gestation. The aerial activity of the pineal during gestation — the psychic influence through which the mother's mental and emotional state shapes the developing fetus — is attributed to this same system (281-53).

The relationship between the pineal gland and the pituitary is consistently noted in the readings as particularly close: the two glands are paired repeatedly as the primary neuroendocrine interface (262-20, 281-49, 1001-9, 1593-1). Modern endocrinology confirms this functional pairing through the extensive melatonin-receptor distribution in the pituitary and the pineal's regulatory influence over pituitary-gonadal rhythmicity. The readings' designation of the endocrine network as "the endocrine system of the pineal" (281-49) anticipates the systems-biology perspective now standard in neuroendocrinology.

The Lyden/Leydig Gland: Seat of the Soul

The readings associate the lyden/Leydig gland with the pineal as the joint "seat of the soul": "the pineal and the Leydig are the SEAT of the soul of an entity" (294-142). Understanding this gland requires first resolving the terminology.

Terminology

The readings use two spellings — lyden and Leydig — for the same glandular entity. Reading 281-53 clarifies: "Lyden is the meaning — or the seal, see? while Leydig is the name of the individual who indicated this was the activity." The term lyden therefore carries a semantic content (sealed, closed door, the default-off state) while Leydig is the biographical attribution to Franz Leydig. A footnote included with reading 5722-1 (given in 1924, where the term "lytic" is used) documents the gradual evolution of the terminology in the

readings' recorded transcripts: "Notice the pronunciation of 'lytic' gland which later we discovered perhaps meant 'Leydig'. Sometimes later the pronunciation seemed to be 'lyden' which later we thought perhaps was 'Leydigian'" (5722-1). Throughout this appendix the combined designation lyden/Leydig is used to encompass both aspects.

Anatomical Location

The most explicit anatomical description of the lyden/Leydig appears in reading 3997-1:

Lyden [Leydig] meaning sealed; that gland from which gestation takes place when a body is created through coition . . . Located in and above the gland called genital glands, see? In the male, above the glands corresponding to testes. In the female, that above gland responding to testes in the male. Here in this particular case, near the size of a wren's egg.

Nominally should be about the size of a small pea. (3997-1)

Furthermore, reading 281-53 specifies: "It is in and above, or the activity passes through the gonads." Additional readings associate lyden/Leydig activity with multiple locations: the pelvis — including one explicit mention of "the lyden glands in the false [upper] pelvis" (4138-1); the base of the brain (2372-1, 3873-1, 744-1); the upper cervical spine (5526-1); and the gonads themselves (3428-1, 281-47, 294-141). The multiplicity of locations is consistent with the readings' functional definition of glands. The lyden/Leydig gland is present wherever its characteristic activity — the opening or closing of the energetic gateway between the reproductive system and the broader pineal system — is expressed.

Franz Leydig's Two Discoveries

Franz von Leydig (1821–1908) made two distinct discoveries that must be carefully distinguished. The cells of Leydig (1850) are interstitial cells scattered throughout testicular tissue, primarily responsible for the production of testosterone. They are among the most extensively researched endocrine cells in reproductive biology. Small populations of Leydig-like cells have also been identified in adrenal tissue (Pollock et al., 1986) and as hilus cells in the female reproductive system (Ansari et al., 2014), giving them a broader anatomical distribution than strictly testicular.

The Leydig gland (1892) is a distinct structure — a discrete, coiled glandular unit derived from the anterior portion of the mesonephric kidney, documented primarily in elasmobranch fishes (sharks and rays) and other non-mammalian vertebrates. As Norris (2007, p. 383) explicitly states: "It is not steroidogenic and should not be confused with the Leydig cells." The Leydig gland functions as an accessory reproductive organ, producing seminal fluid and maturation factors for spermatozoa (Hamlett et al., 2003; Wourms, 1977). Its location — derived from the anterior mesonephros, situated between the testis and the kidney — corresponds precisely to the readings' description of the lyden/Leydig gland as being above the gonads.

The readings' description of the lyden/Leydig as a discrete, pea-sized glandular entity — not scattered cells — matches the 1892 Leydig gland rather than the 1850 cells of Leydig. The mesonephric system provides the relevant anatomical substrate. In humans, mesonephric remnants persist in both sexes in the region above the gonads: in males as portions of the epididymis and rete testis derived from mesonephric tubules; in females as the epoophoron, paroophoron, and potential Gartner's duct remnants located in the

broad ligament above the ovaries (Libretti & Aeddula, 2023). Whether a discrete human Leydig gland corresponding to the readings' description persists as a mesonephric remnant, or whether the gland has simply not been identified by systematic anatomical investigation, remains an open question.

From the standpoint of the Leydig gland as discovered by Franz Leydig, combined with the readings' assertion that this gland is normally the size of a small pea and located above the gonads, one might consider Cowper's glands (bulbourethral glands) and their female homologues, Bartholin's glands, as possible candidates. Cowper's glands are pea-sized exocrine glands in the male reproductive system, located posterior and lateral to the membranous portion of the urethra; they produce a pre-ejaculate fluid that neutralizes urethral acidity in preparation for the passage of spermatozoa. Bartholin's glands are their homologous counterparts in females, located slightly posterior to and on either side of the vaginal opening, where they secrete a lubricating mucus. While these glands fulfill several of the anatomical criteria described in reading 3997-1 with regard to sexual reproduction, it is not apparent how accessory sex glands of this type could fulfill the more expansive functional attributes ascribed to the lyden/Leydig in the readings, particularly its designation as a joint seat of the soul. The specific anatomical structure described in the readings has not been definitively identified in human anatomy.

Physiology and Pathology

The readings attribute several physiological roles to the lyden/Leydig gland: it governs sexual reproduction (3816-1, 340-3); participates with the pineal in the development of the embryo and fetus (3997-1, 281-51); coordinates the nerve vibratory rates along the spine and in the brain (161-1, 744-1, 4506-1); and serves as the

energetic gateway — the sealed or open door — through which the life force ascends from the reproductive system into the pineal system during meditation, psychic experience, and certain pathological states (281-13, 2475-1, 294-140, 294-141, 294-142).

In pathological contexts, lyden/Leydig dysfunction — particularly engorgement or abnormal activation — is associated with psychiatric and neurological conditions including epilepsy, schizophrenia, and manic-depressive disorder (McMillin, 1991a; McMillin, 2022). In particular, many cases of epilepsy document the role of lyden/Leydig involvement through nervous system incoordination originating in the pelvic and lower spinal region and propagating upward through the pineal system to produce seizure activity (McMillin, 2022).

The readings also acknowledge a "leyden system" (849-2) in a reading addressing a young man suffering from gonorrhea. Despite the spelling variant, this is a reference to the lyden/Leydig gland as a subsystem within the broader pineal system, encompassing a glandular unit, the sex accessory glands (analogous to those described by Leydig in animal studies), and the gonads through which lyden/Leydig activity passes. This systemic perspective resolves much of the apparent confusion over the gland's location. Just as the pineal system is distributed throughout the body, the lyden/Leydig subsystem encompasses multiple anatomical components whose unity is defined by their shared functional role in governing the energetic interface between the reproductive glands and other systems of the body.

The Main Pineal Branch in the Lower Cerebellum

The readings describe a primary pineal center in the lower portion of the cerebellum, where the sympathetic and cerebrospinal

nervous systems coordinate. Reading 4381-1, for a person with schizophrenia, describes the result of chronic incoordination between these systems as "an enlargement of the pineal centers in the main branch or center of same in the lower portion of the cerebellum; forming, then, a definite place of contact with the physical attributes of the body." Reading 140-1 defines this center explicitly:

(Q) *What is the pineal center?*

(A) That gland in the base of the cerebellum that extends through the whole system and gives equilibrium to the body. (140-1)

Three additional readings employ the unusual expression "cerebellum oblongata" in describing pathological effects at this pineal center (readings 9-4, 2197-1, and 4559-1). Rather than a garbling of "medulla oblongata," the term likely draws attention to the specific zone of cerebellar-medullary connection — what modern neuroanatomy identifies as the inferior cerebellar peduncle, linking the cerebellum to the medulla oblongata. Reading 294-141 describes the post-natal position of the pineal as centered "in the lower portion of the brain, or cerebellum, and through the medulla oblongata to the central portion of the cerebrospinal cord itself." Reading 635-5 similarly describes pineal-related pathology as a "contraction to the pineal area — the ducts that run through the medulla oblongata into the portion of the cerebellum itself."

Three anatomical candidates have been proposed for this cerebellar pineal center (McMillin, 2019): the **fastigial nucleus**, located at the base of the cerebellum near the fourth ventricle, involved in maintaining balance, with documented connections to the autonomic nervous system and relevance to mental health (Zhang

et al., 2016); the **lingula**, an unpaired vermis lobe involved in balance located close to the fourth ventricle (Freitas & Bispo, 2010); and the **flocculonodular lobe** (vestibulocerebellum), which regulates postural equilibrium and is the most caudally located of the three (Roostaei et al., 2014). Reading 4381-1 refers to "pineal centers" in the plural, which may indicate that more than one structure is involved.

Modern neuroscience has considerably expanded the understood role of the cerebellum beyond the "traditional view of the cerebellum as a mere coordinator of autonomic and somatic motor functions" (Murdoch, 2010, p. 858). The cerebellum is now recognized as participating in executive functioning, memory, learning, attention, visuo-spatial regulation, language, and behavioral-affective modulation (Baillieux et al., 2008). Cerebellar dysfunction has been implicated in psychotic bipolar disorder (Shinn et al., 2017), autism (Becker & Stoodley, 2013), and schizophrenia (Andreasen & Pierson, 2008; Yeganeh-Doost et al., 2011). The concept of "cognitive dysmetria" — the cerebellar contribution to incoordination of thought analogous to its better-known incoordination of movement — has been proposed as a cerebellar signature of schizophrenia (Andreasen et al., 1998; Schmahmann, 2000).

A comprehensive review of cerebellar autonomic connections confirmed that the cerebellum projects to several autonomic brainstem structures including the nucleus tractus solitarius, parabrachial nucleus, and rostral ventrolateral medulla (Baker et al., 2019). These connections are consistent with the readings' description of the cerebellar pineal center as a site where the sympathetic and cerebrospinal systems coordinate — and where

their failure to coordinate produces psychiatric and neurological pathology.

The Pineal Cord or Thread

The readings describe a cord or thread that constitutes perhaps the most anatomically distinctive component of the pineal system. Reading 281-46 introduces it in developmental terms: "The cord that is eventually known or classified as the pineal is the first movement that takes place of a physical nature through the act of conception; determining eventually — as we shall see — not only the physical stature of the individual entity but the MENTAL capacity also, and the spiritual attributes." Reading 288-29 designates "the gland with its thread known as the pineal gland" as the channel through which psychic forces operate in the body.

Reading 4712-1 gives an explicit anatomical trajectory: "this gland runs from the medulla oblongata to the lower end of the spine, in the coccyx." Reading 4862-1 distinguishes between "the pineal gland in the base of brain and its cord or thread, or connection, as traces itself through the body." Reading 5014-1 adds structural specificity: the pineal as it runs along the spine has an interior dimension "having to do with growth" and bilateral exterior portions (left and right) connecting to the lumbar axis, 9th dorsal, brachial center, and upper cervical center.

In pathological contexts, the cord is described as subject to engorgement and pressure. Reading 769-1 describes "an engorgement of the cord itself, the pineal cord, in the area of the lumbar region" producing spasmodic reactions to the brain centers. Reading 1168-1 associates the lower portion of the pineal cord with the adrenal glands and the lacteal plexus in a case of probable

bipolar disorder, linking periodic disruption to cyclical mood instability.

The readings also identify the pineal cord with the "silver cord" of biblical scripture (Ecclesiastes 12:6). Reading 254-68 describes a dramatic disruption of the psychic process in terms of "contraction of those channels through which the activity of the psychic forces operates in the material body; as we have outlined, along the pineal, the lyden and the cord — or silver cord." Reading 262-20 extends this: "that which connects the pineal, the pituitary, the lyden, may be truly called the silver cord . . . for the destruction wholly of either will make for the disintegration of the soul from its house of clay."

Reissner's Fiber as Anatomical Candidate

The most anatomically precise scientific candidate for the pineal cord or thread is Reissner's Fiber (RF), a glycoprotein filament first documented by anatomist Ernst Reissner in 1860. RF is secreted by the subcommissural organ (SCO), a circumventricular organ located in the posterior region of the third ventricle immediately below the posterior commissure and in close anatomical proximity to the pineal gland. The SCO's secretory product — a glycoprotein called SCO-spondin — is released into the cerebrospinal fluid where it condenses into a threadlike structure that extends caudally through the cerebral aqueduct, the fourth ventricle, and the central canal of the spinal cord to the terminus at the filum terminale near the coccyx (Cantaut-Belarif et al., 2018; Rodríguez & Caprile, 2001).

The anatomical correspondence with the readings' description is substantial. Like the readings' pineal cord, RF originates in the brain in close proximity to the pineal gland, traverses the entire length of the central canal to the coccyx, is continuously produced

from its proximal end, and plays a primary formative role in embryonic and fetal development. The SCO is among the first differentiated brain structures in the embryo, consistent with the readings' statement that the pineal cord is "the first movement that takes place of a physical nature through the act of conception" (281-46).

The scientific literature on RF has expanded considerably since McMillin (2019) and in ways that strengthen the association. A landmark 2018 study by Cantaut-Belarif et al. demonstrated that RF is essential for the morphogenesis of a straight posterior body axis in zebrafish — when scospondin is mutated and RF cannot assemble, the embryonic body axis develops a systematic curvature resembling idiopathic scoliosis. Subsequent studies confirmed that RF must remain intact throughout postembryonic development to maintain spinal straightness (Bhatt et al., 2020; Troutwine et al., 2020). This body-axis organizing role closely parallels the readings' description of the pineal cord as determining "the physical stature of the individual entity" (281-46).

A second line of research established that RF transmits mechanical signals through its interaction with CSF-contacting neurons (CSF-cNs) lining the central canal. These ciliated neurons detect spinal curvature via their physical contact with RF and relay this information to spinal circuits governing posture (Orts Del'Immagine et al., 2020; Cantaut-Belarif et al., 2020). This mechanosensory function corresponds well to the readings' description of the cerebellar pineal center as giving "equilibrium to the body" (140-1). RF has also been shown to bind and clear biogenic amines — serotonin and noradrenaline — from the CSF as it moves caudally through the central canal (Caprile et al., 2003), providing a body-wide neurochemical regulatory function

consistent with the readings' description of the pineal cord as a governing influence throughout the system.

The primary limitation of the RF-as-pineal-cord hypothesis is the uncertain status of RF in adult humans. The subcommissural organ, which produces RF, has been reported as absent or vestigial in adult humans shortly after birth, though remnants may persist (Auctores, 2023). Whether RF is present in adult humans in a form not yet detected by available techniques — post-mortem degeneration is rapid, and current neuroimaging lacks sufficient resolution (Wile, 2018) — or whether the readings' adult pineal cord corresponds to a related but distinct structure, remains unresolved. This is the most significant current gap between the readings' description and the available scientific evidence.

The Inner, Outer, and Bilateral Structure

Reading 5014-1 offers a structurally specific description that invites comparison with known spinal anatomy. The reading describes a pineal structure with an interior dimension "having to do with growth" and bilateral exterior portions connecting to the lumbar axis, 9th dorsal, brachial center, and upper cervical center. This tripartite architecture — a central inner strand with bilateral outer extensions — maps onto three familiar anatomical structures: the central canal of the spinal cord (inner, containing RF); the bilateral sympathetic chain ganglia running along either side of the vertebral column (outer, bilateral); and the spinal cord as the structural container of all three.

This same tripartite structure is independently recognized in the yogic tradition as the three primary nadis: sushumna (central channel running through the spinal cord), ida (left channel), and pingala (right channel). Ida and pingala are described as spiraling

around sushumna, intersecting at each chakra level from the muladhara at the coccyx to the sahasrara at the crown. Multiple anatomical studies have identified sushumna with the spinal cord (and its central canal), ida with the left sympathetic trunk, and pingala with the right sympathetic trunk (Khedikar, 2016; Gautam et al., 2025). The convergence of the readings' inner/outer/bilateral description of the pineal along the spine with the yogic nadi system and with known spinal neuroanatomy suggests that all three frameworks are describing the same underlying anatomy under different conceptual vocabularies.

The Pineal Nerve

Twenty-six readings use the term "pineal nerve" explicitly, with additional readings referring to a "nerve supply" or "nerve connection" of the pineal. The readings describe this nerve as running the full length of the spine: "from the first cervical to the end of the cerebrospinal system, which it traverses, this pineal nerve, with the spinal cord" (41-1). Reading 4678-1 specifies its spatial relationship to the spinal cord: "this central nerve, from the pineal gland, runs through with the cord, as it were, in the spinal system, running outside, though, the spinal cord itself, though connected with same at the base of the brain and to the brain itself." Reading 4581-1 identifies it functionally as "the seat of the forces as exercised in the sympathetic nerve system."

A particularly dense anatomical specification appears in reading 9-4, which describes the first cervical as "that connection between the pineal nerve, pneumogastric nerve, sympathetic nerve (both ends) and the cerebrospinal in its entrance to the cerebellum oblongata." The term "cerebellum oblongata" in reading 9-4 most likely designates the cerebellar-medullary junction rather than either structure alone, consistent with the readings' use of this expression

elsewhere. The pneumogastric nerve is the readings' term for the vagus nerve. This passage identifies the first cervical region as a zone of convergence between four distinct nerve systems simultaneously — a description consistent with modern neuroanatomy's recognition of the skull base and upper cervical region as a site of intense autonomic and somatic integration, encompassing the superior cervical ganglion, the nodose ganglion of the vagus, the upper cervical spinal cord, and the medulla oblongata in close proximity.

The Nervus Conarii

At the level of the pineal gland itself, the most directly relevant scientific candidate is the nervus conarii (nervi conarii, plural), a bilateral sympathetic nerve first documented in the early twentieth century and reviewed comprehensively in a 2023 paper in *Anatomy and Cell Biology* (Gregory et al., 2023). The nervus conarii originates bilaterally from the superior cervical ganglion (SCG) at the skull base and travels posteriorly along the tentorium cerebelli to terminate on the pineal gland. It provides the primary sympathetic innervation driving pinealocyte production of melatonin.

The bilateral origin of the nervus conarii from both left and right superior cervical ganglia, with axonal bundles from the two sides converging on the pineal gland, mirrors the readings' description of the outer bilateral dimensions of the pineal along the spine. The nervus conarii has been described in the scientific literature as "almost forgotten" (Gregory et al., 2023), which is itself a resonant observation given the readings' recognition of the pineal as "a mass without apparent functioning" (294-141) whose significance has been overlooked. Additional innervation of the pineal from the parasympathetic sphenopalatine and otic ganglia, and from the trigeminal ganglion (carrying substance P and calcitonin gene-

related peptide), indicates multimodal innervation consistent with the readings' description of the pineal nerve as connecting to "both branches of the sympathetic" as well as to the cerebrospinal system.

The Descending Spinal Pathway

The nervus conarii addresses the terminal innervation of the pineal at the brain level. But the readings describe a pineal nerve running the entire length of the spine, which requires a spinal-level correlate. The retinohypothalamic-pineal pathway provides this. The circadian pathway governing melatonin production descends from the suprachiasmatic nucleus of the hypothalamus through the paraventricular nucleus to the intermediolateral cell column (IML) of the upper thoracic spinal cord, then ascends via the superior cervical ganglion to the pineal via the nervus conarii (Moore, 1996). The thoracic IML — a bilateral nucleus in the lateral horn of the spinal cord extending from approximately T1 to L2 — is the spinal component specifically dedicated, in part, to pineal regulation via the sympathetic. As a bilateral structure running exterior to the spinal cord itself, the IML corresponds well to the readings' description of the pineal nerve as running "outside, though, the spinal cord itself" (4678-1) in a bilateral exterior disposition.

Taken together, the IML (as spinal preganglionic sympathetic nucleus), the bilateral sympathetic chain ganglia ascending the spine, the superior cervical ganglion as relay, and the nervus conarii as terminal bilateral nerve to the pineal form an anatomically continuous pathway dedicated, in part, to pineal regulation. This pathway extends the length of the thoracic spine in a bilateral, exterior position — corresponding with reasonable precision to the readings' description of the pineal nerve's spinal course, bilateral character, and outside position relative to the spinal cord.

The Pneumogastric Connection

Reading 9-4's specification of the pneumogastric (vagus) nerve as meeting the pineal nerve at the first cervical center is anatomically plausible. The vagus nerve exits the brainstem at the level of the medulla oblongata and passes through the jugular foramen in close proximity to the superior cervical ganglion and the internal carotid artery — the same anatomical corridor through which the nervus conarii travels to reach the pineal. The vagal-sympathetic proximity at the upper cervical level is well established. The physiological significance of this convergence in the readings is that the pineal nerve coordinates not only the bilateral sympathetic system but also the parasympathetic outflow through the vagus — a coordination that, when disrupted, appears to affect the full range of visceral organs governed by those systems (reading 4581-1).

Pineal Centers Along the Spine

Several readings describe pineal centers at specific vertebral levels that serve as major nodes of the pineal system. Reading 5691-2 identifies "the centers as especially govern the central nerve system; also that of the pineal gland's connection with the brain forces in the 1st and 2nd cervical, and in the 9th dorsal and the 4th lumbar." Reading 3676-1 specifies the 3rd cervical, 9th dorsal, and 4th lumbar as "the three centers through which there is activity of the kundaline forces that act as suggestions to the spiritual forces for distribution through the seven centers of the body." Reading 567-1 describes pineal engorgement "especially at the 3rd and 4th LUMBAR and the 1st and 2nd cervical" in a case of epilepsy.

The first and second cervical region is the most consistently cited pineal center in the readings. This level marks the convergence of the superior cervical ganglion — the relay station for sympathetic innervation of the pineal — with the medulla oblongata, the vagus

nerve, and the upper cervical spinal cord. The ciliospinal center of Budge, whose output governs the superior cervical ganglion and thereby the pineal pathway, is located within the C8-T2 range of the IML. Reading 9-4's dense anatomical specification of the first cervical as a convergence of the pineal nerve, pneumogastric nerve, and sympathetic nerve with the cerebrospinal corresponds directly to this recognized zone of autonomic integration at the skull base.

The ninth dorsal (ninth thoracic) is specified as a critical pineal and kundalini center. This level falls within the range of the thoracic IML where preganglionic sympathetic fibers originate, and corresponds anatomically to the zone governing the celiac and solar plexus — the major abdominal sympathetic ganglionic complex that the readings call the "solar plexus brain" (2259-1). The readings' association of the 9th dorsal with prenatal developmental activity through the umbilical cord (281-47) may reflect the significant role of celiac-mesenteric sympathetic innervation in governing abdominal organ development.

The fourth lumbar is identified as a pineal center and a site of spinal engorgement in some cases of epilepsy and psychiatric illness. This level is within the lumbar sympathetic ganglionic zone that governs the lower gastrointestinal tract, urogenital organs, and pelvic viscera. Reading 567-1's association of lumbar pineal engorgement with epilepsy — in conjunction with lyden/Leydig gland involvement — is consistent with the anatomical relationship between lumbar sympathetics and the pelvic reproductive system.

The readings' specification of seven body centers activated by kundalini energy ascending through the pineal system (3676-1) corresponds to the seven chakras of the yogic tradition. In yogic anatomy these chakras mark the locations where ida, pingala, and sushumna intersect, corresponding approximately to the major

autonomic ganglionic plexuses along the spine: the coccygeal-ganglion-impar (muladhara), the hypogastric plexus (svadhisthana), the solar and celiac plexus (manipura), the cardiac plexus (anahata), the pharyngeal plexus (vishuddha), the superior cervical ganglion region (ajna), and the cortex (sahasrara). The alignment between the readings' three primary pineal centers (1st cervical, 9th dorsal, 4th lumbar) and the yogic description of the three principal chakra regions governing the nervous system is consistent across independent analytical traditions (Khedikar, 2016; Gautam et al., 2025).

The Pineal System as Coordinating and Integrating Influence

The primary function attributed to the pineal system in the readings is coordination and integration — specifically, the coordination of the sympathetic and cerebrospinal nervous systems, and the integration of the mental and spiritual dimensions of the person with the physical body. Reading 567-1 describes the pineal as "the GOVERNING body to the coordinating of the mental and physical," and reading 5498-1 identifies it as "the governing point of the brain impulses." This governing function is described in terms of vibration: "in the nerves as give the vibration to the glands in the reproductive and in the vibratory rate set through the pineal gland, and the branches of same in each major ganglion along the spine" (464-4).

The readings compare this governing function to a mechanical regulator. In reading 1001-8, the pineal system is described as functioning like a belt-and-pulley governor: "that state where there may be termed that the governor's belt of the nervous system slips off." When the impulse gets moving too fast — as in an epileptic seizure — the belt is thrown off the pulley and consciousness is lost. The mechanical analogy extends to the reproductive system:

"the genitive organism is as the motor, and the Leydig as a sealed or open door" (294-142). A complete mechanical system is thus described: the lyden/Leydig as switch, the reproductive system as motor, and the pineal as governor and regulator.

The role of the pineal in coordinating the cerebrospinal and sympathetic systems is the central pathophysiological theme in the readings on epilepsy. The readings are not describing simple neuroendocrine regulation but a governing influence that maintains the dynamic balance between the voluntary and involuntary nervous systems, the conscious and unconscious mind, and the physical and subtle aspects of human experience. When this coordination fails — whether through spinal pressure, glandular engorgement, lacteal duct pathology, or other means — the result is incoordination that can manifest as epileptic seizures, psychiatric illness, or subtler disorders of equilibrium and impulse control.

The Imaginative and Impulsive System

The readings use the expression "imaginative and impulsive system" as a functional designation for the pineal system's neurological substrate. The term is strongly physiological: it designates the sympathetic nervous system in its role as the nervous system of the unconscious mind and the imagination. Reading 130-1 describes it: "THROUGH the sympathetic system, which is as the basis of the IMAGINATIVE forces; NOT that the body imagines as its illness, but that it may be accentuated by suggestion or RELIEVED much by suggestion." The sympathetic system is the nervous system through which mental and emotional states — purposeful or otherwise — find physical expression.

In pathological contexts, the imaginative and impulsive system can become dysregulated. Reading 340-41 cautions against allowing negative expectations to "set IN the imaginative and impulsive system such expectancies as to produce a cogental [sic] reaction in the digestive forces of the body." Reading 4381-1 describes schizophrenia (*dementia praecox*) as resulting from incoordination "between the sympathetic (or the imaginative and impulsive system) and the physical or cerebrospinal system." This psychosomatic mechanism is not simply metaphorical — it corresponds to the well-established role of the autonomic nervous system (and particularly the sympathetic) in mediating psychosomatic effects, to which modern biofeedback and mind-body medicine attest.

Several aspects of the imaginative and impulsive system are relevant to epilepsy specifically. Psychogenic or nonepileptic seizures may represent a partial engagement of the pineal system's imaginative and impulsive dimension in which nervous system incoordination is present but without the full abnormal, excessive, and synchronous neuronal activity that defines true epileptic seizures. In such cases, sympathetic dysregulation without the higher-level lyden/Leydig activation that characterizes typical epileptic incoordination may be a useful interpretive framework.

Certain focal seizures — particularly those arising from the temporal lobes — present with distinctly "psychic" symptoms as defined in modern epileptology: fear, panic, *déjà vu*, *jamais vu*, forced thoughts, and experiences of precognition or prescience (Sadler & Rahey, 2004). These are manifestations of the imaginative forces that in ordinary life operate through the unconscious sympathetic system, momentarily breaking through into waking consciousness during the seizure. The readings' description of the

imaginative body's role in producing alterations of consciousness (294-141) is consistent with this temporal-lobe clinical picture.

Sleep and dreams also engage the imaginative and impulsive system. The readings describe sleep as a period of soul activity in which the conscious mind recedes and the imaginative forces are active through the sympathetic system (5754-1). Coordination of the nervous systems is required for healthy sleep: "for the cerebrospinal is to the whole of the physical body as of that of IMPULSE to carry out conditions of the living physical organism, while the sympathetic system is rather that of the imaginative, or akin to the psychic and to the operative forces of the brain centers and impulses. Without coordination, these bring restlessness and insomnia" (5601-1). The well-documented relationship between sleep disruption and seizure susceptibility in epilepsy resonates with this description of sympathetic-cerebrospinal coordination as the basis for healthy sleep.

The Abdominal Dimension: The Solar Plexus Brain

In addition to the cranial and spinal components, the pineal system has a significant abdominal dimension organized around the solar plexus. The readings refer to this as the "solar plexus brain" (2259-1), reflecting the understood historical significance of the great sympathetic system's abdominal ganglia as a semi-autonomous nervous center governing digestive and reproductive organs. Reading 1001-9, in explaining the mechanism of seizure-related loss of consciousness, specifies: "From the solar plexus to that of the lyden [Leydig] gland, or through the pineal. The lyden [Leydig] is IN the pineal, see? . . . [The genitive forces], acting through those of the solar plexus, and the attempt to coordinate — they push in so much it pushes out consciousness."

The most common abdominal pathology associated with epilepsy in the readings is adhesion or dysfunction of the lacteal ducts — the lymphatic capillaries of the small intestine through which digested fats are absorbed into the circulation. Reading 571-3 describes the effect as "a short-circuiting as it were between the nervous systems in the lacteal duct area." Reading 567-4 offers a diagnostic correlate: "From EVERY condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum." This cold spot, resulting from impaired circulation in the area of lacteal duct adhesion, represents the abdominal short-circuit of the pineal system that underlies many epilepsy cases in the readings.

The flow of life force through the solar plexus in relation to the other pineal centers is described in reading 281-53: "as it rises and is distributed through the other centers it returns to the solar plexus area for its impulse through the system." This description of a circulatory or recurrent flow pattern through the abdominal center, in conjunction with ascending and descending movements along the spine, provides a dynamic picture of the pineal system as a continuously cycling energy circuit rather than a simple unidirectional pathway.

The Seat of the Soul: The Pineal-Leydig Axis

The readings' most philosophically striking assertion about the pineal system is that the pineal and lyden/Leydig glands together constitute the anatomical "seat of the soul": "the pineal and the Leydig are the SEAT of the soul of an entity" (294-142). This is elaborated in reading 3969-1: "The basis, the seat of the soul, then, in that of the lyden [Leydig] gland, with the pineal reaction in the system, and this the activity that brings about psychological conditions." The pineal and lyden/Leydig together form the axis through which the soul connects with and expresses through the

physical body — the pineal as the upper pole of this axis (brain, consciousness, governing function) and the lyden/Leydig as the lower pole (reproductive system, life force, energetic source).

The concept of a physical locus for soul-body connection has a long history in Western philosophy. Descartes identified the pineal as "that part of the body where the soul operates most directly" (Wheelwright, 1954, pp. 357–358) — specifically because of its central, unpaired position in the brain. The readings extend this intuition by adding the reproductive pole: the soul does not connect to the body only through the brain but through the energetic axis that runs from the reproductive life-force at the base to the governing consciousness at the crown. This is the same axis described in yogic anatomy as the sushumna pathway from muladhara to sahasrara, and the activation of this axis — through meditation, psychic development, or certain pathological processes — constitutes the kundalini experience.

The kundalini dimension of the pineal system is the context in which the readings most explicitly address altered states of consciousness, psychic development, and the spiritual implications of the soul's physical embodiment. These aspects — while fundamental to the readings' complete picture of the pineal system — are distinguished from the physical and pathophysiological content that is the primary focus of this appendix. The relationship between the pineal-Leydig axis, kundalini activation, and the spectrum of experiences from deep meditation through epileptic seizure and psychosis is discussed in McMillin (1991a) and McMillin (2019) and warrants its own treatment in the broader APP textbook context.

Summary

The pineal system, as described in the Edgar Cayce health readings, is a body-wide coordinating and integrating network encompassing the pineal gland in the center of the brain, the lyden/Leydig gland as a reproductive-region subsystem, the main pineal branch in the lower cerebellum, a cord or thread extending from the pineal through the central canal of the spinal cord to the coccyx, a nerve running the length of the spine with connections to both the sympathetic and cerebrospinal systems, and a series of centers at specific vertebral levels (particularly the 1st cervical, 9th dorsal, and 4th lumbar) as well as in the abdominal solar plexus region.

The primary function of this system is coordination and integration: governing the balance between the sympathetic and cerebrospinal nervous systems, and integrating the mental and spiritual dimensions of human experience with the physical body. The readings describe this function through a variety of metaphors — aerial antenna, mechanical governor, belt-and-pulley regulator — all of which point to the same fundamental role: maintaining the dynamic equilibrium of the entire organism.

Modern anatomical and physiological research offers partial but meaningful correlates for each component of the pineal system. Reissner's Fiber, whose developmental and mechanosensory functions have been substantially clarified since 2018, is the most compelling candidate for the pineal cord or thread. The nervus conarii and the descending retinohypothalamic-pineal pathway through the thoracic intermediolateral cell column collectively correspond to the pineal nerve in its bilateral, exterior, spinal distribution. The specific vertebral levels identified as pineal centers correspond to recognized zones of major autonomic functional significance. The lyden/Leydig gland most precisely

corresponds to the Leydig gland (1892) of vertebrate mesonephric anatomy, with mesonephric remnants in both sexes providing a plausible substrate, though the specific discrete structure described in the readings has not been identified in human anatomy.

Significant gaps remain. The presence of Reissner's Fiber in adult humans is not established. The discrete lyden/Leydig gland has not been found in humans. The precise nature of the connection between the Leydig gland and the pineal nerve, and the functional meaning of the lyden being "IN the pineal" at the brain level, have no current anatomical correlate. These gaps are acknowledged as honest markers of the current limits of investigation rather than evidence against the readings' framework.

The convergence of the readings' descriptions with the yogic tripartite anatomy of sushumna, ida, and pingala — recognized independently across cultural traditions as corresponding to the central canal, left sympathetic trunk, and right sympathetic trunk — suggests that the readings are engaging a perennial anatomical observation that has been expressed in different vocabularies across traditions. The pineal system, in the readings' framework, provides the most detailed, specific, and therapeutically actionable version of this multi-tradition insight.

Appendix B: Bioelectricity in the Cayce Readings

The readings describe the body's bioelectrical system across a range of levels — from the atomic vibrations that constitute the fundamental nature of matter, through cellular, tissue, and organ-level coordination, to whole-body energetic patterns, and ultimately to the interface with mind and spirit. These levels are not separate systems. They are dimensions of a single reality, each presupposing the one below it and each accessible to the one above. The sections that follow trace this continuum systematically, beginning with the most physically tractable level — the metabolic polarity of the body's battery — and moving progressively toward the subtler levels of the vibratory system, the pineal system, and the body-soul interface.

Section 1: The Battery of the Body

Introduction

The readings present the human body as an intrinsically electrical system — one in which vital energy is not merely a metaphor for health but a literal bioelectrical reality that can be generated, stored, depleted, distributed, and restored. Within this larger framework, one of the most frequently invoked structural concepts is what the readings call "the battery of the body" — a harmonious ensemble — a quartet of central organs whose collective activity constitutes the body's primary reservoir of vital energy. Understanding this concept is foundational to understanding why and how the electrotherapeutic appliances — particularly the Radio-Active Appliance (also called the Radial Appliance which will be used in

this appendix) and the Wet Cell Battery — are employed in the readings' therapeutic system.

It must be stated clearly at the outset that the battery of the body, as described in the readings, is only one component — albeit a fundamental one — of a broader and more complex bioelectrical system. The battery concept addresses primarily the generation and storage of vital energies through the deep circulation and the metabolic polarity of the visceral organs. Other dimensions of the body's bioelectrical system will be addressed in subsequent sections of this appendix. The battery of the body is where we begin because it provides the physiological ground from which the other levels can be understood.

Technical Note: The Radial Appliance can be used in two different modes "preventative" and "curative" (1800-16). In the preventive mode it is used without a solution jar and attached to opposing extremities to help balance the system and increase relaxation. When used in a circuit with a solution jar attached to the abdomen and another nerve center it is called "curative." In the early readings before the Wet Cell Battery became the standard for curative treatment, the Radial Appliance was sometimes prescribed in the curative mode for regenerative purposes. But by far the most common prescription of the Radial Appliance was for "preventive" use and that is the assumed mode throughout the rest of this appendix.

The Four-Organ Ensemble

The readings consistently identify four organs as constituting the central battery of the body: the heart, lungs, liver, and kidneys. When the readings speak of the battery "running down" — a concept that appears in numerous physical readings — it is invariably these

four organs whose coordinated failure is at issue. Reading 3255-1 provides one of the clearest statements:

This is what might ordinarily be called a condition wherein the general taxation has run down the battery for the body; that is, the toxic forces in the body have become excessive. Thus there are pains in the arms, or shoulders at times, in the back, through the lower limbs and through the abdominal area. All of these come and go, dependent upon how well and how thoroughly the eliminations are in the body ... Then we have those reflexes that cause some disturbance with the heart, with the kidneys and with the liver. These all arise from toxic forces that affect naturally (for, as the body battery is) heart, liver, lungs and kidneys. These must coordinate. When they do not, some portion of it is going to revert. (3255-1)

The same ensemble appears in reading 4007-1, where "the activities of the heart, the lungs, the liver, the kidneys may be called the batteries of the body." Reading 5304-1 specifies the consequence of battery failure in energetic terms: "the activity of the liver, heart, lungs and kidneys lack sufficient energies, as it were, to keep the central organs, as the battery of the body, charged sufficiently. And thus we have the periods of nerve exhaustion, upsetting of the circulation, shortness of breath, diversions in the assimilation." Reading 3324-1, while not using the battery terminology explicitly, describes the same functional reality: "the heart, the liver, the lungs and the kidneys (as the central nervous forces, the central supply, as indicated) gradually running down in their ability to supply the energies."

What the readings mean by these four organs constituting a "battery" becomes clearer when their individual roles are examined

in relation to one another. The heart circulates the blood that is the medium of energy distribution. The lungs oxygenate that blood, providing the metabolic substrate without which the liver and kidneys cannot perform their respective functions. The liver and kidneys — as will be discussed in detail below — constitute the positive and negative poles of the battery proper. They are the sites where the blood is chemically transformed in opposite directions, generating the bioelectrical polarity that gives the blood its vital charge. Reading 2091-3 expresses this structural complementarity concisely: "the liver and the heart work coordinantly. The lungs and the kidneys, while coordinating, purify the blood in different directions."

The Liver and Kidneys as the Poles of the Battery

Within the four-organ ensemble, the liver and kidneys occupy the most precisely defined bioelectrical roles. The readings describe them repeatedly and explicitly as the positive and negative poles of the body's generative battery. Reading 4909-1 states the principle in its most direct form:

In the body we have two poles acting to the living body, the kidneys and the liver, the active principles are the same as two poles of electricity in the body, those which give life to the body. (4909-1)

Reading 514-4 identifies this as a generator relationship: "as to the activities of the liver and the kidneys, they are as the poles of a generator that are as positive and negative in their reaction." And reading 137-81 establishes the functional consequence of this polarity for systemic health: "the liver and the kidneys are the positive and negative poles of a human body, and when one becomes overtaxed, necessarily, the other becomes supercharged in its functioning."

The significance of this polarity extends beyond the organs themselves to the blood that passes through them. Reading 369-5 provides a remarkable formulation. The liver and kidneys "act to the system, in their blood action as the positive and the negative poles of each CELLULAR UNIT CREATED IN THE BLOOD STREAM ITSELF! and from the BLOOD ALL PORTIONS of the body must take that NECESSARY to produce the life IN physical organs." [Note: The capitalization in this excerpt is the original dictation as recorded by stenographer Gladys Davis with Dr. Lydic of the Cayce Hospital present.] This is a striking claim. The bioelectrical polarity of the liver-kidney axis is not merely an organ-level phenomenon but is impressed upon each cell created within the blood stream as it passes through the hepatic circulation. The blood is thereby the medium through which the battery's energy is distributed to every part of the body.

Reading 842-1 confirms the circulatory locus of the positive pole explicitly, referring to "the liver — or the positive pole of the body itself in the circulatory system." Reading 557-5 adds anatomical specificity: "the positive pole of the body (or the LIVER and the gall duct area)" and "the other pole (or through the KIDNEYS and bladder)." The polarity thus encompasses not just the principal organs but their associated ducts and excretory pathways.

The Functional Basis of the Polarity: Secretion, Excretion, and the Anabolic-Catabolic Axis

The readings do not merely assert a polarity between the liver and kidneys — they also provide a functional account of what generates it. The most systematic statement appears in reading 514-4:

The liver is an excretory and secreting organ. The kidneys are excretory and secreting, but in the opposite way and manner. The liver prepares values for the

assimilating and for the necessary elements to PRODUCE better assimilation, while the functioning of the kidneys is rather to PURIFY the circulation by taking FROM the blood supply infectious forces that are carried off by the slushing of same with the quantities of water taken. (514-4)

Both organs are secretory and excretory in nature — they share this functional identity. But they perform these functions "in the opposite way and manner." The liver's orientation is constructive and preparatory. It produces the materials the body needs for assimilation and the building of cellular forces. The kidneys' orientation is eliminative and purifying. They extract spent and toxic material from the blood and carry it off in solution. In the language of standard metabolic physiology, the liver is primarily anabolic — engaged in synthesis, storage, and preparation of nutritive elements — while the kidneys are primarily catabolic, engaged in the breakdown and elimination of metabolic waste.

Several readings link this functional opposition directly to the concepts of metabolism and catabolism. Reading 4511-1 states that the remedy for disturbance between the poles requires "that vibration to the body that sets the metabolism and katabolism of the body near to normal vibration, giving to the solar plexus ITS proper reaction." Reading 2091-3 associates the kidneys with "the katabolism of the body." Reading 2230-1 describes the pathological state as "the catabolism [katabolism] being abnormal." The anabolic/constructive function of the liver and the catabolic/eliminative function of the kidneys thus appear to be the biochemical basis for the bioelectrical polarity that the readings describe.

This has a plausible parallel in modern biochemistry. Anabolic processes — such as the liver's synthesis of proteins, glycogen, bile

salts, and coagulation factors — are characteristically electron-consuming (reductive) reactions. Catabolic processes — such as the renal filtration and active secretion of metabolic waste products — are characteristically electron-releasing (oxidative) reactions. The thermodynamic asymmetry between these two classes of biochemical reaction is precisely the kind of differential that drives electrochemical potential in a battery: one electrode at which reduction occurs (the positive pole, the liver) and one at which oxidation occurs (the negative pole, the kidneys). Whether the readings' polarity maps precisely onto this modern electrochemical framework remains an open question. The correspondence is suggestive, however, and warrants further investigation.

The Dynamic Character of the Polarity

An important and sometimes overlooked feature of the hepatic polarity is that it is not fixed or anatomically absolute. The readings indicate that the positive-negative designation of the two poles can shift depending on the physiological state of each organ. Reading 3798-3 states this explicitly: "from the one we get negative, from the other we get positive. One becomes positive when inflamed, the other becomes negative." Reading 2263-1 similarly notes that the liver and kidneys are poles "one a positive, one a negative, or they may be reversed by conditions existent in a circulation."

This dynamic reversibility is consistent with the behavior of electrochemical systems under varying load or perturbation. In a conventional battery under conditions of deep discharge or sustained overload, the terminal polarity of a depleted cell can reverse as its active chemistry becomes exhausted — a phenomenon known as cell reversal (Linden & Reddy, 2002). Reading 4511-1 uses exactly this analogy: "When disturbances exist between these poles there is seen, as it were, short circuit. Hence there is thrown into the

system, then, those poisons that should be eliminated." The clinical consequence of a "short circuit" between the hepatic poles is autointoxication — the reabsorption of waste products that should have been eliminated, now flooding the blood and nerve supply (see section 2.2.5 Toxicity).

The dynamic character of the polarity also explains the readings' consistent emphasis on balance between the two poles. Neither pole should dominate the other. Reading 4411-1 states: "without an equal balance between the poles of the body (liver and kidneys), one is taxed at the expense of that portion of the system." Reading 4561-1 elaborates: "when one pole in the system and the liver and kidneys, or poles in hepatic circulation, when one becomes overcharged it is at the expense of the functioning in system of the opposite pole." The therapeutic imperative — in manual therapy, diet, hydrotherapy, and electrotherapy alike — is to restore the equilibrium between the poles, not merely to stimulate one at the expense of the other.

The Battery and the Nervous System

A crucial dimension of the battery concept that extends its significance beyond the visceral organs is its relationship to the nervous system. Several readings indicate that the body's battery is not only a source of vital energy for the blood and tissues generally, but specifically for the nerve energies of the body. Reading 2538-1 locates the battery's output explicitly in neurological terms: "there has grown such a deficiency in the vital energies that it might be said the battery has run down, — that is, the nerve energy in the centers between the cerebrospinal and the sympathetic nerve system." Reading 3130-1 similarly describes the depleted battery in terms of nerve energy: "the nerve energies of the body, the ability to store energy, and the muscular force and the tendons of the body has given way."

Reading 3602-1 makes the neurological consequence of battery depletion most vivid: "the batteries of the whole system are just running down. The incoordination between the locomotories of the body — both as to arms and the lower limbs — are slower in their reflexes and impulses. The activities are then being depleted and these prevent the white and gray impulses in nerve plasma from reacting." The reference to "white and gray impulses in nerve plasma" points toward the intrinsic polarity of nerve tissue itself — a concept elaborated in reading 907-1: "nerve fibre is both positive and negative, or both white and gray matter, as it passes through the activity of the system. When there is a deficiency of that which supplies to the negative or positive force, there is a drain then that begins upon the system." The nerve fiber, like the body's battery, has its own positive-negative polarity — and that polarity depends upon adequate energy supply from the battery.

Reading 4069-1 links the battery concept to the cerebrospinal-sympathetic coordination centers specifically, describing battery depletion as exhaustion of "the centers where the impulses from sensory system and the sympathetic nervous system coordinate with the cerebrospinal system." And reading 986-1 — in a remarkable passage on narcolepsy — connects the polarity of the hepatic system directly to the boundary between the conscious and unconscious, voluntary and involuntary nerve activity:

There is the inability to remain conscious of the reaction or responses between the brain and sensory forces ... the cerebrospinal system becomes involuntary, and the sympathetic or vegetative system becomes voluntary ... this is a blood disturbance; or the lack of the effluvia in the blood to make — as it were — the proper connections between the positive and negative vibrations in the system. (986-1)

The Wet Cell Battery is then prescribed to "carry the necessary elements [gold and silver] in the system to make for positive and negative reactions between these poles in the system." (986-1) This passage suggests that the hepatic polarity — expressed through the "effluvia" or vital electrical quality of the blood — is the very substrate that maintains the proper relationship between conscious and unconscious nerve activity. When the battery runs down, this relationship is disrupted at the most fundamental level of neurological organization. The therapeutic use of the wet cell battery alternating the vibratory influence of gold and silver — gold for the gray matter in nerve tissue and silver for the white matter — adds another layer of interaction with the polarity of the body's electrical system.

The Figure-Eight Circulation and the Body's Battery

The bioelectrical significance of the liver-kidney polarity is considerably amplified by a structural feature of the circulation that the readings describe in several contexts: the figure-eight pattern of blood flow through the body. Reading 1800-16 provides the foundational statement: "the circulation as is set up under such conditions, the change through the system is as the figure eight. The blood passing through the liver at least twice before going to and from the extremities." This is not simply a metaphor for the general circulatory loop but a specific anatomical claim — that the liver occupies a position in the circulatory architecture through which blood passes more than once in each complete circuit of the body.

Reading 2189-4 elaborates the two-loop structure noting that the circulation as is set up under such conditions, "kidneys, and to the lower portion of the body, and to the lungs, heart, and upper portion of the body, and the general throw-off from same." The lower loop of the figure eight thus runs through the liver, kidneys, and lower

body; the upper loop runs through the lungs, heart, and upper body. Reading 4300-5 confirms this pairing: "the circulation produces in its course the general form of a figure eight, passing then we see twice through liver and heart forces" — with the liver and heart as the respective organizing centers of the two loops. Reading 4580-1 situates the figure-eight in the broader circulatory context, noting that "blood thrown from pulmonaries and heart circulates as within the figure eight," and linking the slowing of this deep circuit directly to capillary and lymphatic congestion at the periphery.

The bioelectrical implications of this architecture for the body's battery are significant. If blood passes through the liver at least twice per complete circuit, the positive pole of the body's battery does not impress its electrical charge on the blood in a single pass — it does so repeatedly. Each transit through the liver-kidney axis re-engages the anabolic-catabolic polarity described in the preceding sections and recharges the blood with the vital electrical quality that reading 369-5 identifies as being impressed upon "each CELLULAR UNIT CREATED IN THE BLOOD STREAM ITSELF." The figure-eight architecture thus transforms the body's battery from a single filtration point into a continuously recirculating charging system, with the blood returning to the generator at least twice before completing its circuit of the body.

The figure-eight model also structurally couples the two loops of the circulation in a way that explains the readings' repeated clinical observation that hepatic disturbance produces pulmonary and cardiac effects, and vice versa. Reading 4300-5 makes this explicit: when the blood becomes "super-heated by any undue action, the calling, or filling, of liver or of lung gives depression in the left side, upper portion of lung, dilating heart." Because the liver and heart are the organizing centers of adjacent loops sharing a common

crossover, pathological loading of one propagates through the shared circuit to the other. This is the anatomical basis for the four-organ ensemble described at the opening of this section — the heart, lungs, liver, and kidneys do not merely cooperate as independent organs but are structurally integrated by the figure-eight architecture of the circulation itself.

The crossover point of the figure eight — where the two loops intersect — is located by reading 1800-9 at the umbilical center. The attachment of the wet cell's larger plate to "just above and to the left of umbilicus, gives that central vibration to the body," because this is "where the double circuit, as it were, of vibration in figure eight comes to body ... for as is seen in all bodies, when in the embryo state, all vibration enters from the central portion of body." The umbilical center is thus not merely the site of the umbilical-solar plexus system (to be addressed in the following section) but the anatomical crossover of the figure-eight circulation itself. These two identifications — the umbilicus as vibratory center and the umbilicus as circulatory crossover — converge in the readings to make the umbilical-solar plexus region the body's primary bioelectrical node. It is the point at which the generative force of the body's battery, the vibratory reception of the lacteal system, and the structural coupling of the two circulatory loops all meet.

It should be noted that this figure-eight model does not map straightforwardly onto the modern understanding of the systemic and pulmonary circulations, which are conceived as two loops connected in series at the heart rather than as intersecting loops organized around the liver and abdomen. The readings appear to describe a circulatory architecture in which the liver and kidneys occupy a structural position that modern anatomy does not assign to them. The key term from the readings' perspective is "vibration in

figure eight" (1800-9) – alluding perhaps to a bioelectrical system (where the crossover point in the figure eight at the solar plexus is electrical rather than mechanical). This is the broader context of this discussion of the body's battery that raises numerous inherent open questions.

Carbon in the Readings: A Necessary Distinction

The relationship between the body's battery and the nervous system is further illuminated — and considerably complicated — by the readings' use of the term "carbon." A comprehensive search of the readings for passages in which carbon and nerve tissue appear together in the same context reveals that the readings use "carbon" in several distinct senses that must be carefully distinguished before any interpretation can be offered. To these must be added a further usage involving the wet cell battery. The six usages are as follows:

Carbon as respiratory gas. The most frequent usage — appearing numerous readings (132-1, 241-1, 2675-1, 4463-1, 4573-1, etc.) — treats carbon in the standard physiological sense of carbon dioxide. The blood carries carbon to the lungs where it is exchanged for oxygen, and the blood is thereby "carbonized" or "re-carbonized" for systemic circulation. This usage reflects the respiratory physiology of the Cayce readings' era and is not directly relevant to the storage battery concept.

Carbon as dietary and metabolic fuel. Several readings (87-1, 134-2, 257-1, 538-12) refer to dietary carbon — the fats, starches, and carbohydrates that supply the body's metabolic energy. Reading 87-1 states plainly: "we have a lack of carbon in this system; in other words, he needs more material food stuff in his system to be used up instead of using so much of his vitality." This usage parallels the battery concept — dietary carbon is the raw fuel metabolized to charge the body's battery — but is not itself the storage medium.

Carbon as metabolic ash and waste. Reading 464-31 defines toxic poisoning as "the ash of nerve and muscular forces still left in the system" — referring to carbon as the residue of cellular combustion that must be eliminated. Reading 303-39 describes these used forces as "ashes, dross, whatever we might term them, are as positive as grains of sand, as flecks of dirt or dust or carbon, of whatever would hinder." In this sense, accumulated carbon-ash is precisely what "runs down" the body's battery by obstructing the circulation and burdening the eliminative poles. This usage connects metabolic waste accumulation directly to battery depletion.

Carbon as a structural element in the electrotherapeutic appliances. A fourth distinct usage concerns the physical material carbon as a structural element in the appliances themselves. Multiple readings prescribe early variants of the Radial Appliance constructed from carbon steel bars chilled in ice water — readings 195-15, 538-12, 4422-1, 4556-1, 4685-1, and 4855-1 all describe this construction. Reading 4556-1 explicitly calls this "Radio-Active Forces of Carbon Steel, with Cold Water," establishing the identity between these early prescriptions and the Radial Appliance as it evolved. Reading 4443-1 is especially notable. It prescribes an appliance (a variation on the standard Wet Cell Battery) with "two poles, one of copper, the other of carbon iron," to be attached at the umbilicus and the first cervical, with the stated purpose of retracing "the vibrations in system as to produce coordination in lymphatic and in sympathetic nerve circulation." The attachment points — umbilicus and first cervical — trace the axis of the umbilical and solar plexus system to the brainstem, a connection that will be explored in the following section. The carbon material in the appliance is thus structurally analogous to the carbon the readings identify in nerve tissue. Both appear to function as elements that can hold or transmit a vibratory electrical charge.

Carbon as a clarifying medium in the wet cell battery solution. A fifth usage emerges from the wet cell battery prescriptions and is distinct in character from all the above. In a substantial number of readings prescribing the wet cell, charcoal — most often specified as willow charcoal — is included as a routine ingredient in the charging solution alongside copper sulphate, sulphuric acid, and zinc. Reading 358-4 is the most explicit about the function this charcoal serves. The wet cell is to be prepared "carrying an element of charcoal that would make for clarifying the solution in its activity." The charcoal is not the source of the current; it is a clarifying medium within the electrochemical solution through which the vibratory forces are generated and transmitted. This is a functionally distinct role from the carbon steel structure of the RA, which operates as a solid electronized element rather than a solution additive. Notably, a distinct subset of readings explicitly excludes charcoal from the wet cell solution — in several cases with pointed emphasis — consistently in cases where iodine is charged directly into the appliance (e.g., readings 1146-1, 3163-1, 3223-1, 3275-1, 5120-1, 5169-1, 5301-1). This conditionality confirms that the charcoal serves a specific function that is not universally required and may in certain therapeutic contexts be contraindicated.

Reading 358-4 is also notable beyond the charcoal question for containing one of the clearest statements in the readings linking the design of the wet cell directly to the body's intrinsic bioelectrical polarity. The poles of the appliance, the readings explain, are to be "of different metals, so that the vibration conforms to the circulation or electrical influence that is created by the activity of fermentation and assimilation in a physical body." The wet cell's metallic polarity is explicitly designed to mirror the body's own electrochemical polarity — the polarity generated by the opposing processes of assimilation and fermentation that characterize the liver-kidney axis

described throughout this section. Thus the body's battery is understood, in the readings' own framework, as a real electrochemical system whose polarity can be interfaced with by an external device constructed on analogous principles.

Carbon as the neural storage battery. The sixth and most conceptually significant usage appears in a single reading which must be quoted for its context:

The body itself, the whole body, is not in as good condition to rebuild as we have had before, because we find the carbon of the body, or the storage battery of the body, which we have of course in the nerve tissue in the gray and white matter, is below par and below normal, hence, the body is in a good deal worse condition than we have had. (5707-1)

This is the only reading that directly equates the body's carbon with its storage battery and locates that storage battery in the gray and white nerve tissue. It must be acknowledged as an isolated statement. Nevertheless, it is consistent with a broader pattern in the readings in which the white and gray matter of the nervous system carry their own intrinsic polarity (e.g., 907-1, 3602-1), and in which battery depletion is expressed first and most acutely as nerve energy exhaustion at cerebrospinal-sympathetic junctions (e.g., 2538-1, 3130-1, 4069-1).

Reading 5707-1's identification of neural carbon as the storage battery suggests a functional architecture in which the body's battery with its liver-kidney polarity operating through the blood — functions as the generator, while the carbon-rich gray and white nerve tissue functions as the storage medium that receives, holds, and releases the generated energy on demand. This is directly analogous to the structure of a conventional electrical system, in

which a generator charges a storage battery, and the storage battery in turn powers the various circuits of the system as needed. The circuits in this case would be the cerebrospinal and sympathetic nerve systems and their coordination centers throughout the spine and abdomen.

Several lines of evidence support the plausibility of this generator-storage model, even if they do not confirm it outright. Reading 87-1 links carbon deficiency specifically to nerve tissue weakness and depleted vitality, suggesting that adequate carbon supply is necessary for the neural storage medium to function. Readings prescribing the Animated Ash (carbon ash) — particularly 1124-2, which states that the ash activates "the very atomic structure of the nerve forces of the body as applied to its circulatory system in blood as well as nerve forces" — suggest that exogenous carbon introduced therapeutically can interact directly with the nerve force system, potentially replenishing the neural storage medium. The structural use of carbon steel in the RA, which the readings describe as becoming "electronized by ice or cold or water" (1800-4), raises the question of whether the appliance's carbon core operates on a principle analogous to the body's own neural carbon storage — functioning as an external correlate or supplement to the body's depleted internal storage medium. And the charcoal sometimes included in the wet cell charging solution, where it functions to clarify the electrochemical medium, extends this pattern into a third appliance-related context. Carbon appears, across all three — Radial Appliance structural core, Wet Cell Battery solution, and neural tissue — as a medium associated with the holding, clarifying, or transmitting of electrical or vibratory force. Whether this recurrence reflects a single underlying principle operating at different levels, or three genuinely distinct phenomena that happen to share a material

identity, is a question the readings do not resolve explicitly and is therefore speculative.

The Battery, Assimilation, and Glandular Function

The readings also establish a clear relationship between the state of the battery and the processes of digestion, assimilation, and glandular activity. Reading 3123-1 identifies the liver and kidneys as "the sources of the energy" and notes that the battery's depletion involves "the inability of that energy to be aroused in the activity of the secretions of the liver, the pancreas, the spleen, sufficient activities in the gastric flow of the stomach." Reading 2937-1 frames the liver's anabolic role in terms of its secretion: "a lack of the liver secretion supplying elements in the assimilation of foods to form stamina in the nerve energies of the body." Reading 3026-1 extends this to the cellular level, describing the liver's role in producing "through that assimilated the ability for reproduction of self, especially in the cellular force and the lymph and emunctory circulation, that replenishes nerve energies."

This chain of dependency — from dietary intake, through assimilation in the digestive tract, through liver secretion, to the charging of the body's battery, to the generation of nerve energies, to the coordination of the cerebrospinal and sympathetic systems — constitutes the readings' basic account of how vitality is produced and maintained in the physical body. Disruption at any point in this chain will eventually manifest as battery depletion and its after-effects.

Reading 908-1 provides an important clinical illustration that connects the body's battery directly to the lacteal system — the lymphatic capillaries of the small intestine — in a passage that anticipates the discussion of broader bioelectrical systems to follow. In this case, the disturbance between "the positive and negative

poles of the system — or in the hepatic circulation" has produced, "in the body — especially in the lacteal area and about the umbilicii center — a drying, or a tendency for the adhering together of the ducts in the lacteal area." The consequence is progressive impairment of intestinal assimilation, abnormal peristaltic activity, and systemic toxic accumulation. This reading makes explicit what several others imply. The body's battery and the lacteal-abdominal plexus system are functionally coupled, with disturbance in one producing disturbance in the other.

The Role of the Radial Appliance in Relation to the Body's Battery

Given this framework, the therapeutic logic of the Radial Appliance in battery-depleted states becomes more clear. Reading 5304-1 prescribes the Radial Appliance directly for a case of depleted battery: "Here we may add energies by the low vibrations from the Radio-Active Appliance which uses the energies of the body rather than other influences." The Radial Appliance does not generate its own electrical energy — the readings insist upon this — but rather acts as a "radio-magnet" (1800-28) that redistributes and equalizes the body's own vibratory forces. When the battery is depleted and the poles have lost their equilibrium, the Radial Appliance's equalizing function may serve to restore the balance between them — not by charging the body's battery from outside, but by normalizing the flow of the body's existing energies through the circulatory and nervous pathways that connect the poles.

Reading 3863-1 explicitly links the vibratory intervention of the appliances to the restoration of hepatic polarity: "the liver and the kidneys in their activity act as poles in the system, a positive and negative force — and through the diversion of these conditions through that vibration, as we see, would set up better." The vibration

of the appliance works upon the poles themselves, adjusting their functional relationship. This is consistent with the broader principle stated in reading 4642-1, that the "improper vibratory rate between kidneys and liver" is itself a pathogenic condition correctable by vibratory intervention.

Reading 4812-1 proposes direct electrification of the poles in extreme cases: "Anything to stimulate the opposite pole of kidneys and liver. Take it through electrodes." While the specific appliance is not named here, the principle is clear — electrotherapy operates directly on the polarity of the hepatic system to restore its generative function.

The carbon steel core of the Radial Appliance, which the readings describe as becoming "electronized by ice or cold or water" (1800-4), may function as an external correlate of the body's own neural carbon storage medium — a question examined in the Carbon section above. The Radial Appliance's alternating wrist-ankle attachment protocol is itself grounded in the figure-eight circulatory architecture. Reading 1179-4 makes explicit that the vibratory forces of the body "move — as might be roughly described — as the figure eight," and that the attachment point first connected becomes the positive pole by the very setting up of the appliance's magnetic forces. Alternating the attachments across successive treatments thus works with the figure-eight pattern rather than imposing an external circuit upon it.

Radial Activity in the Body

Note: Due to the frequent references to the Radial Appliance and its physiological activity in this section, the following discussion of "radial activity" relates directly to the application and theory of the appliance and thus to the operation of the body's battery.

Throughout the physical readings, the term *radial* appears consistently in a specific physiological context. The spinal ganglia and plexuses are described as centers from which nerve energy, blood supply, and vibratory force *emanate outward* to the organs and tissues they govern. The readings speak repeatedly of "radial plexuses," "radial centers," and "radial forces" in precisely this architectural sense — from the 9th dorsal as "the radial activity to the liver and kidneys" (2735-1), to the "centers from which the radial activity of the functioning of the organs themselves" are governed (1183-2), to "the radial center through which all forces of the body carry those impulses to the central brain" (241-1). Each major spinal plexus is, in the readings' framework, a hub from which vibratory and nervous energy radiates centrifugally to a defined territory of organs — the hub-and-spoke architecture of the nerve system expressed in a single consistent term.

Beyond the nerve plexuses, the readings describe the body's own intrinsic bioelectrical emanation as its "radial activity" — explicitly distinguishing it from any externally applied force. Reading 325-56 describes disease as "an overcharging in local portions of the radial activity of electronic forces (of the system, not from the external use of any)" and identifies the therapeutic goal as producing "coordination of this radiation or radial activity in the system." Reading 844-1 elaborates: "highly radial activity, or some portions of the body becoming too much overcharged with electrical forces as from the body itself, others become then too undercharged and slow the circulation." The body's own radial activity — its intrinsic bioelectrical field distributed through the nerve system — is what health maintains in proper balance and what disease disrupts.

It is in this context that the name "Radio-Active Appliance" is best understood. Reading 337-1 uses "radial," "radiation," and "Radio-

Active Appliance" in immediate sequence, stating that the appliance works with "the vibratory forces as are **radial** from the central nervous system." A separate business reading (257-36) lists "Radio or **Radial** Operative Forces" as equivalent terms for the medium of radio transmission — treating radio force and radial force as expressions of the same principle: energy spreading outward from a center to all points simultaneously, which is precisely how a radio transmitter operates physically. The appliance is "radio-active" in this sense — active with and through the body's own radial force — not in the modern nuclear sense that the term unfortunately now carries. "Radial Appliance" is therefore not merely a convenient alternative name but an accurate rendering of the readings' own physiological vocabulary, grounded in the specific meaning the readings assign to radial activity as the body's intrinsic centrifugal bioelectrical emanation. Thus physiological radial activity is relevant to the normal functioning of the body's battery and its therapeutic maintenance.

Section 2: The Umbilical-Solar Plexus Network

Introduction

The battery of the body — the four-organ ensemble of heart, lungs, liver, and kidneys with its hepatic polarity at the core — is the body's primary generator and storage system for vital energy. But the readings describe a second, anatomically distinct system that operates in close relationship to the battery and that is, in many respects, the more immediate interface through which the electrotherapeutic appliances work. It is the umbilical-solar plexus network and its associated abdominal nerve plexus centered near the navel and governed by what the readings call the solar plexus brain.

These two systems — the body's battery (heart, lungs, liver, and kidneys) and the umbilical-solar plexus network — are not the same thing. They are parallel and interdependent. Disturbance in one consistently produces disturbance in the other, as illustrated vividly in reading 908-1, where hepatic polarity failure leads directly to adhesions in the umbilical-lacteal area. But they perform distinct functions within the body's broader bioelectrical framework. Where the body's battery generates and stores vital energy through metabolic polarity, the umbilical-solar plexus network is the primary channel through which elemental and atomic vibrations are assimilated into the body and distributed to the nerve systems and glands. It is this second system that is most directly engaged when therapeutic appliances are used with a solution jar carrying vibratory medicinal properties into the body.

Umbilical Center of Vibratory Assimilation

One of the readings given on the construction and use of the electrical appliances contains this evocative excerpt describing the vibratory force passed to the body when connected to the device:

In passing through this (force connected with the body) vibration as set up, each partakes of that of the chemical through which it passes, and is distributed to the body from that center of the body in solar plexus brain, or from those centers about the umbilicus, which are the electronic and atomic vibratory radiations of a human body. (1800-15)

This passage is of foundational importance. It establishes several principles simultaneously. First, the vibratory forces associated with the appliances carrying a chemical solution in the solution jar are not simply delivered to the body mechanically — they are assimilated through the solar plexus brain and the centers about the umbilicus.

Second, these umbilical centers are characterized as "the centers of the electronic and atomic vibratory radiations of a human body" — not merely of one patient, but of a human body generically. Third, the distribution of vibratory forces from the solution occurs through this abdominal center, not directly through the spinal cord or the cerebral brain. The solar plexus brain is thus the primary receiving and distributing node for vibratory electrotherapy.

Reading 1800-15 further specifies how the vibratory solutions of medicinal elements works in the nerve system:

In the nerve system, the brain is the head, and the active force through which all the conscious sensory consciousness is received ... When the blood becomes deficient, or anemic, the addition of iron, or of gold, or silver, in various forms or various conditions, adds, through this electronic atomic force, that same action in that portion of the system that creates that reaction in the building or plasm cell in the system as is created in the gland by the action of the nerve system carrying that variation as seen. (1800-15)

The vibratory properties of substances (e.g., gold, silver, iron, iodine, camphor) carried in the solution jar are absorbed not as chemical compounds in the conventional pharmacological sense, but as electronic-atomic vibrations that replicate within the body the same forces that the glandular system normally produces through the action of the nerve system. This is a profoundly different model of therapeutic action from standard pharmaceutical absorption. The umbilical-solar plexus network is the pathway through which this vibratory assimilation occurs. This pattern is established during gestation as the fetus develops.

The Pineal, Solar Plexus, and Umbilical Connection

The basis for the astounding claims in the reading excerpts is grounded in fetal development as explained in a series of readings for the Glad Helpers healing group. Reading 181-57 was provided in response to their seeking to understand the endocrine system, outlines the source, development, anatomy, and physiology of the vibratory system of the body. Essentially, the group wanted the answer to a basic question: "Where is the dwelling place of the soul in the physical body? What is the connection or center through which the mind and the soul function, that makes one individual a devil and another a saint?"

The answer they received in the foundation for the body-soul connection as a psycho-neuro-endocrine network (the pineal system) – a concept that was elaborated in numerous other readings, mostly from that same dedicated group. With regard to the present section, the pineal system is THE primary vibratory system of the body for it is through vibration that the physical body maintains connection to the soul through mental and spiritual centers. For the study group, this was condensed into a few sentences describing the fetal development and birth:

Ye have gained that the first movement of same [embryo/fetus] physically reaches out and becomes the brain, through which the pineal in its activity brings its physical development; and that it is related to the mind of the body and the environs of the body supplying physical activities to that developing physical entity. Ye know that it reverts then to the brain of the nervous system, to the solar plexus center, and then reflexes through its own MENTAL activity to the physical forces of the still developing body. Ye know that when such a body has developed, when gestation has been completed

and it becomes an entity in itself, - because of its center through which all physical and mental impulse has passed, - it is then cut asunder - and yet functions on.
Why? How? (281-57)

From this rather dense exposition, here are three key points:

1. The pineal brings about physical development in coordination with the mind of the mother.
2. The solar plexus center (or "solar plexus brain" in 1800-15) plays a crucial role in the physical development of the fetus.
3. When gestation is completed, the umbilical cord is "cut asunder," the fetus becomes a distinct entity, and the solar plexus center "through which all physical and mental impulse has passed ... functions on" running inconspicuously in the background, so to speak, as a key node in the vibratory system by which the soul is connected to the body.

Throughout the lifespan of the human entity, the umbilical-solar plexus network remains available as a portal to the pineal system and its healing capacity that created the body during gestation.

The Umbilicus as Bioelectrical Center

The readings' consistent placement of the nickel electrode (the solution-carrying anode) at the umbilical area in Wet Cell applications — and the description in 1800-15 of "those centers about the umbilicus" as "the centers of the electronic and atomic vibratory radiations of a human body" — suggests that the umbilicus and its associated nerve and lymphatic structures constitute a bioelectrical center of particular significance that deserves explicit treatment.

Thus the umbilical center in the readings is not simply a convenient attachment point for the electrode. It is described as the site through

which the vibratory properties of solutions are received and distributed. Reading 4443-1, discussed previously, prescribes an appliance with plates attached specifically at the umbilicus and at the first cervical, with the stated purpose of retracing "the vibrations in system as to produce coordination in lymphatic and in sympathetic nerve circulation." The umbilicus-to-cervical axis traces the full length of the body's central bioelectrical channel — from the abdominal assimilation center at the umbilicus to the first cervical — and the appliance in this case is explicitly used to restore coordination between the lymphatic and sympathetic systems along this axis.

This is suggestive of a bioelectrical anatomy that runs vertically through the body along the sympathetic chain and its abdominal ganglia, with the umbilical-solar plexus center as its functional hub. The modern concept of bioelectrical body plans — in which the body maintains a spatially distributed pattern of electrical information that guides development and regeneration (Levin, 2014) — provides a possible interpretive framework for understanding how the umbilical center might function as a bioelectrical organizing node for the entire abdominal system.

During gestation, the umbilicus is the site through which the developing organism received its primary nutritive, circulatory, and energetic supply from the mother. The persistence of the umbilical center as a bioelectrical node in the adult body may reflect an underlying developmental reality. The abdomen retains the memory, as it were, of the embryonic body's primary energy-receiving center. This would be consistent with the concept that regenerative electrotherapy echoes embryological energy patterns — "putting the system into the same energy patterns that were utilized to develop the embryo in the womb" (McMillin, 2002a, p. 4).

The Solar Plexus Brain: The Abdominal Center of Coordination

The readings consistently refer to the solar plexus as a "brain" — an abdominal center of nervous coordination and intelligence whose functions are distinct from, yet complementary to, those of the cerebral brain. This is not a poetic flourish. The readings treat the solar plexus brain as a structural and functional reality that mediates between the deep visceral processes of the body and the vibratory, glandular, and nerve systems.

Reading 4511-1 connects the solar plexus explicitly to the normalization of metabolic polarity: restoring the vibration of the body's battery requires "giving to the solar plexus ITS proper reaction." This positions the solar plexus as a regulatory center whose proper functioning is essential to the balance between the hepatic poles — it is not merely a passive relay but an active participant in the body's energetic equilibrium.

Reading 4909-1 describes the anatomical connections that make this coordination possible. Correcting the liver-kidney imbalance requires exercise that will "enliven the glands of the kidneys and of the muscles and nerve tissues feeding to these, the lumbar and solar plexus, 1, 2, and 3rd cervicals." The solar plexus is here cited in direct anatomical association with the lumbar nerve centers that supply the hepatic organs — indicating that the solar plexus is the nerve hub through which the body's battery and the abdominal assimilating system are functionally coordinated.

The relationship between the solar plexus and the cerebrospinal system is given clinical specificity in reading 2642-1, where "those applications that upset the hypogastric and pneumogastric nerve forces caused (and cause) the reflex from the assimilating center TO the central nervous system." The "assimilating center" — the umbilical-solar plexus complex — has a direct reflex pathway to the

central nervous system through the vagus (pneumogastric) and hypogastric nerves. Disruption of the assimilating center is not a local abdominal problem but a systemic neurological event. Reading 2642-1 also notably refers to "the seven centers of propagation" through which the stability of the entity force is maintained, and describes the heart, lung, liver, and kidney circulation as sustained through these centers — linking the umbilical-solar plexus system directly to the four-organ battery ensemble via the propagation centers.

Reading 2259-1 identifies "the sympathetic system or solar plexus brain force and center" as the embodiment of the body's primary vibratory subsystem. In this framework, the solar plexus brain is not merely one ganglion among many in the autonomic nervous system but the governing center of the sympathetic vibratory system as a whole — the abdominal counterpart to the cerebral brain of the cerebrospinal system.

The Ninth Dorsal: The Spinal Gateway

The connection between the umbilical-solar plexus network and the spinal nerve centers is most consistently located, across many readings, at the ninth dorsal (thoracic) vertebra. This spinal level appears repeatedly in the readings as a critical junction point — both as a site where disturbance produces systemic effects through the lacteal and assimilating system, and as a therapeutic attachment site for the appliances.

Reading 3130-1 describes depletion of the body's battery as producing lesions "along almost every center where the cerebrospinal and sympathetic are — in the main centers — joined," specifying "the third cervical, first, second, and third dorsal, ninth dorsal and the lumbar axis particularly, and in the ileum plexus." The ninth dorsal is placed here in the company of the ileum plexus

— the nerve network of the lower small intestine that is anatomically contiguous with the lacteal system — as a primary site of cerebrospinal-sympathetic junction impairment in battery depletion.

Reading 3060-1, prescribing the violet ray for battery depletion, specifies its application pattern: "beginning at the head extend along the right side to the 9th dorsal, then on the left side in the same manner. Then commence at the feet and go up the body, along the sciatic nerve, then along the spinal cord — first on one side, then the other — up to the 9th dorsal." The ninth dorsal is both the upper and lower boundary of this therapeutic circuit — a node of convergence. The "contraction or tension" felt around the small intestines in the same case is described as arising from vital forces "sort of at war — in these particular centers where we have indicated the applications should be made — about the 9th dorsal, but sympathetically affecting the upper cervicals, as well as the lumbar and sacral axis" (3060-1). Abdominal tension in the umbilical lacteal region and spinal impingement at the ninth dorsal are presented as the same functional disturbance viewed from different anatomical vantage points.

The therapeutic significance of the ninth dorsal as an appliance attachment site is confirmed in the direct-circuit application of the Wet Cell described in reading 307-17 as "directly THROUGH the body, - that is, the one plate attached to the 9th dorsal, the other to the umbilical and lacteal duct plexus." This application was intended to address a depleted system in which "the BATTERIES of the body are rather rundown." Alternate treatments going to the extremities to equalize the circulation in the standard radial pattern were also prescribed. The 9th dorsal-to-umbilical-lacteal circuit thus functions as the direct-charge pathway for the body's battery, while the extremity circuit equalizes the broader bioelectrical field.

The anatomical rationale for the ninth dorsal's significance is grounded in the nerve supply to the abdominal viscera. In standard neuroanatomy, the splanchnic nerves arising from approximately T5 through T12 (the fifth through twelfth thoracic vertebrae) constitute the primary sympathetic supply to the abdominal organs, including the liver, stomach, small intestine, and kidneys. The ninth thoracic level lies at the center of this supply and is particularly associated with the celiac (solar) plexus via the greater splanchnic nerve. The readings' consistent selection of the ninth dorsal as the critical spinal gateway to the umbilical-solar plexus network is thus anatomically coherent in conventional terms, even as the readings' account of what happens through that gateway extends well beyond what modern neuroanatomy would describe.

Vibratory Assimilation: The Parallel System

Reading 1800-15's description of the solar plexus brain as the center through which vibratory forces from the solution jar are "distributed to the body" implies a functional mechanism that operates alongside — but distinct from — the body's battery. The battery generates and stores vital energy through the metabolic polarity of liver and kidneys. The umbilical-solar plexus system assimilates and distributes vibratory-elemental forces through the abdominal nerve network and the lymphatic lacteals. Both systems contribute to the body's vital energetic economy, but they do so through different pathways and by different means.

The parallel nature of these systems is reflected in the different appliance applications used to address each. The Wet Cell Battery applied in the standard configuration — nickel electrode to the umbilical area, copper electrode to a spinal attachment site, with solution jar in the circuit — works primarily through the umbilical-solar plexus system. The vibratory properties of the solution are

assimilated through the umbilical-solar plexus center and distributed via the sympathetic nerve system to the glands and nerve plexuses throughout the body. The alternative "direct circuit" application (9th dorsal to umbilical-solar plexus, 307-17) appears to work more directly on charging the body's battery by creating a current pathway through the abdominal center.

The Radial Appliance, in its most common "preventative" application, operates through the extremities working as a "radio-magnet" (1800-28) that equalizes rather than charges. It appears to work primarily at the level of the broader bioelectrical field — the circulatory and magnetic equilibrium of the body as described previously. Its connection to the umbilical-solar plexus network is less direct but present. Reading 718-1 notes that the Radial Appliance is prescribed when "those in the liver with the pancreatic effects are in excess," specifically because it will equalize conditions "through the lacteal area" via the extremity attachments. The Radial Appliance's equalizing effect on circulation thus reaches the lacteal system indirectly, through the normalization of the broader bioelectrical field.

The distinction between these two modes of appliance action — the Wet Cell's direct vibratory assimilation through the solar plexus center, and the Radial Appliance's indirect equalization through the extremities (when used in the "preventative mode") — is clinically important and represents one of the key practical questions in applying the readings. Reading 5304-1, as noted in Section 1, prescribes the Radial Appliance specifically to "add energies by the low vibrations from the Radio-Active Appliance" when the battery is depleted. But reading 307-1 prescribes the Wet Cell in the direct-circuit pattern precisely when the charge to the battery's central organs needs to be restored more forcefully. The two appliances are

not interchangeable; each accesses the body's bioelectrical system through a distinct pathway.

Section 3: The Vibratory System of the Body

Introduction

The preceding sections have established two structural components of the body's bioelectrical system: the battery of the body that generates and stores vital energy through the metabolic polarity of liver and kidneys, and the umbilical-solar plexus network through which vibratory-elemental forces are assimilated and distributed. Both systems operate within a broader framework that the readings identify as "the vibratory system of the body" (957-2, 2365-1)— a concept that echoes across many readings as the primary characterization of the body's bioelectrical nature in its most comprehensive sense.

This section addresses that broader framework directly. It examines what the readings mean by the vibratory system, how this applies in the context of neuroendocrine anatomy and physiology, and how the foundational principle of electronic vibration at the atomic level underlies all of these systems. It also addresses the pineal system as the meta-vibratory coordinator that bridges the physical vibratory systems to the mental and spiritual dimensions — a dimension that cannot be omitted from any complete account of bioelectricity in the readings.

Vibration and the Human Body

The recognition that all matter is energy forms the foundation for understanding how human beings can be considered dynamic energetic systems. Through his famous equation, $E = mc^2$ proved to scientists that energy and matter are dual expressions of the same universal

substance. That universal substance is a primal energy or vibration of which we are all composed. (Gerber, 2001, pp. 39-40)², Albert Einstein

According to quantum theory, matter is composed of rotating particles with different vibrational frequencies and its essence is energy. The human body can be considered as a frequency assemblage or energy atlas. (Wang et al., 2024, p. 2)

Vibrations are oscillations that occur around an equilibrium point, capable of both beneficial and harmful effects on living systems. Vibrations propagate in various mediums – such as air, water, a branch of a tree, a leaf, or soil – and the tissues and organs of the human body. (Oroszi et al., 2020)

Vibration theory can be traced back to Pythagoreans in the fifth century BC, in association with the theory of music and the theory of acoustics. These early observations of the natural frequency of vibrating systems proved that it is a system property and that does not depend on the excitation. Pythagoreans determined the fundamental natural frequencies of several simple systems, such as vibrating strings, pipes, vessels and circular plates (Dimarogonas, 1990).

Modern medical research has documented the role of vibration in the human body at various levels of physiological function, and particularly with regard to bioelectricity. Every atom generates its own electric field due to the movement of electrons. When atoms combine to form molecules, cells, and tissues they create complex electric fields.

Frequency medicine, an emerging cross-discipline of both quantum mechanics and biomedicine, is a promising turning point for biomaterials and medicine

developing from the matter level to the energy level. Recognizing the pivotal role of molecular vibrational frequencies in resonant energy coupling and transmission underscores the potential of frequency medicine to precisely regulate biomaterial vibrations, influencing interactions and reactions in living organisms. (Wang et al., 2024, p. 1)

Research on brain oscillations has revealed the critical role of coupled oscillators, leading to questions such as how many frequencies are there, what are the coupling principles, and whether body oscillations follow similar coupling principles. This research suggests a “binary hierarchy brain body oscillation theory. Its central hypotheses are that the frequencies of body oscillations can be predicted from brain oscillations and that brain and body oscillations are aligned to each other.” (Klimesch, 2018) Future medicine is the medicine of frequencies (Abrams, 2024). “Frequency medicine is based on the resonance theory and employs electromagnetic or mechanical waves of specific frequencies to diagnose or treat health problems ...” (Wang et al., 2024, p. 2)

The Body as Electronic Vibration: The Foundational Principle

The readings' most fundamental statement about the nature of the human body as an electrical system appears in reading 1800-4, which serves as the theoretical cornerstone for understanding all of the bioelectrical systems discussed in this appendix. The human body is made up of:

... electronic vibration, with each atom and element of the body, each organ and organism of same, having its electronic or unit of vibration necessary for the sustenance of, and equilibrium in, that particular organism. Each unit, then, being a cell or a unit of life in itself, with its capacity of reproducing itself by the first

form or law as is known of reproduction, by division of same. When any force in any organ, any element of the body, becomes deficient in its ability to reproduce that equilibrium necessary for the sustenance of the physical existence and reproduction of same, that portion becomes deficient, deficient through electronic energy as is necessary. This may become by injury, by disease, received from external forces; received from internal forces by the lack of eliminations as are produced in the system, by the lack of other agencies to meet the requirements of same in body. (1800-4)

Several principles of major importance are stated here simultaneously. First, the body is constituted at the most fundamental level by electronic vibrations — not merely by chemistry or mechanics, but by vibratory electrical forces operating at the atomic and subatomic level. Second, every unit of the body — atom, element, organ, organism — has its own characteristic electronic unit of vibration, necessary for its sustenance and its equilibrium. Third, health at every level is defined as the maintenance of that characteristic vibratory equilibrium. Disease is the failure of any unit to maintain or reproduce its proper equilibrium through electronic energy. Fourth, this failure can arise from either external causes (injury, disease) or internal causes (failure of elimination, lack of supporting agencies).

This is a complete theory of health and disease stated in a few sentences. It establishes that the bioelectrical systems described in this appendix — the body's battery, the umbilical-solar plexus network, neuroendocrine anatomy and physiology — are not the body's electrical aspects in addition to its chemical and mechanical ones. They are the body's fundamental nature, of which the chemical and mechanical are the downstream expressions. When a portion of

the body "becomes deficient through electronic energy," all its chemical and mechanical functions will fail as a consequence.

Reading 197-1 extends this principle from the individual body to a universal principle. The therapeutic logic of the appliances rests upon "the atomic forces as set up in each vibratory system of the body itself." And in reading 1800-4, the practical therapeutic implication of the vibratory theory is stated plainly: "in this particular condition ... excess of vibration prevents the nominal or normal vibration of the sensory or vibratory system for the auditory forces of the body." Disease is vibratory imbalance — either deficiency or excess — and the appropriate intervention restores the proper equilibrium.

The Neurological Structural Substrate of the Vibratory System

Human bioelectricity is commonly associated with the nervous systems of the body. Nerves are metaphorically portrayed as wires, conducting electricity between the brain and organ systems of the body. From this view bioelectrical vibration is typically represented as oscillations in brain activity (EEG), heart function (EKG), or muscle activation (EMG). This approach can be applied to almost any tissue or organ in the body. Everything in the body vibrates!

Vibration in the sensory nervous system is obvious in hearing where vibrations in air are translated into patterns of nerve impulse for processing in the auditory lobes of the brain. Similarly vision is based on the sensation of vibratory patterns of light, and so forth. All of this vibratory neural activity is associated with what the readings call the cerebrospinal nervous system with its cerebral brain as the center of conscious sensory processing that allows for conscious experience and interaction with the physical environment.

The other great nervous system of the body described in the readings – the sympathetic system with its solar plexus brain as the center of visceral and vibratory coordination, is proclaimed the “the brain manifestation of soul forces in the body” (4566-1). Thus the vibratory dimensions of sympathetic system activity are more expansive and accessible for vibratory interventions due to its unique holistic anatomy and physiology.

The Sympathetic System

The readings consistently assign the sympathetic system a primary role in the body's vibratory coordination. Reading 2259-1 identifies "the sympathetic system or solar plexus brain force and center" as a key node in the body's vibratory system. This is not an incidental phrasing — it reflects the readings' consistent treatment of the sympathetic system as part of the body-wide vibratory network whose proper functioning is necessary for the coordination of all visceral, circulatory, glandular, and metabolic activity.

The sympathetic system's vibratory role is expressed in several ways across the readings. It is the system through which the vibratory forces of the appliances are distributed after being received at the solar plexus center (1800-15, as discussed in Section 2). It is the system whose coordination with the cerebrospinal system is most frequently disrupted in the pathological states the readings describe — with impingement at the spinal junction centers producing incoordination that manifests as battery depletion, glandular disturbance, circulatory imbalance, and neurological crisis. And it is the system most directly addressed by the Radial Appliance in its standard application to the extremities (i.e., "preventative" mode).

Reading 603-3 makes the sympathetic system's relationship to the Radial Appliance explicit. The appliance "aids in making for an equalization in the sympathetic or vegetative nerve system." The

equalization it produces is not merely circulatory — it is vibratory, restoring the proper tonal quality of the sympathetic network's oscillatory activity throughout the body. This is why the readings consistently recommend that the period of Radial Appliance application be used for meditation. As reading 920-10 states, "the application of the vibratory forces of the bodily function itself is brought more in accord by the unification of the circulatory forces to the extremities of the body ... As it produces coordination, so do the meditations — by the raising of the vibrations of self to communion with the activities of influences about the body."

The parallel between physical vibratory equalization and mental-spiritual attunement is not merely a pious addition to the physical therapy — it is presented as operating by the same principle. The appliance works with the body's vibratory forces from below. Meditation works with them from above.

The Spinal Centers as Vibratory Nodes

The spinal plexuses where the cerebrospinal and sympathetic systems meet are critical structural elements of the vibratory system's architecture. These junction centers appear throughout the readings as the sites where vibratory coordination is most vulnerable to disruption and most accessible to therapeutic intervention. Reading 3130-1, as noted in the previous sections, identifies the primary junction centers as "the third cervical, first, second, and third dorsal, ninth dorsal and the lumbar axis particularly, and in the ileum plexus." Each of these levels corresponds to a major plexus of the sympathetic system that governs a defined region of visceral and circulatory activity.

The readings use these spinal centers both diagnostically and therapeutically. Diagnostically, the pattern of spinal impingement reveals where in the vibratory network the coordination has failed

— and because the sympathetic system is organized hierarchically, with higher centers influencing lower ones and vice versa, impingement at one level typically produces cascading effects at others. Reading 4069-1 describes this cascade in terms that illuminate the battery concept from the previous section. Depletion of "the centers where the impulses from sensory system and the sympathetic nervous system coordinate with the cerebrospinal system" produces a fatigue that is indistinguishable from battery depletion — not because battery depletion and spinal incoordination are the same thing, but because each produces and amplifies the other.

Therapeutically, osteopathic and neuropathic manipulation of the spinal centers is consistently prescribed alongside the appliances — not as a separate treatment modality but as a necessary preparation and complement. The manipulation relieves the mechanical impingement that disrupts vibratory coordination at the junction centers. The appliance then works with the vibratory system that the manipulation has freed. Reading 1480-1 makes this relationship explicit. The osteopathic corrections "RELAX the system, so that — WITH the application of the low vibratory forces from the Radio-Active Appliance ... we create a normal balance between the upper and the lower pressures, the upper and the lower portions of the system as related to the vibratory forces of the body; by these two applications (the corrections AND the Appliance) being taken coordinately one with another."

This is an important clinical principle. The appliance works most effectively when the mechanical impediments to vibratory coordination have been addressed first. The appliance does not override spinal lesions — it works with the vibratory system that

remains operable after those lesions have been corrected or partially relieved.

Each Organ as a Vibratory Unit

Reading 1800-4's principle that "each organ and organism of same" has its own "electronic unit of vibration necessary for the sustenance of, and equilibrium in, that particular organism" has direct implications for understanding both pathology and therapy. Each organ of the body — liver, kidney, heart, lung, nerve plexus, gland — maintains its functional integrity through the characteristic frequency of its vibratory activity. When that frequency is disturbed — whether by toxicity, impingement, inflammatory change, or energetic depletion — the organ's capacity to "reproduce that equilibrium necessary for the sustenance of the physical existence" is compromised.

This means that the battery of the body and the umbilical-solar plexus network (Sections 1 and 2) are themselves specific expressions of the general principle. The liver has its vibratory frequency, the kidneys have theirs, and their polarity relationship is in part a relationship between two organs whose characteristic frequencies operate in complementary opposition. The "improper vibratory rate between kidneys and liver" described in reading 5458-1 is therefore not merely a chemical or metabolic imbalance — it is a disruption of the frequency relationship between two vibratory units that normally operate in coordinated polarity.

Several readings describe this organ-level vibratory specificity in clinical terms. Reading 3863-1, prescribing electrical vibration for hepatic disturbance, notes that "the liver and the kidneys in their activity act as poles in the system, a positive and negative force — and through the diversion of these conditions through that vibration ... would set up better." The vibration acts on the poles as vibratory

units, restoring their characteristic frequency relationship rather than supplying a chemical or mechanical correction. Reading 1461-1 describes the Radial Appliance carrying gold as prescribed to address incoordination of the nerve systems by changing the vibrations "through the functioning of the glands and the vibratory system" — the glands being among the body's primary vibratory units whose proper frequency is essential to systemic coordination.

This organ-level vibratory specificity also underlies the readings' use of different chemical solutions in the Wet Cell Battery. Gold, silver, camphor, and iodine are not chosen for their conventional pharmacological properties but for their specific atomic vibrations — each metal or compound carrying a characteristic frequency that, when introduced through the vibratory assimilation system of the umbilical-solar plexus center, resonates with and reinforces the vibratory activity of specific organs, glands, or nerve tissues. Reading 1800-15 states this principle directly. The solution carried in the jar adds "plasm cell in the system as is created in the gland by the action of the nerve system carrying that variation as seen." The solution does not supply the gland's chemical product — it supplies the vibratory frequency that enables the gland to resume its own production.

The Pineal System: Meta-Vibratory Coordinator

The readings introduce a third level of vibratory organization above both the sympathetic and cerebrospinal systems: the "pineal system" — the neuroendocrine network centered on the pineal gland and its axis with the Leydig (lyden) gland, which the readings call "the seat of the soul." (See Appendix A)

The pineal system functions as a meta-vibratory coordinator — a system that integrates and regulates the other vibratory systems of the body while also mediating the interface between the physical

body and the mental-spiritual dimensions of the individual. Reading 464-4 describes its role in bodily coordination. Treatment was prescribed to correct "the vibratory rate set through the pineal gland, and the branches of same in each major ganglion along the spine." The pineal system's "branches" in each major spinal ganglion place it in direct structural relationship with the spinal nerve centers — and with the spinal attachment sites of the Wet Cell Battery. In this framework, the Wet Cell's spinal attachment points are not merely locations of convenient electrode placement but are the ganglion points of the pineal system's distributive network (i.e., "pineal centers").

Reading 179-1 provides a clinical illustration of how the pineal system connects the solar plexus, the umbilical center, and the epileptic episode: "the cycle of the vibration for, as we see, the pineal gland is affected. This affects directly that condition as produced in the cervical and in the lumbar as was experienced at the time of birth, with the umbilicus or navel center, and this cold, congestion, this improper healing of pressures through the central brain of body [solar plexus brain], that causes the disturbance." The pineal system, the traumatic birth experience, the umbilical center, and the solar plexus brain are here described as a unified causal chain whose disruption produces the epileptic crisis.

Reading 3676-1, that explains the function of Wet Cell when attached to the body, explicitly relates the primary spinal centers (the attachment sites) to the kundalini — the life force in its highest vibratory expression.

The small plate would be attached to three different centers alternately. The Appliance would be used for thirty minutes each day; one day attaching the small plate to the 3rd cervical, the next day to the 9th dorsal,

and the next day to the 4th lumbar. Be sure to rotate the attachments in this order. These are the three centers through which there is activity of the kundalini forces that act as suggestions to the spiritual forces for distribution through the seven centers of the body. (3676-1)

This connection, between the mundane application of a low-current electrochemical device and the highest vibratory forces of the body-soul interface, is one of the most striking structural features of the readings' bioelectrical framework. It suggests that the Wet Cell's therapeutic action, when properly applied at the spinal centers of the pineal system, is not merely rehabilitative but potentially regenerative in the deepest sense — capable of engaging the same forces that govern development, reproduction, and the body's most fundamental connection to the creative source of life itself.

This territory — the pineal system, the kundalini, the seven centers, and the body-soul interface — will be addressed in the following section. It is introduced here as the apex of the vibratory hierarchy that this section has been building toward: from atomic electronic vibration at the base, through organ-level vibratory units, through the sympathetic and cerebrospinal networks, through the solar plexus and its lacteal assimilation system, to the pineal meta-vibratory system that integrates all of these with the mental and spiritual forces of the entity.

The "Low Form of Electrical Vibration" and the Appliances

With the vibratory framework now established, the readings' characterization of both appliances as working with "the low form of electrical vibration" (141-1) can be understood more precisely. The body's bioelectrical system operates across a spectrum of vibratory frequencies — from the slow ionic rhythms of the body's battery at the bottom, through the oscillatory patterns of the sympathetic

ganglia and spinal centers, to the high-frequency activity of the sensory cerebrospinal system at the top, and beyond that to the still-higher frequencies of the pineal system. The appliances work with the low end of this spectrum — the subtle, body-level electrical forces that underlie the more obvious physiological processes.

This is why the readings insist that the Radial Appliance produces no electrical energy of its own but works with "the energies of the body rather than other influences" (5304-1). The Radial Appliance does not introduce a foreign electrical force into the body — it modulates the body's own vibratory forces through a process the readings describe as equalization, redistribution, or re-magnification. Reading 5743-1 describes it simply: "The activity of the Appliance, then, is to build that low form of energy (which is electrical in itself) as to build up in one extremity and discharge in the other." The circuit through the extremities draws the body's own low vibratory energy through the appliance, which — by virtue of being chilled and thereby "electronized" — subtly modifies and redistributes it.

The Wet Cell, by contrast, introduces a genuine (if extremely weak) direct current from its electrochemical reaction — typically in the range of 3×10^{-8} amperes when measured across the body's resistance (McMillin & Richards, 1994). This current, though far below the threshold of sensation, is within the range that researcher Robert Becker found to be physiologically meaningful in tissue regeneration (Becker & Selden, 1985). The Wet Cell's low DC current, combined with the vibratory properties of the solution carried in the solution jar, creates a therapeutic input that operates at the low-vibratory level of the body's electrical system while addressing the higher-level glandular and neural targets through the vibratory assimilation mechanism of the solar plexus center.

The readings occasionally note that high-vibratory electrical forces — the violet ray and similar devices — have a place in the therapeutic system, but they address different levels of the vibratory spectrum. The violet ray works primarily through the sensory-cerebrospinal level, stimulating the higher-vibratory nerve centers directly. The wet cell and Radial Appliance work at the low vibratory level that underlies all the others. The appropriate choice among these interventions depends on which level of the vibratory system requires attention — a determination that, in the readings, was made individually for each person based on the specific nature and location of their vibratory imbalance.

Incoordination as the Primary Pathological Category

The concept that unifies all the vibratory pathology described across the readings is incoordination — the failure of the nerve systems, the organ vibratory units, the spinal centers, or the glandular network to maintain their proper vibratory relationships with one another.

Incoordination is not a single specific disease but a functional category that encompasses the full range of disturbances described in the readings — from the subtle imbalance corrected by the Radial Appliance in a healthy person using it for stress management, to the catastrophic incoordination of an epileptic seizure. What unites these states is the failure of vibratory coordination between systems or between levels of the same system. The short circuit between the hepatic poles (Section 1), the adhesion of the lacteal ducts disrupting the solar plexus center (Section 2), and the impingement at the spinal junction centers (this section) are all specific expressions of incoordination at different anatomical locations and at different levels of severity.

This means that the therapeutic goal of the appliances — and of the broader treatment systems the readings describe — is always

fundamentally the same: to restore vibratory coordination at whatever level and location it has been disrupted. The specific appliance, solution, electrode placement, and adjunct therapies are chosen to address the specific site and nature of the incoordination. But the underlying principle is invariant. Health is vibratory coordination; disease is vibratory incoordination; and healing is the restoration of the proper vibratory equilibrium that allows each unit of the body to reproduce its own characteristic electronic balance.

Section 4: The Pineal System, the Seven Centers, and the Body-Soul Interface

A Note on This Section

The preceding sections have mapped the body's bioelectrical system from the atomic level through the organ-level battery, the umbilical-solar plexus assimilation network, and the sympathetic vibratory system. Each level has been grounded in a substantial body of reading evidence and, where relevant, in modern bioelectrical research. This section moves into territory that is more sparsely documented in the physical readings and more extensively addressed in the life and spiritual readings of the Cayce material — a space that is also, by the readings' own account, the most fundamental level of the body's bioelectrical organization.

The pineal system and the seven centers of the body represent the interface between the physical bioelectrical system and the mental-spiritual dimensions of the human entity. The readings are explicit that this interface is electrical in nature — that spirit, mind, and body interact through vibratory forces, and that the glandular and nerve centers along the spine are the physical structures through which this interaction occurs.

Introduction: The Apex of the Vibratory Hierarchy

In Section 3 the vibratory hierarchy of the body was described as a nested structure ascending from atomic electronic vibration at the base through the organ-level vibratory units, the sympathetic and cerebrospinal networks, and the solar plexus center, toward an apex identified as the pineal system. The pineal system is the readings' term for a neuroendocrine network centered on the pineal gland and its functional axis with the Leydig (lyden) gland — a system that the readings identify as "the seat of the soul" and as the primary coordinator of the body's relationship to the mental and spiritual dimensions of the entity. Appendix A discusses the pineal gland and its system in detail. Here the focus is on its electrical activity.

This is not a peripheral or optional element of the readings' bioelectrical framework. It is, in the readings' view, the most fundamental level — the one from which all the others derive their organization and their vitality. Reading 1299-1 states the foundational principle simply yet powerfully: "Life itself — to be sure — is the Creative Force or God, yet its manifestations in man are electrical — or vibratory." The creative force that is the source of life is expressed in the physical body through electrical-vibratory manifestation. The pineal system is the primary anatomical site at which this expression occurs — the transducer, as it were, through which spiritual life force becomes bioelectrical activity in the physical body.

The practical implications for the electrotherapeutic appliances are profound. If the appliances work with "the low form of electrical vibration" (141-1) that constitutes the body's bioelectrical foundation, and if that foundation is ultimately an expression of the creative life force acting through the pineal system, then the appliances — when properly applied — are not merely rehabilitative

physical devices. They are instruments that, in the right conditions and with the right attitudes, can interface with the body's highest bioelectrical centers and engage the regenerative forces of the creative life itself.

The Pineal-Lyden Axis: The Seat of the Soul

The readings describe the pineal gland and the Leydig (lyden) gland as constituting the "seat of the soul" — the anatomical locus where the soul's connection to the physical body is most directly expressed. Reading 294-142 states: "The spiritual activity ... is as the electron that is Life itself; but raised in power ... in the activities of the glands ... Hence these may literally be termed, that the pineal and the Leydig [lyden] are the SEAT of the soul of an entity."

The phrase "the electron that is Life itself" is significant. It does not merely use electricity as a metaphor for life — it identifies the electron, the fundamental unit of electrical charge and the carrier of bioelectrical current, as the expression of life itself in the physical dimension. The soul's activity in the body is electron activity — bioelectrical activity — raised in power through the glandular system. The pineal-lyden axis is where this raising occurs.

In modern anatomy, the pineal gland is a small midline structure in the epithalamus of the brain, known primarily for its production of melatonin and its role in circadian rhythm regulation. The Leydig (lyden) gland is the readings' term for a structure in the gonadic region — anatomically corresponding to the Leydig cells of the testes or their ovarian equivalent, though the readings appear to use "lyden" in a broader sense that encompasses an energetic center in the pelvic-sacral region associated with the gonads and adrenals. The readings' account of the lyden is substantially more expansive than any modern anatomical description, treating it as the primary reservoir and regulator of the body's life force:

The lyden and through the reproductive forces themselves, which are the very essence of Life itself within an individual. (281-3)

The spiritual arises from the centers in the lyden ... glandular forces that are as hidden energies, or the very nature of the creative or reproductive forces. There are the abilities of each center, each gland, each atom to reproduce itself within the body — which is the very nature of glandular reaction. (1468-5)

The lyden is the ground-level reservoir of the creative-reproductive life force; the pineal is the coordinating and integrating center that distributes this force through the body via the spinal centers. Between these two poles — lyden at the base, pineal in the brain — runs the axis along which the life force moves in its expression through the physical body. The seven centers of the body are the primary nodes along this axis.

Embryological Priority: The Lyden as the First Mover

The readings establish the priority of the lyden-pineal axis by locating its activity at the very inception of physical life. Reading 281-53 states: "Conceived, then the first movement is along that center or gland [pineal] ... [to] all of the centers of activity through which spirit first moves from the lyden — the center of the spiritual forces." At the moment of conception, the spiritual energy of the new entity moves from the lyden — the center of spiritual-creative force in the physical body — through the pineal and outward to all the centers of activity.

Reading 281-54 elaborates: the developing embryo expresses spiritual energy "through the channels of the aerial, but arises from the lyden — to be sure." The "aerial" here refers to the energetic channels — what might be understood as the bioelectrical field or

pattern through which the spiritual impulse is translated into physical form. The lyden is the source; the aerial channels are the medium; the developing organism is the expression.

This embryological priority has immediate relevance to the therapeutic use of the Wet Cell Battery. The regenerative therapies recommended in the readings "seem to function by putting the system into the same energy patterns that were utilized to develop the embryo in the womb" and that "the spinal and abdominal centers where the wet cell anodes are attached to the body correlate with the energy patterns associated with the early development of the embryo" (McMillin, 2002a). The Wet Cell's attachment at the spinal centers is not arbitrary — it targets the same bioelectrical nodes that were established by the lyden-pineal axis at the moment of conception and that remain as the primary energy centers throughout the life of the physical body.

The Seven Centers: Neuro-Glandular Nodes of the Pineal System

The readings describe seven primary centers through which the life force of the lyden-pineal axis is expressed and coordinated. These centers are associated with specific spinal levels, specific endocrine glands, and specific dimensions of physical, mental, and spiritual function. Reading 2642-1, encountered in the battery excerpts, refers to "the seven centers of propagation" through which the stability of the entity force is maintained, and through which the heart, lung, liver, and kidney circulation is sustained. This passage connects the seven centers directly to the four-organ battery ensemble discussed in Section 1 — the centers of propagation are not separate from the body's bioelectrical system but are its highest organizational nodes.

The seven centers as described across the readings correspond to the major endocrine glands and their associated spinal levels:

1. **The gonadic/lyden center** (sacral-coccygeal region) — the ground level of the life force; the lyden gland as the reservoir of creative-reproductive energy
2. **The Leydig/adrenal center** (lumbar region) — the adrenal glands; stress response and vital energy mobilization; often described as closely associated with the lyden
3. **The solar plexus center** (ninth dorsal/T9 region) — the adrenals and the solar plexus ganglia; the abdominal brain discussed in Section 2; the primary vibratory coordination center of the sympathetic system
4. **The thymus center** (cardiac/upper dorsal region) — the thymus gland; immunity and the love center; the heart of the spiritual life
5. **The thyroid center** (cervical region) — the thyroid gland; the will center; metabolic regulation and the expression of the will in physical action
6. **The pineal center** (center of the brain) — the pineal gland; the integrating and coordinating center of the entire system
7. **The pituitary center** (crown) — the pituitary gland; the master endocrine regulator; the receiver of higher vibratory influences (highest center vibratorially)

This seven-center structure is not stated with complete anatomical precision in any single reading. It is presented here as a working framework, with the acknowledgment that the readings' accounts of individual centers are sometimes more specific and sometimes more suggestive than a neat seven-level schema implies.

What is consistent across the readings is that these centers are simultaneously physical (glandular and neural), psychological (each

associated with specific emotional and motivational patterns), and spiritual (each a point of connection between the physical body and soul/spirit expression). Reading 464-4 describes the therapeutic goal as "the setting up of the correct vibratory forces within the body for a UNISON of the physical, the mental, and the spiritual forces of the body" — specifically through correction of "the vibratory rate set through the pineal gland, and the branches of same in each major ganglion along the spine." The ganglion associated with each spinal level is the physical expression of that center's vibratory node.

The Pineal Center as the One Acting Through the System

Reading 5498-1 makes a distinction that is important for understanding the pineal center's unique role. In describing the Wet Cell application for a child with developmental impairment whose pineal and pituitary glands were not functioning properly, the reading prescribes an additional attachment "about the head — touching each side, just above the ear," noting: "this vibration would act on the pituitaries — for these are two. While the pineal CENTER is one, acting THROUGH the system and through the brain itself." (5498-1)

The pituitary glands are two (anterior and posterior lobes with distinct functions); the pineal is one — a single, midline, integrating center that acts through the entire system rather than through a local domain. This uniqueness of the pineal reflects its role in the readings as the coordinator of the whole rather than a regulator of any particular part. It is the one center from which the coherence of the entire vibratory system is maintained. When the pineal center is impaired — as in the child in reading 5498-1, or as in the epileptic described in reading 179-1 where "the pineal gland is affected" — the coordination of all the other centers is disrupted.

The pineal's magnetic sensitivity, noted in the modern research literature (Semm et al., 1980; Wang et al., 2019), is consistent with its role as a receiving and integrating center for both internal and external vibratory influences. A magnetically sensitive gland at the crown of the nervous system, connected by the "pineal cord" to every major ganglion along the spine, would be precisely positioned to function as the meta-vibratory coordinator described in the readings — receiving influences from the spiritual-mental dimensions above and distributing them through the physical centers below.

The Kundalini: Life Force in High Vibration

The readings make occasional reference to the kundalini — a concept drawn from yogic tradition referring to a latent life force coiled at the base of the spine that can be aroused and raised through the spinal centers to the crown, producing states of heightened consciousness and spiritual illumination. The readings' treatment of kundalini is consistent with the framework established by the seven centers and the pineal-lyden axis. The kundalini is the life force of the lyden, moving upward through the centers along the spine to the pineal, in the high-vibratory expression of the creative force.

Reading 2334-1 states: "the high vibratory forces to which the body may raise itself by the concentration and meditation; which, causing the kundalini to rise along the cerebrospinal system, or in conjunction with the pineal ..." The kundalini rises along the cerebrospinal system — the same system whose junction with the sympathetic is the focus of the appliance therapeutics — and does so through the same concentrative-meditative activity that the readings consistently recommend during Radial Appliance and Wet Cell sessions.

Reading 3676-1 links the Wet Cell's primary spinal attachment centers directly to the kundalini — identifying those centers as the physical nodes through which the life force in its high-vibratory expression acts on the body during treatment. This reading establishes explicitly what the framework implies. The Wet Cell Battery, when properly applied at the spinal centers, is not merely addressing low-level physiological incoordination but is engaging the same bioelectrical pathway through which the creative life force moves in its highest physical expression.

What the framework already makes clear is that the spinal centers targeted by the Wet Cell are not selected arbitrarily. They are the physical nodes of the pineal system's distributive network — the ganglia through which "the branches of same in each major ganglion along the spine" (464-4) carry the vibratory rate set by the pineal gland to every region of the body. Therapeutic intervention at these nodes through the Wet Cell's low vibratory current and solution vibrations is, in the readings' framework, an intervention at the level of the entity's most fundamental physical-spiritual interface.

Becker's DC System and the Spinal Centers

An important bridge between the readings' account of the pineal-spinal center system and modern bioelectrical research is provided by the work of Robert Becker, whose investigations of the body's direct current (DC) electrical system are summarized in *The Radial Appliance and Wet Cell Battery* (McMillin & Richards, 1994, pp. 81-84). Of particular note:

...the cervical enlargement in the spinal cord ... and the lumbar enlargement. These were all found to be positive in the human being, with the nerve-fiber outflows from each increasingly negative the farther out we placed our measuring electrode" (Becker, 1990, p. 87).

Becker's measurements established that the spinal cord and its associated nerve centers maintain characteristic DC electrical potentials — with the cervical and lumbar enlargements of the spinal cord found to be positive, and the nerve fiber outflows from each increasingly negative the farther out the measuring electrode was placed. This pattern of spinal DC potentials — positive at the central nodes, grading to negative at the periphery — is structurally consistent with the readings' description of the spinal centers as positive poles from which vibratory energy radiates outward through the nerve networks. The Wet Cell's copper electrode, attached at a positive spinal center, and its nickel electrode at the abdomen near the umbilicus, creates a circuit that mirrors this natural polarity pattern — placing the external positive pole at the spinal center and the solution-carrying pole at the abdominal assimilation center through which the vibratory elements enter the system.

Becker also found a direct relationship between the level of consciousness and the strength of the DC potential: "Sleep produced a modest drop, and deep general anesthesia resulted in a drop in the potentials to zero" (Becker, 1990, p. 88). This finding is directly relevant to the pineal system's role in consciousness. If the DC potentials of the spinal centers reflect the level of consciousness — dropping toward zero as consciousness is suppressed — then they are measuring precisely what the readings describe: the expression of the entity's life force through the physical spinal centers. The Radial Appliance's purported induction of sleep and relaxation may work in part by modulating these DC potentials toward the patterns characteristic of the deeply restful, coordinatively balanced state.

Becker's research on acupuncture points and meridians adds another dimension. His group found that acupuncture points have

distinctive electrical characteristics and that the meridians conduct current with a flow into the central nervous system (minus polarity at the extremities, positive at the central nervous system). This is consistent with Becker's interpretation of acupuncture as engaging the DC control system of the body, distinct from the impulse-carrying neurons, and based on the perineural cells surrounding the neurons (McMillin & Richards, 1994). The readings' spinal centers and the traditional acupuncture system appear to be addressing the same underlying DC bioelectrical architecture from different cultural and therapeutic traditions.

The Lyden, Cellular Emotion, and the Centrosome

The reach of the pineal-lyden system extends to the cellular level in a manner that has implications for understanding the body's bioelectrical system in its most comprehensive scope. Reading 281-63 connects the centrosome — the cellular organelle that orchestrates mitosis — to the lyden and to emotion:

(Q) What power does the centrosome have, and what is it relative to in a living, human body?

(A) The emotions as related to the CENTRAL forces in the eventual activity within the lyden gland itself, or that ability to reproduce within its own self. (281-63)

The centrosome's "power" is the emotional force of the lyden — the reproductive life force that operates at every level from the glandular to the cellular. Research has confirmed that small physiological electric fields orient cell division, and that the centrosome functions as an "electronic generator" during mitosis through the synchronized electric oscillations of microtubules, centrosomes, and chromatin fibers (Nygren et al., 2020; Zhao & Zhan, 2012). The lyden's creative-reproductive force — identified as electrical in nature through reading 294-142's equation of the soul's

activity with "the electron that is Life itself" — operates at the cellular level through the centrosome's bioelectrical orchestration of division.

This connection from the pineal-lyden axis down to the centrosome at the cellular level completes the hierarchy established in Section 3. The atomic electronic vibration at the base (1800-4) is organized at the cellular level by the centrosome's bioelectrical field. That cellular organization is governed by the lyden's reproductive life force. The lyden is coordinated through the pineal system's seven centers along the spine. The pineal system mediates between the physical body and the mental-spiritual dimensions of the entity. And the creative force — "God," or the "electron that is Life itself" — is the ultimate source from which the entire hierarchy flows downward into physical expression. The body's bioelectrical system, in its full extent, is nothing less than the material expression of the creative life force itself.

The Body-Soul Interface: Spirit, Mind, and Electricity

The readings' most direct statement of the relationship between spirit, mind, body, and electricity is the triune principle that forms the philosophical foundation for this entire appendix: "Spirit is life, mind is the builder, physical is the result." In the bioelectrical framework of the readings, this triune relationship is not merely a philosophical proposition — it is a description of how vibratory causation operates through the hierarchy of the body's systems.

Spirit — the creative force, identified with life itself and expressed as electronic vibration at the most fundamental level — is the source of the body's bioelectrical activity. It is present as electrical potential in every atom, every cell of the body expressed as a vital, life force energy. It's intensity is regulated by the Leydig/lyden center. Within

the vibratory system of the body, it moves from the lyden through the seven spiritual centers to all organs and tissues.

Mind — the pattern-forming intelligence that shapes the expression of spiritual life force — operates at the intermediate levels, through the glandular centers, the sympathetic system, and cerebrospinal system.

Physical — the material body with its battery, umbilical-solar plexus assimilation system, circulatory patterns, and cellular reproduction — is the result of the mind's organization of the spirit's life force.

Reading 1299-1 frames this in terms directly applicable to electrotherapy: "as the electrical vibrations are given, know that Life itself — to be sure — is the Creative Force or God, yet its manifestations in man are electrical — or vibratory." When the Wet Cell carries gold vibration to the nerve centers, it is not merely stimulating tissue — it is introducing a vibratory influence that, entering through the solar plexus assimilation center and distributing through the sympathetic vibratory system, potentially engages the very force by which life itself is expressed in the physical body. The reading continues: "See, FEEL, KNOW — as the applications are being made — that these are channels and measures through which the divine may operate for effective activity in this body." The patient's conscious awareness — their mental attunement — is part of the therapeutic circuit. Mind, as the builder, participates actively in directing the spiritual life force that the appliance is helping to channel.

This is why the readings so consistently prescribe meditation, prayer, affirmation, and constructive mental attitude alongside the physical applications of the appliances. It is not merely that a relaxed and receptive state makes the treatment more comfortable — it is

that the mental-spiritual attunement of the individual is a necessary component of the therapeutic mechanism. The appliance works with the low vibratory forces of the physical body. The meditation engages the vibratory forces at the mental-spiritual level. The seven centers — particularly the higher centers of thymus, thyroid, pituitary, and pineal — are where these two streams of vibratory activity meet and integrate.

Reading 1473-1 captures this integration most directly. In response to a question about improving memory and concentration, the Radial Appliance is recommended "for ATTUNING the body. And during the use of same ... use that period as a period of DEEP meditation; gradually raising, through the system, opening the centers of the body for better understanding." The Radial Appliance does not merely equalize the circulation — it attunes the body, bringing its vibratory system into a state of coherence in which the centers can be safely opened through meditation. The "opening of the centers" is the activation of the seven centers of the pineal system — the very centers that the Wet Cell engages therapeutically in cases of physical pathology. In health, the Radial Appliance and meditation open these centers for spiritual development; in pathology, the Wet Cell restores their functional integrity for physical healing. The mechanism is the same; the level of application differs.

Implications for the Appliances: Physical Healing and Spiritual Development

The recognition that the spinal centers targeted by the Wet Cell are simultaneously the nodes of the pineal system's spiritual-physical interface has important practical implications. It means that the therapeutic application of the Wet Cell is never purely physical — it always occurs within the context of the entity's overall spiritual-

mental-physical organization. The readings' frequent injunctions about the patient's attitudes, spiritual orientation, and mental attunement during treatment are not peripheral advice but specifications about the conditions necessary for the treatment to work at its intended level.

Some readings indicate that the Wet Cell should not be commenced until some spiritual preparation has been achieved — not because spiritual development is a prerequisite for physical healing, but because the centers through which the treatment acts are simultaneously the centers of the entity's spiritual-physical interface. If those centers are severely disturbed at the spiritual-mental level, physical treatment alone cannot restore them. Reading 3684-1 and related readings (referenced in *The Radial Appliance and Wet Cell Battery*) indicate that spiritual orientation must be addressed alongside regenerative (“curative”) physical treatment in the most serious cases. This is not a spiritual judgment — it is a bioelectrical reality, reflecting the integrated nature of the system through which both physical vitality and spiritual expression flow.

The Radial Appliance, by contrast, is described as appropriate “for EVERYBODY” (202-7) — because its action at the low vibratory level of circulation and sympathetic equalization does not require the deeper centers to be open or aligned in any particular way. It works at the level of the hepatic battery and the peripheral circulation, below the threshold at which the individual's spiritual-mental orientation becomes a determining factor in treatment efficacy. This difference in the depth at which each appliance acts — Radial Appliance at the lower vibratory levels, Wet Cell engaging the higher spinal centers — is the fundamental basis of the clinical distinction between them that runs throughout the readings.

Section 5: Bioelectricity, Development, and Regeneration

Introduction: The Continuity of Developmental and Regenerative Bioelectricity

The preceding sections have established the body's bioelectrical system as a multi-level hierarchy extending from atomic electronic vibration at the base through the hepatic battery, the umbilical-solar plexus assimilation network, the cerebrospinal and sympathetic nervous systems, and the pineal-lyden axis at the apex. This section addresses a dimension that cuts across the entire hierarchy: the relationship between bioelectricity and the processes of development and regeneration.

As has been noted, the readings propose a principle of fundamental importance. The same bioelectrical forces that organize the developing embryo in the womb remain active throughout life and can be reengaged to restore damaged or degenerated tissues and organs. In the language of the previous sections, the bioelectrical patterns established by the lyden-pineal axis during gestation — expressed through the spinal and abdominal centers where the appliance electrodes are attached — are not erased at birth but persist as the body's fundamental organizational template. Regenerative healing, in the readings' framework, works by reactivating these developmental patterns rather than by introducing new ones.

This principle connects the appliance therapeutics directly to the deepest level of the body's bioelectrical organization. When reading 3676-1 describes the three great kundalini centers as the nodes through which the life force acts as "suggestions to the spiritual forces for distribution through the seven centers," it is describing the same bioelectrical architecture through which the spiritual forces

organized the embryo at conception. Therapeutic intervention at those centers through the Wet Cell is, in effect, a recapitulation of the developmental process — an invitation to the body to retrieve and reactivate the organizational patterns through which it was originally built.

The Developmental Basis: The Pineal Cord as the First Physical Movement

The readings establish a developmental priority for the pineal system that grounds the entire regenerative framework. Reading 281-46 states:

The cord that is eventually known or classified as the pineal is the first movement that takes place of a physical nature through the act of conception; determining eventually — as we shall see — not only the physical stature of the individual entity but the MENTAL capacity also, and the spiritual attributes. (281-46)

The pineal cord — the first physical structure to be established at conception — determines not only physical stature but mental capacity and spiritual attributes. This is a claim of extraordinary scope: the bioelectrical axis of the body (the pineal cord extending from the lyden through the spinal centers to the pineal gland) is the primary organizing structure of the entire human entity — physical, mental, and spiritual — from the very first moment of physical existence.

Reading 281-53 continues: "Conceived, then the first movement is along that center or gland [pineal] ... [to] all of the centers of activity through which spirit first moves from the lyden — the center of the spiritual forces." The sequence at conception is: the pineal cord is established first; the spiritual force moves from the lyden through the pineal to all the centers of activity; the embryo develops around

this axis. The spinal and abdominal centers where the Wet Cell electrodes are later attached in therapy are the very centers established by this first developmental movement.

Reading 3969-1 connects the pineal-lyden axis to both development and psychological function: "for this action in sympathetic and [pineal] coordinating system, which occurs through the action of the lyden [Leydig] gland with that of the pineal, in its recurrence to bring forces along those of the sympathetics coordinating with cerebro-spinal centers ... The basis, the seat of the soul, then, in that of the lyden gland, with the pineal [coordinating] reaction in the system, and this the activity that brings about psychological conditions." The pineal-lyden axis governs both the physical organization of the embryo and the psychological conditions of the adult — it is the constant throughout the developmental arc.

Regeneration Echoes Development: The Central Principle

From this developmental foundation, the readings derive their most sweeping therapeutic claim. Regeneration is possible because the body retains the bioelectrical template through which it was originally organized, and that electrotherapy can reactivate this template.

Reading 1026-1 makes the mechanism specific in the context of Wet Cell application:

Use the Wet Cell Appliance ... carrying the vibrations from the Chloride of Gold and the next day the vibrations from Atomidine (or iodine) — as to become active to the gland forces, making for an increase in the activity through the iodine for the thyroids, the adrenals, and the glands through the whole of the eliminating system. The vibrations from the Chloride of Gold solution would add to the vitality for blood and nerve

building, aiding more specifically the activities through the lyden gland, through the activities of the glands in the system's reproductive activities that make for an expression in the system through the emotions of the body; making for an activity to the glands that strengthen or maintain the equilibrium in the system — that is, as to the pineal's reaction. (1026-1)

Gold specifically aids the lyden gland and its reproductive-regenerative activities. Iodine activates the thyroid and adrenal components of the glandular system. Together, acting through the umbilical-solar plexus assimilation center and the three great kundalini spinal centers, these solutions engage the pineal system's coordinating function — restoring "the pineal's reaction" that maintains equilibrium/coordination across the entire seven-center system. This is regeneration through the same glandular-neural axis that organized development.

Reading 5526-1 specifies the anatomy with unusual precision:

... begin with those applications of electrical vibrations through those of the wet battery formations [Wet Cell Battery] as will carry those of the Gold, of the silver — both. These alternated into the system in such a manner as to change that of the nerves' energy as related to that known, or called the gray matter itself; making such connections in the umbilicus region and in the 1st and 2nd cervical region, where those of the glands — the pineal, the lyden, the medulla oblongata itself — may be so acted upon as to make for those vibrations in the system as to aid the body in gaining its equilibrium. (5526-1)

The connections between the umbilicus region and the upper cervical region — the abdominal assimilation center and the cranial base — engage the pineal, lyden, and medulla oblongata

simultaneously through the gray matter of the nerve system. This is not a peripheral intervention but an activation of the body's primary developmental axis, directed at the gray matter — the neural carbon storage medium identified in Section 1 — through which nerve energy is conducted and stored.

The Atomic Basis of Regeneration: Seven-Year Cycles

The readings ground their regenerative claims in a principle about the cyclical renewal of the body's physical substance. Reading 3117-1, given for a seven-year-old girl suffering from birth trauma — with adhesions and impaired circulation in portions of the brain — states:

True, there are adhesions, and there is the lack of the circulation through portions of the brain. But this is at the beginning of a cycle for body change. Each atom may be changed within seven years. If there are those interested in contributing to this, BEGIN. If you are not interested in doing it for fourteen, don't commence! (3117-1)

The principle is explicit: every atom of the body can be replaced within a seven-year cycle. The body's physical substance is not static — it is in constant renewal. The question is not whether the atoms will change but what pattern they will change into. In a diseased or injured body, without intervention, new cells and tissues reproduce according to the pathological pattern established by the injury. With appropriate electrotherapeutic intervention, directed at the developmental centers of the pineal system, new cells and tissues can be guided to reproduce according to the original healthy pattern — the bioelectrical template laid down at conception.

This is the scientific core of the readings' most ambitious regenerative claims. It is not that damaged tissue is miraculously restored instantaneously — it is that the body's capacity for atomic

renewal, combined with bioelectrical guidance of that renewal through the pineal system's developmental template, can gradually replace pathological tissue with healthy tissue over the course of months and years. Reading 3117-1's prescription — gold vibration through the Wet Cell, prayer, and massage — is designed to support and guide this gradual atomic renewal. The caution about not beginning unless committed to fourteen years reflects the clinical reality that regeneration through atomic renewal is a slow process requiring sustained, consistent application.

Nerve Regeneration and the Brain: The Most Extreme Claim

The readings make their most extraordinary regenerative claim regarding the nervous system and the brain. Many physical readings maintain consistently that the nervous system — including the brain itself — can be regenerated through appropriate electrotherapeutic intervention. Reading 1800-16, the foundational statement of nerve regeneration principles, states:

The PRINCIPLE [of using electrotherapy with gold and silver] being that these change the vibratory forces as they add to or take from impulses within the system, from which those of the sensory [nervous] system, or senses, react in the brain itself ... for WITH the proper manipulations to PRODUCE coordination WITH drainage in the system, as may be given through manipulation osteopathically, or neuropathically given to the system under various stages, may create for a body almost a new brain, will the patience, the suggestion, the activities in the system BE carried out according to the conditions as necessary to be met. (1800-16)

"Almost a new brain" — through the combination of electrotherapy (gold and silver vibrations changing the vibratory forces of the nervous system), osteopathic or neuropathic manipulation

(producing coordination with drainage), patience, suggestion, and systemic activities including diet and medication. This is precisely the integrative, multi-level approach described throughout this appendix: intervention at the physical vibratory level (appliances), at the structural-mechanical level (manipulation), at the mental-informational level (suggestion and attitude), and at the metabolic-nutritional level (diet).

The regeneration of nerve tissue is one of the most clinically significant and practically challenging aspects of applying the Cayce readings for healing (McMillin, 1997). The readings' framework offers an account of why nerve regeneration should be possible in principle. The bioelectrical template of the pineal system retains the developmental pattern of healthy nerve organization. However the clinical reality of applying this framework without individual readings for each patient makes it genuinely difficult to determine the correct combination of solution, attachment pattern, adjunct therapies, and duration for any given case. Reading 271-3's blunt insistence that "it is presumed that all [treatments] will be adhered to in the manner given; and one activity becomes then dependent upon another" reflects the readings' consistent position that the therapeutic system functions as an integrated whole, with each component necessary to the efficacy of the others.

The hardware-software analogy used in *The Radial Appliance and Wet Cell Battery* (McMillin & Richards, 1994) captures an important dimension of this interdependence. The battery treatments can regenerate nerve tissue (the "hardware" of the nervous system), but without appropriate suggestion and mental attunement (the "software"), the regenerated tissue lacks the organizational pattern needed to function coherently. The reading warns that without this: "there comes that of not knowing what to do with the impulses; and

the body then becomes at times irresponsible for the activities of the mental reaction." (271-3) Hardware without software — regenerated tissue without appropriate mental-spiritual patterning — is insufficient and potentially harmful.

Top-Down vs. Bottom-Up: The Readings' Approach to Regeneration

One of the most important structural features of the readings' regenerative framework is its fundamentally top-down character. Modern regenerative medicine approaches the problem primarily from the bottom up — manipulating genes, proteins, cellular pathways, and subcellular interactions in the hope that the correct higher-level outcome will emerge from these lower-level interventions. The readings propose the opposite: intervene at the highest bioelectrical level (the pineal system's developmental centers) and trust the body's own intelligence to translate that high-level signal into the appropriate lower-level regenerative activity.

Levin and colleagues have articulated a parallel argument from within mainstream bioelectrical research: "Today's dominant approach to pattern regulation is bottom-up ... We hypothesize that efficient programming at the level of anatomical outcome can be achieved if we harness the kind of top-down control algorithms that have been so successfully exploited by nervous systems in the control of animal behavior" (Pezzulo & Levin, 2015). Their concept of "master triggers" — high-level bioelectrical signals that activate the body's own pattern-regulation algorithms without requiring micromanagement of the details — corresponds closely to the readings' electrotherapeutic approach. The Wet Cell's introduction of gold or silver vibration at the three great kundalini centers is precisely a master trigger: a high-level bioelectrical signal directed at the developmental axis of the pineal system, intended to activate the

body's own regenerative algorithms rather than to micromanage cellular or molecular processes.

Reading 889-1 states the therapeutic outcome of this approach: "Then we would begin with the applications of the Wet Cell Appliance that carries in the system the Chloride of Gold solution, that will build for the organs of the system as related to the activities with the glands of the body. And this will make for the nerve plexus, the ganglia, the [pathological] activities through the system, to be gradually overcome." The gold vibration, working through the glandular system and the pineal-hyden axis, gradually overcomes the pathological vibratory pattern — not by directly attacking the pathology at the cellular level but by restoring the correct organizational signal from the top down.

Becker's Bioelectrical Research and the Readings' Regenerative Framework

Robert Becker's research on bioelectricity and regeneration provides the most direct modern scientific parallel to the readings' regenerative framework. Becker demonstrated that amputation of salamander limbs produces a characteristic electrical potential that varies between approximately +22 and -32 millivolts as healing progresses (Becker & Selden, 1985). In the intact animal, a positive potential along the spinal cord grades to negative at the extremities — the same polarity pattern, from central positive to peripheral negative, that characterizes the human DC electrical system. From the Cayce readings perspective, this is mirrored in the Wet Cell's electrode configuration (positive copper plate at the spinal center, negative nickel plate at the abdomen).

Becker and Selden (1985) found by implanting tiny batteries supplying only 1 nanoampere of current in amputated rat forelimbs

stimulated some limb regeneration. Current as low as 0.1 microamperes stimulated bone growth in other animals. The crucial insight was that greater amounts of electricity were not useful — the need was for the right polarity and the right amount of current in the right place (Becker, 1990). This is precisely the argument for the Wet Cell's extremely low current output (approximately 3×10^{-8} amperes through the body's skin resistance). Not that strong current would be more effective, but that the low, body-level current is the appropriate one for engaging the body's own bioelectrical control system.

Becker's conclusion — "I believe that with this technique, we were actually turning on the growth-control system, rather than overloading the system with far too much energy and thus producing damage" (Becker, 1990, p. 153) — is a restatement of the readings' principle in modern bioelectrical language. Turning on the growth-control system is precisely what the Wet Cell, applied at the pineal centers, is intended to do: not to supply the energy of regeneration directly, but to activate the body's own bioelectrical system for guiding regeneration.

Levin's more recent research extends Becker's framework to the level of bioelectrical information storage and retrieval. Endogenous bioelectrical networks store non-genetic patterning information that can be retrieved and reactivated for regeneration of diseased or injured tissues and organs (Levin, 2014; McLaughlin & Levin, 2018). The information is already present in the body's bioelectrical system — stored in the developmental template established by the pineal system at conception and maintained throughout life. What is needed is the appropriate signal to retrieve and reactivate it. This is the readings' regenerative principle stated in the language of modern information biology.

The Role of Gold and Silver in Nerve Regeneration

The readings' most frequently prescribed regenerative solution is gold chloride — used in the Wet Cell for nerve regeneration in conditions including Alzheimer's disease (McMillin, 1994), schizophrenia (McMillin, 1991), multiple sclerosis (Meridian Institute, n.d.) and developmental neurological impairment. Silver nitrate is often alternated or combined with gold. The readings' account of how these solutions work is consistent with the vibratory assimilation framework established in Section 2. They do not act pharmacologically but supply the atomic vibration of the metal through the solar plexus assimilation center, resonating with and reinforcing the regenerative activity of the nerve tissue.

Reading 1800-16 specifies that gold and silver "change the vibratory forces as they add to or take from impulses within the system, from which those of the sensory nervous system, or senses, react in the brain itself." Gold adds to or takes from the vibratory forces of the nerve impulses — adjusting their frequency toward the characteristic electronic unit of vibration necessary for healthy nerve function (as described in reading 1800-4). Silver performs a complementary function, alternating with gold to cover a different aspect of the nerve's vibratory spectrum especially regarding the "white matter" (myelin sheathing) in nerve tissue. "Gold to the gray matter in nerve tissue itself; Silver in the cord of the white matter - that is the principal element or force or influence; Camphor as a healing agent - or that works with, or between, the two elements (in a vibratory force)." (3071-1)

Reading 120-5 makes an extraordinary claim about the long-term potential of gold and silver: "these feed directly to the tissue of the brain ITSELF, and — given properly — silver and gold may almost lengthen life to its double, of its present endurance." The mechanism implied is that gold and silver, by maintaining the correct vibratory equilibrium in the brain's nerve tissue through their electronic-atomic vibrations, prevent the gradual degeneration that is the hallmark of aging — supporting the continuous atomic renewal of the seven-year cycle by guiding new cells and tissues to replicate the correct vibratory pattern of healthy nervous tissue rather than the degraded pattern of aging.

This claim — longevity through vibratory maintenance of the brain's neural tissue — is one of the most ambitious in the readings' bioelectrical framework. It implies that aging itself, at least as it manifests in neurological degeneration, is in part a vibratory process. The nerve tissue's characteristic electronic units of vibration gradually lose their equilibrium, the seven-year atomic renewal reproduces the degraded rather than the healthy pattern, and the accumulating deficit manifests as the cognitive and neurological decline of aging. Perhaps therapeutic maintenance of the correct vibratory pattern through gold and silver could interrupt this cycle, supporting the continuous renewal of neural tissue according to the original healthy developmental template.

The Requirement of Integration: Clinical Implications

The readings' regenerative framework carries important practical implications that are relevant to clinical settings. The consistent insistence that "one activity becomes then dependent upon another" (271-3) means that partial application of the treatment plan is not merely less effective than full application — it may be inadequate or even counterproductive. The hardware-software dynamic of

reading 271-3 is a specific instance of the general principle: bioelectrical regeneration of tissue without the mental-spiritual patterning necessary to organize that tissue's function produces a system with regenerated hardware but no coherent software — potentially more dangerous than the original condition.

The readings' integration requirements typically include: the Wet Cell application itself (with appropriate solution, attachment pattern, and duration), manual therapy (to relieve spinal impingement and support drainage), hydrotherapy, diet (to provide the metabolic substrate for regeneration), mental-spiritual application (suggestion, meditation, affirmation, prayer), and in some cases the Radial Appliance in alternation with or between Wet Cell sessions. Reading 1800-16 discusses all of this and insists on their coordination — "activities in the system BE carried out according to the conditions as necessary to be met."

The practical difficulty is that without individual readings for each patient the precise combination appropriate to any given case must be inferred from pattern-matching across all the readings — an inherently uncertain process. Reading 3117-1's warning that anyone not committed to fourteen years should not commence reflects the reading's awareness that regenerative healing through atomic renewal is a long-term process that will test the patience and persistence of both patient and practitioner. The two clinical realities — genuine cases of meaningful improvement, and genuine cases of disappointing results — are both consistent with this framework. Improvement when the full integration of treatments was achieved and maintained; disappointment when key elements were missing, inconsistently applied, or when the individual's condition or circumstances precluded the sustained commitment the process requires.

What is required: Psychic input from a source equivalent to Edgar Cayce and/or sufficient scientific understanding to be able to design and implement a personalized treatment plan addressing all of the particulars listed above. This text is simply an attempt to further that process.

Section 6: Cancer as Bioelectrical Dissociation

A Note on This Section

Cancer receives relatively limited direct attention in the physical readings compared to the neurological, assimilative, and eliminative conditions that occupy the majority of the health readings. The excerpts cited in this section — particularly 4741-1 and 3516-1 — are among the most theoretically dense statements about cancer's nature found in the readings. They are examined here not primarily as clinical prescriptions but as theoretical constructs: statements about what cancer *is* at the bioelectrical level, consistent with the framework established in the preceding sections.

The interpretive framework for this section is provided by Michael Levin's bioelectrical theory of cancer, which the readings anticipate in several important respects. Levin's framing of cancer as analogous to a dissociative identity disorder of the body's collective cellular intelligence — specifically, the failure of gap junction-mediated bioelectrical communication that maintains the cell's membership in the cooperative morphogenetic community of the organism — maps with notable precision onto key concepts in the readings. This parallel is presented throughout as an interpretive tool, not as a validation or evaluation of the readings.

One additional dimension of this section — the readings' therapeutic references to ultraviolet light and green glass as agents against

cancerous growths — is placed in the context of Levin's optogenetic research without forcing a technical equivalence. The readings speak from their own framework. The modern research is noted as suggestive convergence. A scholarly review of the Cayce readings approach to cancer (McMillin, 2002b) is available on the Meridian Institute website (<https://www.meridianinstitute.com/publication/cancer.html>).

Introduction: Cancer Within the Vibratory Framework

The vibratory framework established in the preceding sections provides the essential context for understanding the readings' account of cancer. Every cell of the body is, in the readings' terms, an electronic vibratory unit — maintaining its own characteristic frequency of vibration while participating in the larger vibratory community of its organ, system, and organism (1800-4). Health is the maintenance of proper vibratory relationships among all these units; disease is vibratory incoordination at one or more levels of the hierarchy. Reading 1800-4 states the principle with complete generality: "When any force in any organ, any element of the body, becomes deficient in its ability to reproduce that equilibrium necessary for the sustenance of the physical existence and reproduction of same, that portion becomes deficient, deficient through electronic energy as is necessary."

Cancer represents a specific, extreme form of this general pathological category. It is not merely incoordination — a temporary or partial failure of the vibratory relationship between systems. It is, in the readings' account, a fundamental dissociation: a state in which individual cells or groups of cells have lost their participation in the body's coordinated vibratory community and have reverted to an autonomous, self-serving mode of activity — one that is in principle normal to the cell as an individual unit but is destructive to the

organism as a whole. The cell has not merely fallen out of rhythm with the rest of the body. It has ceased to recognize the body's rhythm as its own. In the language of the previous sections, it has dissociated from the vibratory community of the organism in the same way that a traumatized personality might dissociate from the coherent identity of the person who contains it.

This framing — cancer as cellular dissociation from the organism's cooperative bioelectrical identity — is the central organizing concept of this section. It emerges from the readings' own language, is consistent with the broader vibratory framework of the appendix, and finds significant convergence with Levin's bioelectrical model of cancer as a breakdown of collective cellular intelligence.

The Readings on the Nature of Cancer

Reading 4741-1, one of the most concentrated theoretical statements about cancer in the readings, articulates the fundamental distinction between normal cellular activity and the cancerous state:

For, as the very nature of a disturbing force — that which in the present is called cancer — finds its inception in the very cellular influence of the body itself; for a normal growth, a normal process of reproduction of cellular forces which is the NATURAL activity of EVERY atom in a living body; and this in the BEGINNING of an irritation, or a growth, or a change in the natural cellular forces of the body, may be stimulated to an unnatural activity. For the activity of a cell as of itself is an individual activity; the activity of a BODY is a UNIT in all its movements and expressions. (4741-1)

This passage requires careful unpacking, because it contains within a few sentences the readings' complete account of cancer's bioelectrical nature.

First, the readings identify cancer's inception in "the very cellular influence of the body itself" — it is not a foreign invasion in the first instance but an aberration of the body's own cellular forces. The cell's natural activity — the reproduction of cellular forces — is normal and necessary in every living body. What the readings describe is not a malfunction of an abnormal cell but a *misdirection* of a normal cellular capacity.

Second, the readings specify the triggering condition: "an irritation, or a growth, or a change in the natural cellular forces of the body" that stimulates the cell "to an unnatural activity." Some disruption to the cell's normal relationship with its environment — an irritant, an inflammatory change, a disturbance in the cellular vibratory equilibrium — tips the cell from its coordinated participation in the body's activity into an autonomous mode.

Third, and most fundamentally, the readings articulate the structural distinction that constitutes cancer: "the activity of a cell as of itself is an individual activity; the activity of a BODY is a UNIT in all its movements and expressions." A cell acting as an individual — pursuing its own reproduction without reference to the body's coordinated purposes — is the definition of the cancerous state. A body acting as a unit — all cells maintaining their cooperative participation in the organism's collective life — is the definition of health. Cancer is the collapse of the second into the first: the cell withdrawing from the cooperative unit and reverting to individual, autonomous activity.

These, as we find, have to do with the separation of the lymph circulation and the emunctory [cleansing] activities from the deeper circulation. And when cellular forces become so aggravated, either by bruising or lack of elements in the system to keep a continuity of life force, they set up within themselves. Thus they draw

upon the system, becoming – ORDINARILY, and oftentimes – malignant in their nature. (1013-1)

The readings that discuss cancer often use the term "separation" indicating a pathological condition wherein the affected "cellular forces" loose connection with surrounding cells and tissue. They "set up within themselves" their own identity and become an entity unto itself. This dissociative process may have a bioelectrical basis.

Gap Junctions and the Breakdown of Bioelectrical Community

The readings' account of cancer as cellular dissociation from the cooperative vibratory community of the body finds a precise structural parallel in Levin's bioelectrical model of cancer, which centers on the role of gap junctions in maintaining the cell's membership in the organism's bioelectrical collective.

Gap junctions are direct electrical connections between adjacent cells — channels that allow ions, small molecules, and electrical signals to pass freely between cells without entering the extracellular space. They are the primary structural means by which cells share bioelectrical information and maintain the coordinated resting potential patterns that define tissues and organs as bioelectrical communities. In Levin's framework, the body's bioelectrical state — the spatial distribution of resting membrane potentials across tissues — functions as an information storage and pattern-regulation system that governs the large-scale anatomical goals of the organism. Cells that are coupled through gap junctions participate in this shared bioelectrical identity; cells that are uncoupled from it lose access to the body's morphogenetic information and revert to a more primitive, unicellular mode of operation. This is precisely the transition the readings describe: "they set up within themselves."

The cancer cell, in Levin's framework, has not necessarily lost its genetic programming — it has lost its bioelectrical context. It behaves like a unicellular organism because, from a bioelectrical standpoint, it has become one: disconnected from the collective intelligence of the multicellular body.

Levin's characterization of this condition as analogous to a dissociative identity disorder of the body's somatic collective intelligence — where "alters" (autonomous cellular identities) act independently of the integrated body-self — captures something the readings also express through their language of "rebellion." The cancerous cell is not malfunctioning in its own terms. It is functioning as an individual organism, pursuing the unicellular goals of growth and reproduction. What it has lost is its identity as a member of the cooperative community — its participation in the body's larger bioelectrical "self." This is dissociation in the most precise sense: the cell remains active, but its activity is no longer coordinated with the integrated identity of the whole.

It must be stated plainly that the readings do not use the language of gap junctions or collective intelligence — these are modern interpretive constructs applied to illuminate what the readings describe. The readings' own language is clear: "the activity of a BODY is a UNIT in all its movements and expressions" (4741-1) and cancer represents "rebellion in the cellular body" against the lymphatic enforcement of that unity (3516-1). Whether the specific mechanism of that unity is gap junction-mediated bioelectrical communication, as Levin proposes, or involves additional or different mechanisms, remains an open question. The convergence is suggestive and instructive; it is offered as a lens, not a conclusion.

The Role of Irritation: Disrupting Vibratory Equilibrium

Reading 4741-1's specification that cancer begins with "an irritation, or a growth, or a change in the natural cellular forces of the body" that stimulates the cell to unnatural activity places the initiating event at the level of the cell's vibratory equilibrium. The cell's characteristic electronic unit of vibration — its normal frequency of bioelectrical activity, as described in reading 1800-4 — is disrupted by the irritant. If this disruption is not corrected, the cell's participation in the body's coordinated vibratory community becomes increasingly tenuous, until it tips into autonomous activity.

This account is consistent with several modern observations about the relationship between cellular bioelectrical state and cancer. Cells in pre-cancerous and cancerous states characteristically show altered membrane potentials — typically a relative depolarization compared to healthy tissue (Moreddu, 2023). Sustained depolarization is associated with increased cell proliferation, while hyperpolarization is associated with cell differentiation and cooperative tissue function. The initial "irritation" that the readings describe may correspond, in bioelectrical terms, to a sustained perturbation of membrane potential that shifts the cell toward the proliferative, autonomous mode. If the body's coordinative systems — the lymphatic-emunctory immune response, the umbilical-solar plexus vibratory network, the battery of the body — cannot correct the perturbation, the cell's departure from the cooperative vibratory community becomes permanent.

The readings' emphasis on eliminations as the first line of therapeutic priority in cancer is fully consistent with this account. Toxic accumulation — whether from dietary waste, metabolic ash, or environmental irritants — is in the readings' framework the primary source of the chronic cellular irritation that initiates

vibratory disruption. Poor eliminations are thus not merely a consequence of cancer but a precondition and continuing driver of it.

The Vibratory Basis of Cancer Therapy in the Readings

The readings' therapeutic approach to cancer follows directly from their account of its nature. If cancer is cellular dissociation from the body's cooperative vibratory community, the therapeutic imperative is to restore the conditions under which that community can reassert its coordinative authority over the dissociated cells. This means, in priority order: (1) restoring eliminative function to remove the chronic irritants driving cellular disruption; (2) supporting the lymphatic-emunctory system as the body's primary coordinative enforcement mechanism; (3) addressing the systemic vibratory incoordination — depleted battery body, impaired umbilical-solar plexus coordination, disrupted sympathetic network — that has allowed the cancerous dissociation to take hold and persist; and (4) in some cases, applying direct vibratory or bioelectrical intervention at or near the site of cancerous growth.

The readings' specific prescriptions for individual cancer cases reflect this priority structure. Diet, herbal therapy, hydrotherapy, castor oil packs (whose primary role in the readings is to support lymphatic circulation and abdominal emunctory function), and manual therapy to improve eliminations are consistent across the cancer readings. Electrotherapeutic intervention is more variable and more cautious — reflecting the readings' awareness that inappropriate stimulation of a system in cancerous rebellion may accelerate rather than correct the pathological process.

One consistent and distinctive therapeutic element in the cancer readings is the reference to ultraviolet light and green glass as agents for addressing cancerous growths. Several readings prescribe

exposure to ultraviolet light filtered through green glass, applied to the area of cancerous activity, as part of the treatment approach. The readings do not provide a detailed mechanistic explanation for this prescription, but the framework suggests that it operates at the level of the cellular vibratory system — the green-filtered UV light supplying a specific vibratory influence to the local cellular environment that supports the restoration of proper cellular equilibrium.

This prescription is of particular interest in the context of Levin's optogenetic research. Levin and colleagues have demonstrated that bioelectrical states in cells and tissues can be modulated using light-sensitive ion channels (channelrhodopsins) introduced into cells — a technique called optogenetics that allows precise, light-controlled manipulation of membrane potential. Crucially, Levin's group has shown that optogenetic modulation of bioelectrical states can override oncogenic mutations and normalize cancer phenotypes in model organisms (Levin, 2021). The readings' prescription of UV light filtered through green glass — a specific wavelength of light applied to the area of cancerous activity — anticipates the general principle of optogenetic intervention: using light to modulate the bioelectrical state of cells.

It would be an overreach to claim that the readings anticipated optogenetics in its modern technical sense — this technology is a product of recombinant biology that has no counterpart in the readings' framework. The convergence is at the level of principle: both the readings and Levin's optogenetic research recognize that the bioelectrical state of cells can be influenced by specific light exposures, and that such influence can normalize cancerous cellular behavior. The readings offer this as a therapeutic prescription.

Modern bioelectrical research offers it as an experimentally demonstrated mechanism.

The readings did prescribe radiation (x-ray) treatment in some serious cases of cancer, clearly with the intent to eliminate the rebellious cancerous cells rather than coax them back into the body's community of normal cells (e.g., the 325 series). Surgery is also an option presented in some cases of cancer in the readings.

Section 7: Cardiovascular Bioelectricity and the Body's Magnetic System

Introduction

The preceding sections have traced the body's bioelectrical system through its generative mechanisms (the hepatic battery), its assimilative and distributive networks (the umbilical-solar plexus system), its best documented vibratory substrate (the nervous systems), its meta-vibratory coordinator (the pineal system), its developmental foundations (the pineal cord and the embryological energy centers), and its pathological limit case (cancer as cellular bioelectrical dissociation). Throughout all of these, the circulatory system has appeared repeatedly as the medium through which bioelectrical forces are distributed across the body — the blood receiving the electrical charge impressed upon it by the hepatic battery (369-5), the deep circulation of heart, lungs, liver, and kidneys constituting the four-organ battery ensemble, and the Radial Appliance working through the extremities to equalize the body's circulatory magnetic field.

This section brings the cardiovascular system itself into direct focus as a bioelectrical system in its own right. It examines what the readings describe about the body's magnetic system and its

relationship to the Radial Appliance; the multiple bioelectrical mechanisms operating in the heart and vasculature; the figure-eight circulation pattern described in reading 1800-16 and its implications for the RA's therapeutic circuit; the concept of re-ionization as the readings' characterization of the RA's circulatory effect; and the convergence between the readings' account of vascular bioelectricity and the electromagnetic blood flow research of Beraia and Beraia (2018, 2022).

The Heart's Electromagnetic Field and the Body's Magnetic System

The readings' account of the body's magnetic system begins with the heart, and specifically with the Radial Appliance's relationship to the magnetic activity generated by the heart's circulatory action. Reading 1842-3 describes the Radial Appliance's effect in explicitly magnetic terms:

This [Radial Appliance] will aid in equalizing. This is an excellent period to use for meditation and prayer, as the body-energies are closer in accord, by this material or physical attribute, in equalizing through the magnet produced that equalizes the flow of the circulation. (1842-3)

The Radial Appliance produces a magnet — or more precisely, works with the magnet produced by the body's own circulatory forces — to equalize the flow of circulation. This is not the language of simple electrical stimulation but of magnetic field regulation. The appliance acts upon the body's own magnetic field to bring the circulatory flow into better equilibrium. Reading 1800-28 elaborates the Radial Appliance's magnetic nature in the most comprehensive theoretical statement the readings offer on this subject:

For this [Radial Appliance] works with the vibratory influences of the bodily force itself. Hence it is as a

magnet. Hence a radio-magnet that applies or supplies from the very vibratory forces of the bodily functionings ... as they reach the extremities, and influence of a vibration that affects the glandular system in reionizing the body, recharging and revitalizing the body ... These then have not been at all times considered how these are to be kept as a magnet ... as a GENERATIVE magnet ..." (1800-28)

Several essential principles are concentrated in this passage. First, the Radial Appliance is explicitly a magnet — a radio-magnet — that works with, not against, the body's own vibratory forces. It does not generate its own magnetic field and impose it upon the body. It amplifies, equalizes, and redistributes the magnetic field already generated by the body's bioelectrical activity. Second, the Radial Appliance's magnetic action reaches the extremities — it works through the peripheral circulatory system, using the strong pulse points of the wrists and ankles as the bioelectrical portals through which the circuit is established. Third, the effect of this magnetic action is specifically described as re-ionization. The glandular system is reionized, the body recharged and revitalized through the Radial Appliance's magnetic redistribution of the body's vibratory forces. Fourth, and uniquely, the Radial Appliance is called a GENERATIVE magnet — suggesting that its action is not merely redistributive but in some sense productive. It generates a field condition in the body that the body's own systems can then use to restore greater vitality.

Reading 3602-1 adds another dimension: "Each day use the Radio-Active Appliance for at least an hour ... to cause the formation of a magnet in the pulsation to become normal. It will be found that this will tend to put the body to sleep." The formation of a magnet in the pulsation — in the rhythmic pulse of the circulatory system — is

here the therapeutic goal. The pulsation is the rhythmic mechanical and bioelectrical expression of the heart's activity as it propagates through the vascular tree. Normalizing the magnetic formation within this pulsation is the means by which the Radial Appliance brings the whole body into the balanced, restful, coordinatively coherent state that the readings consistently associate with deep relaxation and productive sleep.

In modern bioelectrical terms, the heart generates the strongest electromagnetic field in the human body — exceeding even the brain's electromagnetic field in both electrical and magnetic strength (McCraty, 2015). This primacy of the cardiac electromagnetic field is fully consistent with the readings' characterization of the heart as a key element of the four-organ battery ensemble (Section 1 above). The heart's role in that ensemble — circulating the electrically-charged blood through which battery energy is distributed to every cellular unit of the body — is also its role as the primary generator of the body's external magnetic field. When the readings describe the Radial Appliance as working with "the magnet produced" by the body's circulatory activity, it is the heart's electromagnetic field, propagating through the vasculature and expressed most accessibly at the peripheral pulse points, that is the primary magnetic entity with which the Radial Appliance engages.

Three Mechanisms of Cardiovascular Bioelectricity

Modern cardiovascular research identifies three distinct bioelectrical mechanisms operating in the heart and vascular system, each relevant to understanding how the Radial Appliance's magnetic circuit interfaces with the cardiovascular system. These are: neuronal synaptic transmission, gap junction coupling, and ephaptic transmission.

Neuronal synaptic transmission is the most familiar mechanism — the autonomic nerves (superior, middle, and inferior cardiac nerves) that regulate cardiac pacemaker activity, heart rate variability, and the sympathetic-parasympathetic balance of cardiac function. This is the mechanism most directly addressed by the readings' consistent emphasis on the sympathetic nerve system as the primary vibratory coordinator of cardiovascular function. When the sympathetic system is in proper coordination with the cerebrospinal system (as discussed in Section 3), its cardiac innervation maintains appropriate heart rate and rhythm; when incoordination exists, cardiac irregularity and circulatory imbalance follow.

Gap junction coupling is the mechanism by which cardiomyocytes — the contractile cells of the heart — are electrically coupled to one another, allowing the electrical impulse of each heartbeat to propagate rapidly and coherently through the myocardium. Gap junctions are arrays of protein channels that permit the direct intercellular passage of ions and small molecules between adjacent cells (Kanno & Saffitz, 2001), and they are most prominent at the critical boundaries between cardiac tissue types: the sinoatrial node and atrial muscle, the atrioventricular node and His bundle, and the Purkinje fibers and ventricular muscle (Desplantez et al., 2007). The same gap junction coupling that maintains the coordinated beating of the heart is present in the vascular system as well, facilitating electrical conductivity through the blood vessel walls (Figueroa & Duling, 2009), and in the skin, where it may constitute part of the bioelectrical circuit through which the Radial Appliance's extremity attachments engage the cardiovascular system.

Ephaptic transmission — the interaction of cells through local electrical fields rather than through direct synaptic or gap junction contact — represents a third mechanism whose role in cardiac

physiology is still being characterized. Current evidence suggests that ephaptic fields provide a form of "conduction reserve" in the heart, supplementing gap junction coupling and maintaining coherent cardiac conduction even when gap junction coupling is significantly reduced (Lin et al., 2022). Wherever there are nerves and gap junctions there are electromagnetic fields capable of ephaptic influence. This means that the entire cardiovascular-peripheral nerve complex, from the cardiac conduction system through the sympathetic vasomotor nerves and the gap junction networks of the blood vessels to the skin's own gap junction connections, constitutes a distributed bioelectrical infrastructure through which the Radial Appliance's magnetic equalization can propagate.

This three-mechanism architecture — synaptic, gap junction, ephaptic — is directly relevant to the readings' account of the Radial Appliance's therapeutic pathway. The Radial Appliance's circuit through the extremities engages the body's peripheral pulse points (the wrists and ankles) where the strong arterial pulsation provides access to the cardiovascular bioelectrical system through the skin's gap junctions and the vascular gap junction networks. From there, the Radial Appliance's equalizing magnetic influence propagates through the body via all three mechanisms: through the vasomotor sympathetic nerves (synaptic), through the gap junction networks of the blood vessels (gap junction), and through the electromagnetic fields generated by the circulatory pulsation itself (ephaptic). The Radial Appliance does not need to generate a large external electromagnetic field to achieve its therapeutic effect because it is engaging a pre-existing, body-wide bioelectrical infrastructure that is itself already propagating electromagnetic influence throughout the system.

Re-Ionization: The Readings' Account of the Radial Appliance's Circulatory Effect

The readings' most specific characterization of what the Radial Appliance does to the circulatory system is expressed through the concept of re-ionization. Three readings address this directly:

The use of the Radio-Active Appliance [Radial Appliance] would RE-ionize the system ... (189-4)

As we find, the general weaknesses — and the more specific disturbances which affect the circulatory forces — are the lack of ionization, and hindered eliminations; owing to the slowing of the circulation and to general conditions in the body. Use also the Radio-Active Appliance [Radial Appliance] as an equalizer and as an aid to re-ionization of the circulation ... (2088-1)

These would be following the electrical forces which would re-ionize the body-vitality. This would be of the low forms of electrical vibration as from the low static vibratory influence, rather than the direct currents. (1472-8)

Thus the term re-ionization appears consistently and specifically in the context of the Radial Appliance's circulatory action. Reading 2088-1 is particularly informative. The problem it addresses is "the lack of ionization" in the circulatory forces, associated with "the slowing of the circulation." Ionization in this context is not a peripheral or metaphorical concept — it refers to the actual ionic state of the circulatory system, and specifically to the degree to which the circulation maintains its proper bioelectrical charge. When circulation slows, ionization decreases; when ionization decreases, the body's vitality — expressed through the circulatory system as the medium of the hepatic battery's distributed energy — falls. The Radial Appliance re-ionizes the circulation by normalizing

the body's own bioelectrical forces through the magnetic equalization of its extremity circuit.

Reading 1472-8 makes a clinically important distinction. The re-ionization by the Radial Appliance is specifically a low static vibratory influence, distinct from the direct currents of the Wet Cell or violet ray. This is the characteristic the readings insist upon most consistently about the Radial Appliance. It works with the body's own low vibratory forces, at the low end of the electromagnetic spectrum, rather than introducing an external direct current. The re-ionization it achieves is therefore not a forced electrical charging of the system from outside but a normalization and equalization of the system's own ionic balance through the redistribution of its intrinsic magnetic forces.

The modern research of Beraia and Beraia (2018, 2022) provides a suggestive parallel to the readings' re-ionization concept. These researchers document that erythrocytes (red blood cells) are in perpetual vibration — their intrinsic oscillation in the ultrasound frequency range generates a colloid vibration current that propagates through the blood and along the vasculature, carrying electromagnetic energy and information from the heart to the peripheral tissues. The carrier frequency of this electromagnetic signal is the intrinsic oscillation frequency of the erythrocytes themselves. In this framework, ionization of the circulation is not simply a matter of ionic concentration in the blood plasma but of the organized electromagnetic activity of the blood cells themselves as vibrating, current-generating units within the cardiovascular system.

If the readings' re-ionization concept is understood in this context — as the restoration of the proper ionic and electromagnetic activity of the circulating blood cells, including their intrinsic vibratory

oscillation — then the Radial Appliance's re-ionizing effect on the circulation corresponds to the normalization of erythrocyte vibratory activity and the electromagnetic field it generates. A depleted, de-ionized circulation is one in which the erythrocytes' intrinsic oscillation has become incoherent or reduced. A re-ionized circulation is one in which that oscillation has been restored to its normal amplitude and frequency, with the associated restoration of electromagnetic energy propagation through the cardiovascular system. The Radial Appliance's magnetic equalization of the circulatory field, working through the peripheral pulse points, provides the normalizing influence that restores this coherence.

This interpretation is offered as an interpretive hypothesis, not a conclusion. The readings do not describe erythrocyte oscillation, and Beraia and Beraia's research does not reference the readings. The convergence is at the level of principle — both the readings and this modern electromagnetic blood flow research recognize the vascular system as an active electromagnetic medium whose ionic and vibratory state is essential to proper physiological function.

The Figure-Eight Circulation and the RA's Bioelectrical Template

One of the most anatomically specific and theoretically rich passages in the readings concerning the cardiovascular bioelectrical system appears in reading 1800-16, in the context of explaining how the Radial Appliance should be applied to a person who has lost a limb:

Now, the circulation as is set up UNDER such conditions, the change through the system is as the figure eight. The blood passing through the liver at least twice before going to and from the extremities; so, in such conditions, the DIVERSIONS of same. Hence the body often feels, under such conditions, as if there were both legs when there's only one; both arms when there's only one; and they would especially FEEL so in the use

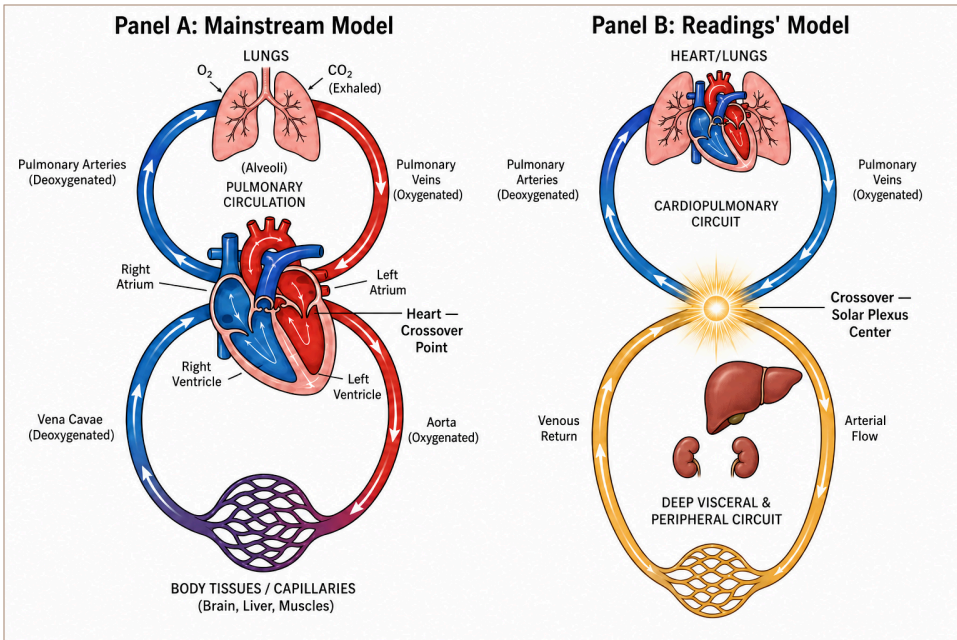


Fig. B-1. *The Figure-Eight Circulation: Two Schematic Models. Panel A depicts the mainstream cardiocentric model, in which the heart serves as the crossover point between the pulmonary and systemic loops. Panel B depicts the model described in the Cayce readings, in which the crossover point shifts to the solar plexus center at the umbilical region, the upper loop encompasses the cardiopulmonary circuit, and the lower loop encompasses the deep visceral and peripheral circuit, with the liver and kidneys as principal organs of the lower loop. Both panels are schematic representations; neither is intended as a literal anatomical diagram.*

of such appliance. This would be noteworthy to test out. In the application UNDER such conditions, the changes would be altered as to — that the extremity that was missing would be used as the alternate in each application, see? (1800-16)

This passage contains several interconnected claims of considerable significance.

First, the reading describes the circulation as tracing a figure-eight pattern — a pattern in which the deep circulation through the liver

intersects with the peripheral circulation to the extremities in a cross-over loop rather than a simple out-and-back circuit. The blood passes through the liver at least twice before completing its full circuit to and from the extremities. This figure-eight is not the standard cardiocentric model of circulation (in which blood flows in a simple pulmonary-systemic double loop); it is a more complex pattern in which the deep hepatic circulation and the peripheral extremity circulation are interleaved in a crossing figure-eight topology.

Second, the reading indicates that even when a limb is physically absent, the bioelectrical pattern of the circulation persists as if the full body were present — the person with an amputated limb may feel as if both limbs are present during Radial Appliance application, because the Radial Appliance's circuit is engaging the body's complete bioelectrical circulatory template, not merely the physically present tissue. The missing extremity is to be used as the alternate attachment in each Radial Appliance session — the electrode placed as if it were still attached to the missing limb — because the bioelectrical template of the whole-body circuit is still active and accessible, even in the absence of the physical limb.

This is one of the most remarkable clinical instructions in the readings, and one of the most significant theoretical claims about the nature of the body's bioelectrical system. It implies that the body maintains a spatially distributed bioelectrical template of its complete anatomical form — a template that persists even after physical tissue is lost. This is precisely the concept that Michael Levin's bioelectrical research (Levin, 2014) has most dramatically illustrated. Bioelectrical information for the whole body remains intact as a template or blueprint that can be accessed for regeneration. Changes in bioelectrical information associated with

severing a limb are instantly reflected in the remaining intact limb. The phantom limb phenomenon in reading 1800-16 is, in the readings' framework, not merely a neurological illusion but a bioelectrical reality. The template of the missing limb is still present in the body's bioelectrical field, and the Radial Appliance can engage it directly.

The figure-eight topology of the circulation is also significant for understanding the Radial Appliance's therapeutic circuit. If the normal circulation traces a figure-eight pattern in which the hepatic (deep) circulation intersects the peripheral (superficial) circulation, then the Radial Appliance's circuit — flowing from one extremity through the body to the other extremity on the opposite limb — is tracing the same figure-eight path through the body's own bioelectrical circulatory template. The Radial Appliance is not imposing an external circuit upon the body; it is engaging a pre-existing bioelectrical pattern that reflects the body's actual circulatory topology. This is fully consistent with the readings' insistence that the Radial Appliance works with the body's own energies rather than introducing external forces.

The cardiocentric model of circulation — in which the heart is the sole driver of blood flow, pumping blood in a simple pressure-gradient circuit — has increasingly been challenged in the modern research literature. Beraia and Beraia (2018) document several measurable anomalies in the cardiocentric model. Blood flow acceleration increases rather than decreases with distance from the heart. Total pulse wave energy in the arterioles is up to seven times higher than in the ascending aorta. Electrical ejection volume suggests that the heart's 1-2 watt mechanical output is insufficient to account for observed blood distribution throughout the body's approximately 105 kilometers of vasculature. Furst and González-

Alonso (2025) similarly propose that the periphery plays a key role in controlling the magnitude of blood flow to the heart, coupling peripheral and central circulations in a model that departs significantly from the simple cardiocentric view.

The readings' figure-eight pattern of circulation — in which the hepatic deep circulation and the peripheral extremity circulation are interleaved rather than independent — suggests a model of blood flow consistent with these alternative perspectives. It is a model in which the peripheral bioelectrical activity of the circulatory system (including the electromagnetic activity of erythrocytes and the vascular gap junction network) contributes actively to the circulation rather than passively receiving the heart's mechanical output. This is a model in which the Radial Appliance's influence at the extremities — far from the heart — can have genuine systemic effects because the periphery is itself an active participant in the bioelectrical regulation of the circulation, not merely a downstream recipient of cardiac output.

Magnetic Healing and the Cardiovascular System

The readings' discussions of biomagnetism in the cardiovascular system extend beyond the Radial Appliance to the practice of magnetic healing — what some religious practitioners call "laying on of hands" — in which the bioelectrical and magnetic forces of one person's body are directed through the hands to influence the bioelectrical and magnetic state of another person's body. The readings provide specific instructions for implementing this technique, varying the location of the hands dependent upon which organs need the healing.

Place the hands on the body at these areas, you see - and let it be a right-handed individual: Put the left hand under the body at the area opposite the liver - that is, on

the back, you see - and the right hand over the liver area - in front, you see. Hold the hands in this position, steady, for a period of some five to ten minutes - for this vibration that will be produced. (3035-1)

This practice is directly related to the cardiovascular bioelectrical system because the hands — whose strong arterial pulse makes them natural nodes of the cardiovascular bioelectrical circuit — are the primary conductors of the magnetic healing influence. The theoretical basis for magnetic healing in the readings is the same as the theoretical basis for the Radial Appliance. The body generates a magnetic field through its circulatory activity, and that field can be equalized, redistributed, or supplemented through appropriate contact with another body's magnetic field — or with an appliance that works magnetically with the body's own forces. The Radial Appliance is, in effect, a mechanical instrument for achieving a version of what magnetic healing achieves organically: the equalization of the body's circulatory magnetic field through an influence applied at the extremities.

This connection between the Radial Appliance and magnetic healing is not incidental. The readings describe both as working with "the low form of electrical vibration" (141-1) that constitutes the body's bioelectrical foundation — the same low vibratory level at which the body's battery operates and at which the Radial Appliance's re-ionizing influence is introduced. Both practices engage the body's magnetic field at the level of the circulatory system, through the peripheral nodes where that field is most accessible, and both achieve their effects by normalizing and equalizing the field rather than by overwhelming it with external energy.

The Battery of the Body in the Cardiovascular Context

Section 1 established the body's battery with its liver-kidney polarity operating through the blood as the body's primary bioelectrical generator. The cardiovascular bioelectrical context developed in this section allows several dimensions of that battery concept to be understood more precisely.

The four-organ ensemble of heart, lungs, liver, and kidneys constitutes an integrated bioelectrical system in which the cardiovascular components (heart and lungs) serve the metabolic polar components (liver and kidneys) by maintaining the circulatory medium through which the battery's generated energy is distributed. But the cardiovascular system is not merely the medium — it is, through the electromagnetic activity of the erythrocytes and the vascular bioelectrical architecture, itself a generator and propagator of bioelectrical forces. The figure-eight pattern of circulation in which the blood passes through the liver before completing its extremity circuit places the liver's positive metabolic transformation of the blood in intimate relationship with the peripheral circulation — the hepatic battery charges the blood at the liver, and that charged blood then distributes through the entire vascular tree, including to the peripheral pulse points where the Radial Appliance makes its bioelectrical contact.

Reading 2642-1's reference to "the seven centers of propagation" through which the heart, lung, liver, and kidney circulation is sustained (discussed in Section 2) takes on additional specificity in this context. The seven centers of propagation are the pineal system's bioelectric nodes — but they are also the nerve supply centers for the cardiovascular organs. The pineal system's distributive network, as described in Section 4, governs not only glandular and neurological function but the bioelectrical organization of the circulatory system

through its nerve supply to the organs of the body's battery. When reading 2642-1 states that the seven centers sustain the heart-lung-liver-kidney circulation, it is describing a direct physiological relationship. The bioelectrical integrity of the cardiovascular system depends on the integrity of the pineal system's centers, which in turn govern the sympathetic nerve supply to the heart, lungs, liver, and kidneys.

This means that the Radial Appliance's equalization of the circulatory magnetic field and the Wet Cell's engagement of the pineal spinal centers are not two separate therapeutic mechanisms operating independently on different systems — they are two modes of access to the same integrated cardiovascular-pineal system, working from opposite ends of the bioelectrical hierarchy. The Radial Appliance works from the periphery inward, normalizing the magnetic field of the circulatory system through the extremity circuit and allowing this normalization to propagate through the vascular bioelectrical infrastructure to the deep circulation and the hepatic battery. The Wet Cell works from the umbilical centers outward, restoring the pineal system's organizational signals to the cardiac nerve supply and the hepatic organs, and allowing this restoration to propagate through the sympathetic network to the circulatory system. Together they address the cardiovascular bioelectrical system from both directions.

A Note on the Challenge to the Cardiocentric Model

The readings' figure-eight circulation pattern and their account of the body's battery as a primary generator of vital energy distributed through the blood both imply a model of cardiovascular function that departs significantly from the standard cardiocentric model. In the readings' framework, the heart is the central circulatory organ — but it is one element of a four-organ bioelectrical ensemble, not the

sole driver and regulator of the body's circulatory vitality. The liver and kidneys contribute the bioelectrical charge that gives the blood its vital quality; the lungs provide the oxidative substrate for this metabolic polarity; and the heart circulates the charged blood through a figure-eight pattern that keeps the peripheral and deep circulations in continuous relationship.

This is not presented here as a refutation of the cardiocentric model — the readings are not making claims about the relative pressure contributions of cardiac contraction and peripheral vascular resistance. They are describing the bioelectrical dimension of circulatory function, for which the cardiocentric mechanical model provides an incomplete account. The convergence between the readings' bioelectrical account and the challenges to the cardiocentric model raised by Beraia and Beraia (2018), Furst and González-Alonso (2025), and Li and Pollack (2023) is noted as a fruitful area for further investigation. It is not intended as confirmation that any of these modern alternatives is the definitive successor to the cardiocentric view, but as evidence that the questions the readings raise about the bioelectrical nature of circulation are genuine scientific questions that remain open and active.

Conclusion

The seven sections of this appendix have traced a single coherent system across a range of levels and scales — from the metabolic polarity of the hepatic battery to the electromagnetic field of the cardiovascular system, from the atomic electronic vibration that constitutes the body's fundamental nature to the pineal-lyden axis through which the creative life force enters physical expression. What has emerged is not a collection of loosely related bioelectrical

observations but an integrated framework in which each level presupposes and depends upon the others, and in which the therapeutic appliances engage this framework from multiple points of access simultaneously.

The logic of the framework can be summarized in the hierarchy it establishes. The creative life force — identified in reading 1299-1 as the fundamental reality from which all physical manifestation derives — is regulated and channeled through the pineal-lyden axis, moving from the lyden through the seven spinal centers outward to the organs and tissues. This organizational signal, established at the moment of conception and maintained throughout life as the body's primary developmental template, is what the readings call the body's vibratory system in its most comprehensive sense.

The sympathetic nerve system is a key physical substrate through which this vibratory organization is conducted and coordinated. The battery of the body — the four-organ ensemble of heart, lungs, liver, and kidneys, with its hepatic polarity of liver as positive and kidneys as negative — generates and distributes vital energy through the blood, impressing upon each cellular unit the electrochemical charge necessary for its sustenance. The umbilical-solar plexus network receives and distributes vibratory-elemental forces through the abdominal assimilation center, bridging the therapeutic action of the appliances to the deep regenerative pathways of the pineal system. And the cardiovascular system — with its electromagnetic activity, its erythrocyte vibrational dynamics, and its figure-eight circulatory topology — is the body-wide medium through which all of these systems communicate and sustain one another.

The two therapeutic appliances discussed in detail, engage this hierarchy from opposite ends. The Radial Appliance works at the

periphery, equalizing the body's circulatory magnetic field through the extremity circuit, re-ionizing the blood, and bringing the sympathetic vibratory system into coherent equilibrium — all without introducing any external electrical energy, working instead with the body's own radial forces. The Wet Cell Battery works at the center, introducing the extremely low direct current and vibratory properties of its metallic solutions through the umbilical-solar plexus assimilation center and the centers of the pineal system's distributive network. It engages the body at the level of its highest bioelectrical organization, where development and regeneration, physical healing and spiritual attunement, meet in the same anatomical nodes.

The modern bioelectrical research surveyed throughout this appendix — Becker's DC spinal potentials, Levin's morphogenetic bioelectrical fields, Beraia and Beraia's electromagnetic blood flow dynamics, the gap junction and ephaptic mechanisms of cardiac conduction — does not confirm the readings' framework. It cannot, because it addresses different questions using different methods in a different conceptual vocabulary. What it does provide is evidence that the questions the readings raise — about the body as an intrinsically electrical system, about the bioelectrical nature of development and regeneration, about the therapeutic potential of subtle electrical forces at body-level frequencies — are genuine scientific questions that remain open, active, and productive. The readings' answers to these questions are the readings' own. They stand or fall on the basis of the evidence assembled throughout this appendix and applied in practice, not on their convergence or divergence with any particular modern research program or theoretical model.

What the readings offer that modern bioelectrical research does not is a unified account. They portray a framework in which the body's bioelectrical organization, its developmental origins, its pathological vulnerabilities, its therapeutic restoration, and its relationship to mind and spirit are all aspects of a single, coherent reality. Reading 1800-4's principle that the body is constituted by electronic vibration, with each atom, element, organ, and organism maintaining its characteristic unit of vibration necessary for its sustenance and equilibrium, is not a metaphor or a partial description. It is, in the readings' view, a complete account of what the body is and how it works. The battery concept, the vibratory hierarchy, the figure-eight circulation, the pineal-lyden axis, the centrosome's cellular emotion, the kundalini's passage through the seven centers — these are not separate ideas loosely associated under the heading of bioelectricity. They are dimensions of the single reality that reading 1800-4 describes — a reality in which life itself, in its physical expression, is nothing other than organized electronic vibration.

The practical implications for understanding the electrotherapeutic appliances are startling. The Radial Appliance and Wet Cell Battery are not devices that impose external electrical forces upon a passive body. They are instruments designed to work with the body's own bioelectrical system. In theory they operate at the appropriate level, in the appropriate frequency range, through the appropriate anatomical pathways — to restore the vibratory coordination that health requires and that disease disrupts. Their effectiveness, in the readings' account, depends not only on correct physical application but on the integration of all the levels of the system they engage:

- the mechanical (spinal manipulation to relieve impingement),
- the metabolic (diet and hydrotherapy to support elimination and assimilation),

- the mental-spiritual (suggestion, meditation, prayer, and constructive attitude to engage the higher vibratory levels of the pineal system).

The readings' insistence that "one activity becomes then dependent upon another" (271-3) is the practical expression of the framework this appendix has described. It is a multi-level, integrated bioelectrical system in which intervention at any one level is incomplete without attention to the levels above and below it.

The framework presented here is, as the opening sections acknowledged, one component of a larger inquiry. The body's bioelectrical system as described in the readings extends beyond what the physical readings alone can fully document. The life readings, the spiritual readings, and the readings for the Glad Helpers healing group — particularly those addressing the pineal system, the seven centers, and the relationship between consciousness and the glandular-neural architecture of the body — provide a further dimension that the present appendix has introduced but not exhaustively treated. That dimension — the bioelectrical basis of the body-soul interface, and its implications for understanding consciousness, spiritual development, and the ultimate regenerative potential of the human entity — points toward the larger project of which this appendix is a part. That purpose is to provide a systematic account of anatomy, physiology, and pathology as described in the Cayce readings, in which the body's bioelectrical nature is not a peripheral or exotic dimension but the very foundation from which all the other dimensions of its life derive their organization and their meaning.

Appendix C: Sympathetic and Cerebrospinal Incoordination

[Note: This appendix was included in "The Treatment of Epilepsy" (McMillin, 2022) and is included here to supplement the main book text content on nervous system coordination/incoordination and related topics. Although the specific context for this material relates directly to epilepsy, the basic concepts illustrate the readings' approach to system coordination across all aspects of anatomy, physiology, and pathology.]

Introduction

The scientific study of the nervous system is a constantly changing, evolving process that relies on "man-made concepts, i.e., verbal maps, intended to describe and account for certain empirically observable aspects of the structure and function of the nervous system." (Meyers, 1953, p. 630) As such, the nomenclature of neurological anatomy, physiology, and pathology reflects the transitional values and biases of any given time period. It has always been a moving target, but the pace of concept building and verbal mapmaking seems to be accelerating with the explosion of information and technology in modern neuroscience.

Incoordination between the sympathetic and cerebrospinal nervous systems is cited as a core pathophysiological feature in the readings on epilepsy. To fully appreciate the meaning of that *incoordination*, it is essential to understand the historical context of anatomy and physiology during the early decades of the 20th century when Edgar Cayce began giving readings — and then to translate that perspective into modern neurological *concepts* and *verbal maps*. To be sure, compared to the current lexicon, there are significant

differences, not only in terminology, but conceptually as well. For example, consider these definitions and descriptions provided in Gray's Anatomy (1901):

The nervous tissues of the body are comprised in two great systems – the cerebro-spinal and the sympathetic; and each of these systems consist of a central organ, or series of central organs, and of nerves. The cerebro-spinal system comprises the brain (including the medulla oblongata), the spinal cord, the cranial nerves, the spinal nerves, and the ganglia connected with both these classes of nerves. The sympathetic system consists of a double chain of ganglia, with the nerves which go to and come from them. It is not directly connected with the brain or spinal cord, though it is so indirectly by means of its numerous communications with the cranial and spinal nerves. All these nervous tissues are composed chiefly of two different structures – the gray or cineritious and the white or fibrous. It is the former, as is generally supposed, that nervous impressions and impulses originate, and by the latter that they are conducted.... (p. 1113)

The simplistic approach to translating these terms into modern anatomy and physiology is to equate *sympathetic* with the *autonomic nervous system* (ANS) and *cerebrospinal* with the *central nervous system* (CNS). And certainly, there is some basis for such an interpretation (as will be discussed below). But this can lead to confusion with regard to the meaning of *incoordination* between the systems as described in the readings on epilepsy.

First, note that the historic definition of the *sympathetic system* is essentially the same as the modern sympathetic system (the chain ganglia along the spine and associated nerves in the viscera). But the historic description of the sympathetic nervous system DOES NOT

include the parasympathetic division of what is now called the ANS. Furthermore, the historic definition of the cerebrospinal system DOES include the cranial and sacral outflow of what is now called the parasympathetic. Thus when the readings discuss *incoordination between the sympathetic and cerebrospinal nervous systems*, one of the possible forms of that incoordination could be described in modern terminology as an incoordination WITHIN the ANS (i.e., BETWEEN *sympathetic* and *parasympathetic*). In the modern epilepsy literature it is more often called an "imbalance" or "dysregulation" between the sympathetic and parasympathetic divisions of the ANS. As the review of ANS involvement in epilepsy documented in *The Treatment of Epilepsy* (McMillin, 2019) demonstrates, that form of incoordination is pervasive and noteworthy.

And yet, there are other possible ways of interpreting the sympathetic/cerebrospinal incoordination as portrayed in the readings. To grasp these other possibilities, it is necessary to fully appreciate the sympathetic nervous system (SNS) as viewed historically.

The Great Sympathetic System

Given our modern infatuation with the brain and all things cortical, it is easy to appreciate the designation of "great" that Gray's Anatomy applies to the cerebrospinal system — particularly if one simply translates it as the modern CNS. The nervous system of the brain and spinal cord is certainly *great* by any standard one wishes to apply. And yet, Gray's Anatomy was inclusive: "two great systems – the cerebro-spinal and the sympathetic." Simply considering the sympathetic as a *great system* on a par with the cerebrospinal might be a conceptual stumbling block for some who are not aware of the historical perspectives on the subject. As a beginning, the name of Jacques Winslow (1669-1760), one of the

most brilliant anatomists of the 18th century, is "undissociable from the history of the sympathetic nervous system" (Olry, 1996, p. 190). Winslow's insights into the cervical sympathetics, exemplified by his modification of existing terminology by replacing the term "intercostal nerve" with that of the "great sympathetic nerve," established an aura of greatness surrounding the entire sympathetic system that endured for over 150 years.

For example, referring to the vegetative aspect of sympathetic nerve function, Cruveilhier (1844, p. 765) called the "great sympathetic system" the "apparatus of nutritive life." Howard (1885, p. 591) spoke of the trophic and vasomotor functions of the "great sympathetic system." Atkinson (1910, p. 11) acknowledged "the Great Sympathetic System which controls the involuntary movement and processes, such as the processes and functions of nutrition, secretion, reproduction, excretion, the vasomotor, etc." The readings reflect a deep attunement to the philosophy and practice of the early osteopathic physicians who, beginning with Still (1899, p. 232), wrote of the "great sympathetic system of the nerves of life."

The point is simply that the modern concept of the sympathetic nervous system does not do justice to its historical predecessor, the *great sympathetic system*. This can be a major hindrance for anyone seeking to understand the Cayce health readings, and particularly the meaning of sympathetic/cerebrospinal incoordination. Specifically, with regard to the readings on epilepsy, the primary concern is that the sympathetic/cerebrospinal incoordination cited so often in the readings is *not necessarily* BETWEEN the ANS and CNS (as might be easily assumed). Rather it *may* very well be an incoordination WITHIN what is now called the ANS — that is, between the sympathetic and the parasympathetic (which historically fell within the domain of the cerebrospinal).

As the nomenclature (and underlying conceptualization of nervous system relationships changed) and the designation of "autonomic" became accepted (with subdivisions of sympathetic, parasympathetic, and enteric), the sense of a distinct, *great sympathetic nerve system* was lost. This was formalized by Langley (1921) which eventually led to the idea that the ANS consisted of two equal divisions that were antagonistic — *sympathetic* (fight or flight) and *parasympathetic* (rest and digest). Until recently the *enteric* branch of the ANS (which had previously been part of the *great sympathetic system*) has largely been ignored (or least underappreciated). Thus the sympathetic division of the ANS (in modern terms) hardly even deserves recognition as a system — quite a fall from grace. Osteopathic researcher Irvin Korr lamented the loss of status of the sympathetic as a system:

Among the most persistent myths is that the two divisions of the ANS, the sympathetic and parasympathetic, are equal and opposite moieties, one being inhibitory where the other is excitatory, one positive, the other negative, one yin, the other yang. The implication usually conveyed is that normal life is a nicely balanced tug-of-war between these two divisions, and that it is the physician's function to redress "autonomic imbalance," usually with appropriately -lytic or -mimetic medications. Although this view is widely held by physicians (and others), it will be shown that the two divisions are vastly different systems. Indeed, only one of them, the sympathetic, can truly be called a system. They differ in their basic design, central origins, peripheral distributions (overlapping though it is), and the sensory stimuli to which they respond. (Korr, 1979, p. 214)

The current nomenclature with its verbal maps is unlikely to change any time soon. Unfortunately, in losing a sense of the sympathetic as

a great system, its role in the cause and treatment of epilepsy can be missed — but more on that later. For now, with the understanding that the epilepsy readings *may* be referring to ANS incoordination as a primary factor in epilepsy, the focus will be on exactly how that might happen within the brain (and save the peripheral implications for later).

The ANS Incoordination Model

The ANS incoordination model relates directly to the modern epilepsy literature where dysfunction is WITHIN the ANS (i.e., BETWEEN the sympathetic and parasympathetic). Terms such as ANS *imbalance* and *dysregulation* are used to describe the *incoordination*. Keep in mind that the modern parasympathetic division of the ANS was regarded (in the readings and historical sources) as part of the cerebrospinal.

Anatomically, the readings on epilepsy typically portray the sympathetic/cerebrospinal incoordination as manifesting subcortically in the medulla oblongata. If one accepts the premise of peripheral irritation being transferred to the brain, the medulla oblongata is the logical target for said incoordination. In modern terms, that is where the sympathetic and parasympathetic nerve centers coordinate for vital cardiovascular and respiratory functions, both of which are well documented in epilepsy.

Autonomic symptoms associated with epileptic seizures can be divided into cardiovascular changes, respiratory manifestations, gastrointestinal symptoms, cutaneous manifestations, pupillary symptoms, genital and sexual manifestations, as well as urinary symptoms (Baumgartner et al., 2001). In each instance, to some extent, the normal homeostatic balance between sympathetic and parasympathetic is disrupted as represented by incoordination

within the ANS and symptomatic manifestations. Because cardiovascular and respiratory ANS incoordination has received a great deal of attention due to possible linkage to SUDEP, a significant literature has been generated, which will now be briefly reviewed within the context of the readings on epilepsy.

ANS Cardiovascular Incoordination in Epilepsy

Normal cardiovascular function is a complex interaction of peripheral and central nervous system processes that relies on coordinated activity of sympathetic and parasympathetic centers within the medulla oblongata. This physiology is commonly represented as equal competing opposites: sympathetic tone (fight or flight) increases cardiovascular activity vs. parasympathetic tone (rest and digest) having the opposite effect. And yet, it is important to keep in mind that the sympathetic and parasympathetic are not necessarily equal and opposite factors in ANS coordination:

With regard to autonomic control of the cardiovascular system, it is important to dispel a common fallacy . . . that parasympathetic and sympathetic neurons exert equal but opposing effects on all target tissues. Parasympathetic neurons innervate the heart and a small number of blood vessels, limiting their influence largely to the control of cardiac function. In contrast, sympathetic neurons innervate the heart, blood vessels, adrenal glands, and kidneys, providing for widespread direct and indirect control of cardiac and vascular function. Thus, neural control of the cardiovascular system is governed mainly by the activity of the sympathetic nerves, with a limited but important cardiac effect of the parasympathetic nerves. (Thomas, 2011, p. 29)

Thus in cardiovascular function we catch a glimpse of the *great sympathetic system* — even within the modern concept of the ANS.

With this reservation in mind, note that medullary cardiovascular control centers receive neural input (afferent and efferent) from both peripheral and central autonomic network (CAN) sources. In particular, the nucleus tractus solitarius (NTS) in the dorso-medial region of the medulla is the primary parasympathetic center in the medulla that can influence cardiac function directly (via vagal outflow to the heart mediated by NTS neurons that synapse on preganglionic parasympathetic neurons in the dorsal motor nucleus of the vagus and the nucleus ambiguus) — and indirectly via inhibition of a major sympathetic center in the rostral ventrolateral medulla (RVLM) responsible for cardiac output and vascular resistance (Dampney, 1994). The sympathetic activity in the RVLM is tonic — that is, continuous and is regulated by an intrinsic pacemaker (as reviewed by Accorsi-Mendonça et al., 2016). Thus the pre-sympathetic neurons of the RVLM provide tonic activity in contrast to those in the parasympathetic nucleus ambiguus which show reflex activity dependent on sensory inputs (Delamonta & Walker, 2011). Without inhibition by the parasympathetic projections from the NTS, sympathetic RVLM output to the cardiovascular system is sympathetic dominant. Thus with regard to cardiovascular function, maintaining the appropriate balance of tonic excitation (sympathetic) and situational inhibition (parasympathetic) involves *coordination* between sympathetic and parasympathetic centers within the medulla oblongata.

With regard to epilepsy, cardiac manifestations of excessive sympathetic activation are common during most seizures causing tachycardia and hypertension. On the other hand, parasympathetic activation (or excessive sympathetic inhibition) can result in bradycardia and hypotension. Combinations of sympathetic and parasympathetic activation and inhibition may occur

simultaneously or sequentially during seizures (Kothare & Singh, 2014).

In addition to clinical indications of abnormal cardiovascular function in epilepsy, analysis of heart rate variability (HRV) in epilepsy patients can reveal ANS incoordination. The rhythm of a normal heart is characterized by significant beat-to-beat variability that depends on the balance between parasympathetic and sympathetic innervation of the heart that can be disrupted in epilepsy (Goit et al., 2016):

In conclusion, HRV showed that patients with epilepsy were accompanied by a significant increase in sympathetic control and a significant decrease in parasympathetic control. Hence, our study suggests that cardiac autonomic dysfunction is present in untreated patients with epilepsy. (Goit et al., 2016, p. 4)

Another ANS cardiovascular abnormality in epilepsy is an increase in cerebral blood flow velocities associated with elevated sympathetic activity, even during the interictal period (i.e., between seizures). Sympathetic influence on systemic blood flow produces characteristic M waves (3-9 cycles per minute). "Enhanced M waves in epileptic patients may reflect increased sympathetic activity even in the absence of seizures." (Diehl et al., 1997, p. 2457) Thus, with regard to cardiovascular dysfunction in epilepsy, an *incoordination between sympathetic and cerebrospinal* (i.e., within the ANS) is very plausible and well represented in the modern literature.

Respiration Abnormalities in Epilepsy

Respiration is produced by medullary respiratory rhythm generators and are modulated from various sites in the lower brainstem, which are then output as motor activities through premotor efferent networks in the brainstem and spinal cord (Ikeda

et al., 2017). Neurons that help trigger inspiration are in the dorsal medulla, near the NTS and in the ventral medulla, near the nucleus ambiguus. Neurons that help trigger expiration are near the nucleus ambiguus, between zones that appear to govern inspiration. The pre-Botzinger complex in the rostral ventrolateral medulla has been proposed as a primary site of respiratory rhythm generation (Blum, 2009; O'Regan & Brown, 2005). Although sympathetic oscillations in the ventral medullary neurons coupled to the respiratory activity have been suggested as an important homeostatic mechanism optimizing tissue perfusion and blood gas uptake/delivery, parasympathetic NTS neurons also play an essential role in coordinating respiratory and sympathetic adjustments in response to activation of peripheral cardiovascular and pulmonary afferent inputs (Zoccal et al., 2014).

Neurons in the rostral medulla that are modulated by serotonin and norepinephrine have been linked to respiratory dysfunction and sudden unexplained death in epilepsy (Moseley et al., 2012). Inhibition of brainstem respiratory control circuits likely subserves epileptic ictal respiratory changes (Blum, 2009). Thus ANS incoordination at the level of the medulla oblongata is one possible form of *incoordination between sympathetic and cerebrospinal* that may play a role in epilepsy and possibly even SUDEP.

Voluntary and Involuntary Motor Activity

Abnormal motor activity is common in various types of epileptic seizures ranging from relatively mild focal movements to violent tonic-clonic convulsions. The mainstream *corticocentric* approach is content to assign causation to the seizure itself affecting the motor cortex resulting in aberrant motor activity.

From the Cayce perspective, *incoordination between the sympathetic and cerebrospinal* nervous systems can cause or contribute to motor activity during seizures. The readings discuss this aspect of incoordination in terms of *voluntary* and *involuntary* nerve activity. For example, in [case 1625](#):

Now as we find, there are definite [lacteal duct] adhesions which prevent the normal reaction between impulse and the activity of the cerebrospinal system – or the voluntary and involuntary nerve center, or the ungoverning by the adhesion and its effect upon the cerebrospinal and nervous system and the sympathetic of that governor of the impulse through the medulla oblongata. (1625-1)

The pathophysiology of this case involves lacteal duct adhesions affecting the pineal system with reflexes to the "*governor of impulse through the medulla oblongata*". That is the location of a major pineal center that regulates nerve impulses, especially of the sympathetic in its coordination with the cerebrospinal. Also note that the incoordination prevents "*the normal reaction between impulse and activity of the cerebrospinal system.*" *Impulse* and *activity* are associated with white and gray matter in the brain, respectively. Thus normal neurotransmission of impulses within the brain is prevented resulting in impaired consciousness and abnormal motor activity. Normal voluntary movement becomes abnormally involuntary (out of conscious control). A similar pattern of incoordination is present in [case 1001](#):

We find the physical forces are still on the improve; that is, there is more near the normal balance of the physical forces. This balance must, necessarily, become such as that all of the impulses, whether of the voluntary or involuntary nature, become coordinant with the cerebro-

spinal reflexes, both to the brain and to functioning organs or impulses towards functioning of voluntary or involuntary nature. (1001-6)

Normal voluntary movements involve striated muscles controlled by the corticospinal tracts operating through the pyramidal system. They are consciously controlled via the motor cortex. Walking, shaking hands, standing and sitting, etc. are typical normal voluntary movements. Normal involuntary muscle activity is typically associated with smooth muscle (no visible striations) found primarily in the walls of hollow organs (such as digestive tract, blood vessels, urinary bladder) and other tissues (such as the iris). Normal involuntary muscle activity is controlled by the ANS (mostly sympathetic), hormones, and intrinsic factors in the organ (Carroll, 2007). For example, the motor activity of the smooth muscle of the heart is regulated in the medulla oblongata without conscious volition — it is involuntary.

During epileptic seizures normal voluntary muscle activity becomes pathologically involuntary, manifesting in symptoms such as generalized convulsions or focal motor events. From a corticocentric perspective, this is explained as an effect of the seizure on the motor cortex and its pyramidal tracts that control peripheral striated muscles. However, voluntary and involuntary motor activity (and particularly the abnormal involuntary motor activity associated with seizures) may be a little more complex than the simple corticocentric model suggests.

For example, a set of experiments performed by Johann Prus in 1898 called into question the dominant role of the cerebral motor cortex and associated pyramidal tracts in epileptic motor events. Prus unilaterally transected the pyramidal tract in dogs and observed that bilateral epileptic seizures occurred on stimulation of the cerebral

cortex, on the same as well as the side opposite the electrical stimulation (Louis, 1993). These experiments led Prus to the recognition of "extrapyramidal tracts":

As a physiologist, Prus was interested in asserting that the pyramidal tracts were the pathways through which epileptic activity experimentally evoked from the cerebral cortex was transmitted to the spinal cord. To test his hypothesis he cut the pyramidal tracts in the internal capsule, peduncle, pons, pyramid, and spinal cord, first on one, then on both sides. Contrary to his expectation the pyramidal sections did not prevent the occurrence of seizures at all. Prus then postulated that the epileptic activity reached the spinal cord through alternative motor pathways that necessarily lay outside the pyramidal tracts, for which he coined the term "extrapyramidal tracts". (de Oliveira-Souza, 2012, p. 844)

Although the conceptual evolution of the extrapyramidal system in the 20th century was "an amalgam of disparate and often conflicting ideas with a tortuous history," the excellent review by de Oliveira-Souza & Tovar-Moll (2012) concludes that "the extrapyramidal concept is a valid and robust anatomic concept as long as it strictly refers to the collection of descending fibers originating in a few discrete brainstem tegmental motor nuclei that project to the spinal cord." (p. 280) Specifically, the extrapyramidal system in humans is composed of a collection of six tracts that originate in brainstem motor cell groups — medial and lateral reticulospinal, medial and lateral vestibulospinal, medial tectospinal, and lateral rubrospinal (de Oliveira-Souza, 2012).

This formulation of the extrapyramidal system (particularly with its implications for epileptic seizure motor symptoms) is reminiscent of the animal research done to investigate the centrencephalic theory.

In that body of data, brainstem and spinal nerve physiology was shown to be sufficient to explain convulsive motor activity in experimental seizures.

Even at the subcortical and peripheral level there is an aspect of striated muscle control that involves the sympathetic system — not in the sense of the rather diluted sympathetic branch of the ANS that is often presented as simply the counterpart of the parasympathetic. Rather this aspect of sympathetic functioning is more reflective of the *great sympathetic system* of historical import.

The first and most obvious sympathetic involvement in striated muscle is vasomotor control regulated primarily via the sympathetic RLVM center in the medulla oblongata. Sympathetic vasomotor control of blood vessel diameter regulating circulation to skeletal muscle is an indirect influence that has been known and accepted for many years. Recent experimental research also indicates a direct sympathetic involvement in muscle junctions (Straka et al., 2018).

Although many effects of the sympathetic system on skeletal muscle physiology and disease are known, direct sympathetic innervation targets in skeletal muscle have been scarcely studied. We investigated this aspect and found that neuromuscular junctions, the contact points between motor neurons and muscle fibers, are innervated by sympathetic neurons, which is of crucial importance for the integrity and function of nerve-muscle contact. (Khan et al., 2016, p. 746)

As with most aspects of sympathetic activity, influence of striated skeletal muscle is essentially unconscious and involuntary (with possible exceptions for biofeedback and advanced yogic techniques). The larger question of whether such sympathetic activity plays a role in epileptic seizures is unknown.

Simplistically, voluntary and involuntary aspects of seizure motor events can be regarded as a manifestation of consciousness. From the perspective of the readings, full waking consciousness requires coordination between the sympathetic and cerebrospinal systems. The incoordination associated with seizures temporarily suspends conscious (voluntary) control of motor activity that is compromised and becomes involuntary. The precise nature of any sympathetic system involvement (i.e., the historical concept of the "great sympathetic system" adopted in the readings) is unclear as to whether it may involve extrapyramidal or direct and indirect sympathetic influence on striated skeletal muscles. In either case, subcortical involvement of nerve centers in the lower brainstem (and particularly the medulla oblongata) is likely. Thus voluntary motor activity becomes involuntary during epileptic convulsive seizures as a direct result of *incoordination between the sympathetic and cerebrospinal* systems in that region.

The Pineal System and Nervous System Incoordination

As discussed in Appendix A, the *pineal system* is the *coordinating* and *integrating* system of the body. At the highest level, the *pineal system* coordinates and integrates spiritual and mental activity with the physical body. It is the body-soul connection. The pineal/Leydig gland axis is its core, which the readings called the "*seat of the soul*."

With regard to the theme of sympathetic/cerebrospinal nervous system incoordination (and the various ways in which it may manifest), it is essential to understand what the readings meant by the phrase ". . . *the sympathetic system or the brain manifestation of soul forces in the body* . . ." (4566-1) That the sympathetic nervous system could be regarded as the brain of the soul, is one of the most

challenging aspects of grasping the expansive concept of the *great sympathetic system*. Pathologically in epilepsy (and certain other conditions such as schizophrenia, McMillin, 1991) this infers that the spiritual and mental aspects of the soul are unable to fully coordinate with the physical body. Thus psychological and/or psychiatric symptoms are apparent. This is the form of sympathetic/cerebrospinal incoordination to be explored in this subsection.

In reviewing the readings, the *great sympathetic system* has three faces: the *imaginative system*, the *vasomotor system*, and the *vegetative system*. The work of Byron Robinson (1907), a medical doctor who wrote a major treatise on the sympathetic system (*The Abdominal and Pelvic Brain*, 670 pages and 207 detailed anatomical drawings), proved particularly helpful in illuminating this framework. McMillin (1997) compiled a comparative study drawing on selections from Robinson's text alongside the readings. Here is a selection from Chapter Seven titled: "The Imaginative System":

The Cayce readings called the sympathetic system the nervous system of the unconscious mind (which is the mind of the soul). He contrasted it with the cerebrospinal nervous system which is more closely associated with the conscious mind and a primary focus on the material world. Cayce's expression for this aspect of sympathetic functioning was the "imaginative system." He maintained that unconscious psychological processes affected the "vegetative" and "vasomotor" aspects of sympathetic functioning by imagination, resulting in psychosomatic illness and psychosomatic healing. In other words, the sympathetic system is a key component of the "mind-body" connection in health and healing. (McMillin, 1997, p. 87)

With this bit of background on how the *imaginative* face of the *great sympathetic system* functions as a key component in the body-soul connection, we can now explore how all of this relates to nervous system incoordination in epilepsy with regard to *pineal system* involvement. I have chosen to use the term *pineal system* to portray specific anatomical structures and physiological activities in the body that coordinate and integrate the spiritual and mental with the physical body. However, the term *pineal system* is not found in the readings. A term that is used in the readings that can be considered synonymous with the *pineal system* is the "*imaginative and impulsive system*." Whereas *pineal system* easily accommodates both anatomy and physiology, the use of the expression *imaginative and impulsive system* in the readings is more functional, expressed in a variety of ways such as ". . . incoordinations between the sympathetic (or the *imaginative and impulsive system*) and the physical or cerebro-spinal system." (4381-1) In a reading for a woman having problems sleeping, the cause was said to be:

Produced by the nerve pressures, that tend to make for improper coordination between sympathetic and cerebrospinal system; for the cerebrospinal is to the whole of the physical body as of that of IMPULSE to carry out conditions of the living physical organism, while the sympathetic system is rather that of the imaginative, or akin to the psychic and to the operative forces of the brain centers and impulses. Without coordination, these bring restlessness and insomnia. (5601-1)

This is an example of specific aspects of the *great sympathetic system* — aspects pertaining to the incarnation of the soul in a physical body through the *imaginative and impulsive* forces of the pineal system (which are particularly active during sleep). Sleep and epilepsy are closely interrelated which is evident in [case 1784](#) where a young man

with epilepsy was experiencing disturbed sleep with possible nocturnal seizures:

In the coccyx area [tailbone] there is the lesion in the present. This has prevented and does prevent the coordination between the impulses and the activities. And with the drain this has produced upon the glandular system, we find the abilities for the activities in directing the influences and impulses become disturbing to the body, as well as the recurrent disturbances especially in sleep and when there is the closeness of the higher spiritual forces to the border conditions. These all as we find work together upon the imaginative forces of the body-physical at times, and thus causing those periods when there is greater incoordination. (1784-1)

In this case, pressures on nerves at the base of the spine resulted in ". . . disturbances that have been indicated through the medulla oblongata in the activity of the pineals . . ." Note the involvement of the imaginative forces and aberrant nerve impulses causing the periods of "greater incoordination."

In another case (1001) where imaginative and sympathetic forces of the pineal system was directly addressed, notice how the imaginative forces of the sympathetic was one of several etiological factors involved in the nervous system incoordination:

(Q) When may body expect a cessation of attacks?

(A) When those pressures in the upper cervical and in the 11th and 12th dorsal are entirely eliminated. There is seen at times, that those contractions in the dorsal and cervical region, apparently at times come from stomach; at others from genitive system; at others from purely imaginative forces. These all of the coordination between sympathetic and cerebro-spinal . . . (1001-5)

In this case there was a karmic (past life) source for the unhealthy mental attitudes and behaviors — the soul dimension of the imaginative influence. Other readings for his young man focused on the "impulsive" aspect of sympathetic/cerebrospinal incoordination. Note the reference to voluntary/involuntary *impulses* as well as *impulses* along the pineal cord:

We find the physical forces are still on the improve; that is, there is more near the normal balance of the physical forces. This balance must, necessarily, become such as that all of the impulses, whether of the voluntary or involuntary nature, become coordinant with the cerebrospinal reflexes, both to the brain and to functioning organs or impulses towards functioning of voluntary or involuntary nature.

(Q) *Have the pressures in the upper cervical and 11th and 12th dorsal been reduced?*

(A) Been reduced, but not wholly the pressure taken off; so that there ARE concurrent effects from impulses along that of the cord as runs THROUGH the system to that of the gland in the base of the brain. This is still existent, when this SHOULD have been - in the 13th or 14th year - almost WHOLLY a center in the lower portion of brain.

(1001-6)

With regard to the *impulsive* aspect of this incoordination, consider the role of the Leydig gland and solar plexus (the "abdominal brain" described by Byron Robinson, 1907) in the production of *impulse* to the system.

(Q) *What is it that brings on or incites said attacks?*

(A) The attempt of the physical body – through the forces in the imaginative body – to coordinate through that condition existent in the lyden [Leydig] gland, or in the base of the brain itself. Hence the contraction, and

the lack of coordination in such conditions.

(Q) From what part of the body do the attacks originate? and why does body lose consciousness during attack?

(A) From the solar plexus to that of the lyden [Leydigian] gland, or through the pineal. The lyden [Leydig] is IN the pineal, see?

(Q) Why does body lose consciousness?

(A) That's just what we have been giving! It is the imaginative forces and the cerebro-spinal forces, or the nerve supply through the cerebro-spinal system cuts off – through the lyden [Leydig] forces – which is sealed gland, see? they lie within those of the pineal themselves, see? When these become of such an activity, through conditions as excite in the system – as thrown out from those of the genitive forces, acting through those of the solar plexus, and the attempt to coordinate – they push in so much it pushes out consciousness. (1001-9)

The flow of impulse described above is part of a pattern that creates the fetus during gestation and may also be activated during deep meditation. The life force energy is raised in vibration and its most extreme form is called *kundalini*. In this instance the unhealthy imaginative influences produced nervous system incoordination. The past life karma was intensely sexual in nature and the young man was unable to control his mind and behavior. As noted in the reports for this case:

The boy himself never seemed to grasp the spiritual significance of his affliction. At times he would go away for days at a time, on drinking sprees and riotous night life excursions. His mother would finally locate him in some hotel, foot the bills, and bring him home. (1001-9, report)

Whereas in this case the impulsive system effect was of a sexual nature, for other individuals the imaginative and impulsive system expressed other past life karmic soul patterns:

Then, as to the appearances in the earth [past lives] that make for the impulse from the imaginative or the impulsive or the sense expressions in the earth, we find these are those that influence the entity in the present . . .
(820-1)

Whereas mainstream neuroscience focuses on nerve impulses associated with brain activity (and particularly cortical neurotransmission) the soul influence through the sympathetically mediated impulsive system provides a channel for past life and other soul experiences to manifest. This is the meaning of the expression that "*the sympathetic system or the brain manifestation of soul forces*" and why the sympathetic system is the *greater impulsive* influence in the body:

The cerebro-spinal, the nerve cord itself, acts for the physical attributes of the body through the IMPULSES.
The sympathetic is the greater IMPULSIVE system. (4125-5)

Thus the *incoordination between sympathetic and cerebrospinal* nervous systems in epilepsy can have various meanings. With regard to the pineal system and imaginative/impulsive forces associated with the sympathetic system, this could involve past life experiences manifesting as imaginative or impulsive mental/psychological symptoms, or even more severe biological illness (karma) as described in numerous case studies.

Summary

To understand the meaning of *incoordination between the sympathetic and cerebrospinal* nervous systems in the readings (and particularly

those involving epilepsy), one must understand the historical context in which those terms were used — especially the concept of the "great sympathetic system." With that in mind the incoordination described in the readings can take various forms, including:

- incoordination WITHIN the autonomic nervous system (i.e., BETWEEN sympathetic/parasympathetic) as amply documented in the epilepsy literature (e.g., cardiovascular and/or respiratory imbalance);
- voluntary/involuntary motor symptoms during seizures;
- psychological manifestations related to pineal system involvement (imaginative/impulsive) that reflect soul patterns (i.e., karma).

Appendix D: The Lacteal System

[Note: The core of this appendix was included in "The Treatment of Epilepsy" (McMillin, 2022) and is adopted (and expanded upon) here to supplement the main book text content. It contains detailed information relevant to the anatomy and physiology of the digestive system in Chapter 3, the pathophysiology of "true epilepsy" in Chapter 5, and lacteal system involvement in bioelectricity in Appendix B. Although some of the specific content of this appendix relates directly to epilepsy, the basic concepts illustrate the readings' approach to anatomy, physiology, and pathology as an integrated whole.]

Background

Many of the Cayce readings for persons with epilepsy describe lacteal duct pathology as a core element in the production of seizures. This appendix will provide some general information on the anatomy, physiology, and pathology of the lacteal ducts as described in the readings, particularly with regard to epilepsy. Lacteal system involvement in the bioelectrical systems of the body that are targeted by electrical appliances such as the wet cell battery is also addressed.

Lacteals are specialized lymphatic vessels in the villi of the intestine. Nearly all dietary lipid is assimilated and transported via the lacteals and their vessels (Dixon, 2010).

Anatomically, a duct is a tube, canal, or vessel conveying a body fluid (Dictionary.com). Bile ducts and tear ducts are common examples. In the lymphatic system, the most prominent duct is the thoracic duct. Thus, lacteal ducts are tubes or vessels that carry absorbed lipids (chyle) from the lacteals to the thoracic duct of the general lymphatics. Chyle is a milky fluid consisting of fat droplets

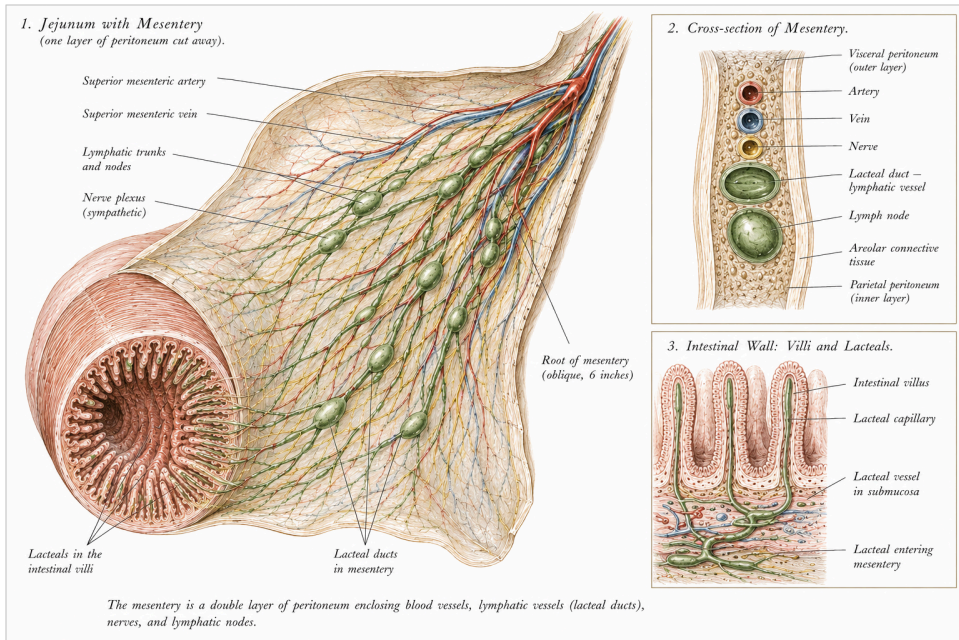


Fig. D-1. Jejunum with mesentery and lacteal ducts (lymphatic vessels). Panel 1: The jejunum is shown in cross-section at left, with lacteals visible in the intestinal villi. One layer of peritoneum is cut away to reveal the mesenteric contents: lacteal ducts (green), arteries (red), veins (blue), and nerve plexus (yellow), converging toward the root of the mesentery at the upper right. Lymph nodes appear as oval swellings along the lacteal ducts. Panel 2: Cross-section of the mesentery showing the dual peritoneal layers (visceral and parietal) encasing the artery, vein, nerve, lacteal duct (lymphatic vessel), lymph node, and areolar connective tissue. Panel 3: Detail of the intestinal wall showing the villus, lacteal capillary, lacteal vessel in the submucosa, and lacteal entering the mesentery.

The mesentery is a double layer of peritoneum enclosing blood vessels, lymphatic vessels (lacteal ducts), nerves, and lymphatic nodes.

Figure generated with ChatGPT (OpenAI, 2026) using a prompt developed by D. McMillin based on Sobotta, J. (1906). *Atlas and text-book of human anatomy*. W.B. Saunders. AI-generated illustration; not a reproduction of the original Sobotta plates.

and lymph. It is in this context that the readings use terms such as "the lacteal system" (501-2) and "the lacteal duct system" (3776-10) for the specialized lymphatics that absorb and transmit lipids from the upper small intestine to the thoracic duct and general circulation.

Anatomy and Physiology of the Lacteals and Lacteal Ducts

In general one can regard lymphatic transport of chyle as a two-stage process: 1) entry into the lacteals and movement through the initial vessels (ducts) via the intrinsic motion of intestinal peristalsis, and 2) the subsequent movement of this lipid through the rest of the lymphatic system by the contractile activity of the larger collecting lymphatics (Dixon, 2010). Historically, the anatomical structures involved in the absorption and transport of lipids from the intestines are collectively referred to as the "lacteal system" (Knox, 1824; Bryan, 1845; Trall, 1854; Gulliver, 1863), and the term is still in use (Rudrappa & Paul, 2018).

The designation of lacteal system is actually quite practical in understanding how lipid absorption and transport relates to the broader anatomy and physiology of the entire lymphatic system, which has three aspects:

- 1) lacteal function, as just described, will be explored in more detail below;
- 2) immune function as part of the larger immune system. In the intestinal tract the Peyer's patches are most notable in this regard.
- 3) general purpose cleansing and maintenance of tissue fluid balance. This aspect of lymphatic function has been historically regarded as the "sewer of the vasculature, passively draining fluid and proteins from the interstitial spaces" (Dixon, 2010, p. 480).

The primary focus of this mini-review will be on lacteal system function, and particularly intestinal lipid transport from the gut to the thoracic duct. In that regard, the small intestine has two distinct lymphatic networks: one comprised of the lacteals and submucosal lymphatic network and one comprised of the lymphatic network of

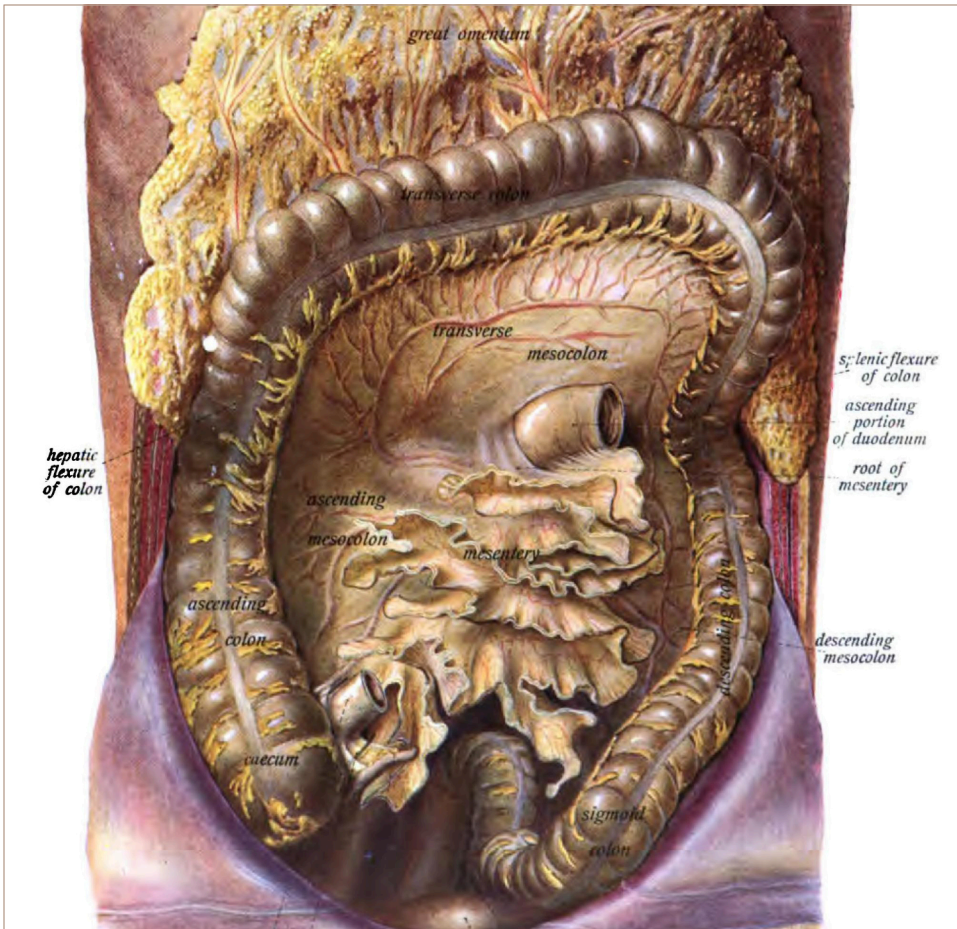


Fig. D-3. Abdominal viscera with small intestine removed, exposing the mesentery and its root. The mesentery is shown as a fan of dual-layered peritoneal tissue spreading from the root attachment line toward the intestinal border. The ascending portion of the duodenum is visible in retroperitoneal position at the right, structurally distinct from the mesenteric small intestine. The root of the mesentery runs obliquely from the duodenojejunal flexure (upper right) to the caecum (lower left) — the anatomical axis along which the lacteal ducts converge toward the cisterna chyli.

Sobotta, J. (1906). *Atlas and text-book of human anatomy*. W.B. Saunders. Fig. 410. Public domain, via Wikimedia Commons.

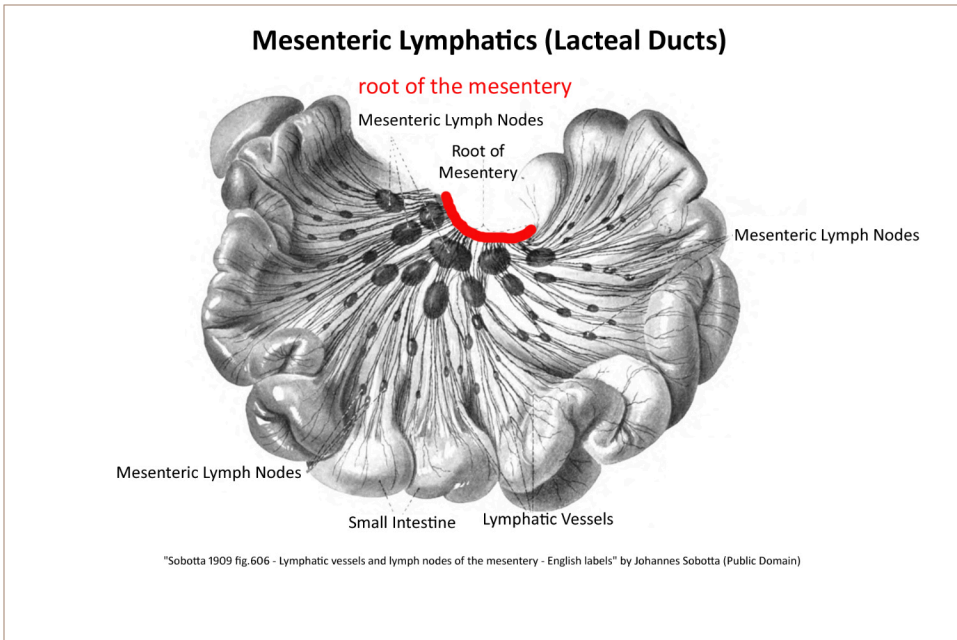


Fig. D-4. Mesenteric lymphatics (lacteal ducts) of the small intestine, showing the convergence of lymphatic vessels and nodes from approximately twenty feet of small intestine toward the root of the mesentery (red arc). The radiating network of lacteal ducts — encased between the peritoneal layers of the mesentery — drains toward the compact six-inch oblique attachment line of the mesenteric root, where the superior mesenteric lymph trunk exits toward the cisterna chyli and thoracic duct. This geometric compression from the broad mesenteric fan to the narrow root zone defines the anatomical territory of the cold spot in true epilepsy as described in the readings. Adhesions or lesions anywhere within this mesenteric lacteal network produce circulatory deficits whose surface expression falls within the right abdominal zone bounded by the root of the mesentery.

Sobotta, J. (1909). Atlas and text-book of human anatomy. W.B. Saunders. Fig. 606. Public domain, via Wikimedia Commons.

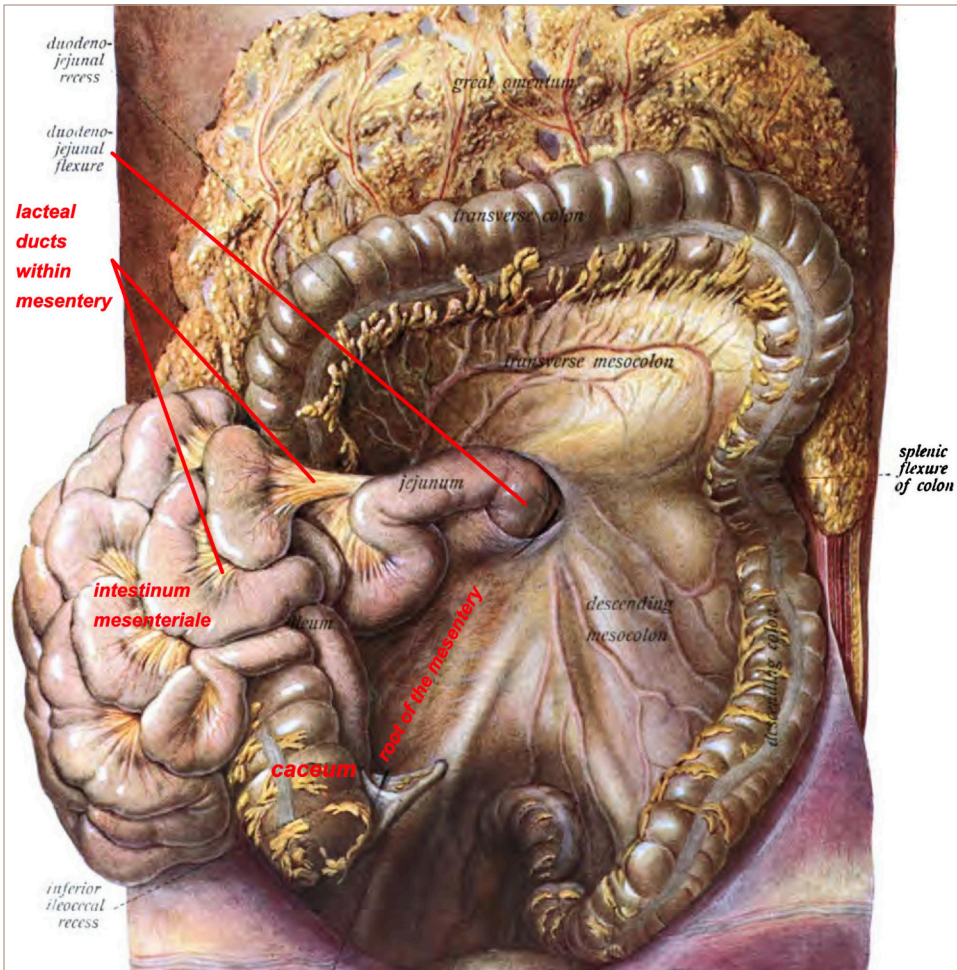


Fig. D-4. Abdominal viscera with small intestine reflected, exposing the mesentery and its root, with the ascending portion of the duodenum visible in retroperitoneal position (right). Sobotta, J. (1906). *Atlas and text-book of human anatomy*. W.B. Saunders. Fig. 409. Public domain, via Wikimedia Commons.

the muscle layer (that cleanses and maintains fluid balance), as just described. Although tracers move freely within each of these networks (suggesting that they contain few if any valves) tracers are not exchanged between the networks, indicating that the they are isolated from each other.

However both networks do eventually combine to drain into common collecting lymphatics near the mesenteric border of the intestine. The collecting lymphatics contain valves and have spontaneous contractions to transport the lymph away from the intestinal segment toward the cisterni chyle before emptying into the thoracic duct (Millera & Newberry, 2010).

In terms of the Cayce readings' discussion of the lacteal ducts and associated pathology with regard to epilepsy, the focus is on adhesions without explicitly stipulating the location (whether within the small intestine proper, mesenteric lymphatic vessels, or between the mesentery and thoracic duct). In the medical literature, specific use of the term "lacteal duct" is limited. However, numerous sources use the terms "lacteal vessels" and "lacteal system," such as:

When the mucous coat of the small intestines is examined several hours after a meal, the lacteal vessels are seen turgid with chyle, and covering its entire surface ... [including]

1. Smaller branches of the lacteals.

2. Larger branches, formed by the union of the smaller.

These vessels [lacteal ducts], which are so numerous, and of such magnitude as to sometimes almost conceal the ramifications of the blood-vessels, anastomose freely with each other, forming a network, from the meshes of which proceed branches, which, successively uniting, form larger and still larger trunks; and these, perforating the mucous coat, pass for some distance between the mucous and muscular coats, finally perforating both coats, and passing to the outside of the intestine, and, with it, are included between the layers of the mesentery ... (Trall, 1854, p. 140)

This description by Trall is perhaps one of the more generous historical examples in defining the extent of the "lacteal vessels" –

The Lacteal System

1. Lacteal vessels emerging from the mucous surface of the intestines.
2. First order of mesenteric glands.
3. Second order of mesenteric glands.
4. The great trunks of the lacteals emerging from the mesenteric glands and pouring their contents into
5. The receptacle of the chyle.
6. The great trunks of the lymphatic, or general absorbent system, terminating in the receptacle of the chyle.
7. Thoracic duct.
8. Termination of the thoracic duct
9. The angle formed by the union of the internal jugular vein with the left subclavian vein.

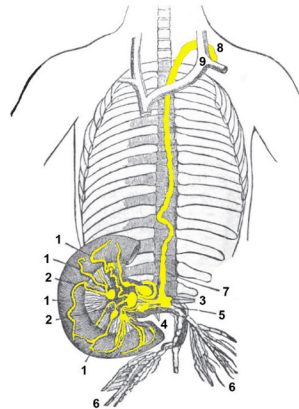


Fig D-2. The lacteal system per Trall with lymph vessels (lacteal ducts) colored yellow. Numbers 1-4 best represent the lacteal ducts as described in the readings. Lacteal duct adhesions can cause nervous system incoordination that produces nerve reflexes to the brain resulting in epileptic seizures associated with “true epilepsy.”

Source: Trall, R. T. (1854). The new hydropathic cook-book. Public Domain.

essentially from the lacteal villi lining of the intestinal mucous to the termination of the thoracic duct.

The Cayce readings do contain several explicit descriptions of the lacteals ducts that transport chyle:

Digestive system shows the real condition, or HOW the [pathological] condition affects the body in the lacteals – the lacteal ducts, and especially in the lacteal tubes – so that no fats of ANY nature are assimilated by the system ... (536-1).

To be sure, there may be many questions as to the exact area of the ducts, even according to some anatomists for they have changed their ideas of people, and yet people haven't changed a very great deal! There are, to be sure, lacteal ducts. There are the strings or ducts all through the upper portion of the alimentary canal, or jejunum;

but the larger patch or area is that lying just below the lower end of the duodenum, and where same EMPTIES into the jejunum, see? THIS patch is not only an INTERNAL activity but an EXTERNAL, that makes for the production of assimilation. (2153-4)

Lacteal Ducts and “The Lacteal Duct”

Reading 2153-4 identifies two categories of lacteal ducts: multiple “strings or ducts” associated with the jejunum and the “larger patch or area” associated with the lower end of the duodenum where it empties into the jejunum. There are solid anatomical reasons for this distinction. The jejunum and its lacteal ducts are encased in mesentery; the duodenum and its lacteal duct are not. Thus the readings employ two distinct but related usages of the term “lacteal duct.” In the plural — *lacteal ducts* — the term typically refers to the mesenteric lymphatic vessels of the jejunum, the network of chyle-carrying vessels draining the lacteals, encased between the peritoneal layers of the mesentery, and converging toward the root of the mesentery. In the singular, however — *the* lacteal duct — the readings consistently indicate a specific, discrete, and anatomically located structure on the right side of the abdomen that drains the lower portion of the duodenum. Identifying this structure precisely has implications both for the pathophysiology of “true epilepsy” as described in the readings and for understanding the therapeutic rationale of the wet cell appliance which is typically attached in the same anatomical region in a substantial number of readings.

Reading 3082-1 refers to “the lacteal duct – the main lacteal duct center.” Similarly reading 3565-1 calls attention to “the greater lacteal duct that lies in coordination with the gall duct and the entrance of the duodenum to the jejunum”. The “greater lacteal duct” is also relevant to the use of the wet cell battery that attaches to this center:

The Nitrate of Silver through the larger plate should be carried to the umbilical and lacteal duct center, or, on this body, the attachment would be made three fingers from the navel center directly to the right and two fingers upward. This would be on the right side, where there is the greater lacteal duct assimilation, so that those elements would be added to the body functioning in and through glandular forces. (5405-1)

The broader implications of the lacteal duct location for electrotherapy are discussed below. That the readings would specify this anatomical region for both therapeutic interventions and as a site of severe pathological disruption (in certain cases of epilepsy) is significant. In the appliance readings the anatomical association of the abdominal attachment is to "that center of the body in solar plexus brain, or from those centers about the umbilicus, which are the electronic and atomic vibratory radiations of a human body." (1800-15)

Anatomically the "main" or "greater" lacteal duct is called the pancreaticoduodenal lymph vessel (Figure D.1). It follows the curve of the lower duodenum terminating at the duodenal/jejunal flexure consistent with the readings description.

In addition to this singular major lacteal duct, the multiplicity of lacteal ducts associated with the jejunum drain the lacteals within the walls of the small intestine, becoming sandwiched between the layers of mesentery as they leave the intestinal wall on their way to the thoracic duct. These lacteal ducts drain into larger ducts and nodes between the mesenteric layers that all terminate within the superior mesenteric lymphatic vessel that follows the root of the mesentery to its juncture with the pancreaticoduodenal lymph

vessel, where both empty into the cisterni chyle and thoracic duct. The entirety of the mesenteric lacteal ducts and pancreaticoduodenal duct are located toward the right side of the abdomen where the cold spot in all cases of "true epilepsy" is to found.

The Wet Cell Battery Abdominal Attachment

Consistent with the reading 5405-1 excerpt for wet cell battery use quoted above, the readings routinely specify the abdominal attachment location with finger-width measurements from the navel. These instructions are remarkably consistent across a large number of readings spanning many years and addressing diverse conditions. The abdominal plate — invariably the larger nickel plate through which the vibrations of the therapeutic solution passes — is directed to what the readings variously call "the umbilical and lacteal duct plexus," "the lacteal duct center," or "the lacteal duct and umbilical center."

The rightward displacement from the navel is most commonly specified as four fingers or "a hand's breadth," as in reading 1140-1, which provides the only direct definition of the lacteal duct area in the readings: "In the right portion just below the liver or the gall duct, and a portion of the liver area; a hand's breadth — that is, the four fingers — from the umbilicus or navel plexus to the right side" (1140-1). Three fingers' breadth is also frequently specified, and two fingers appears occasionally, typically in readings addressing children or smaller-framed individuals, as in reading 2436-1, where the attachment for a child is given as "two fingers from the navel center and one finger up toward the right" (2436-1). An upward component of one to two fingers above the direct horizontal line is specified in many readings, though a straight horizontal line to the right is also common. In aggregate, the central tendency of these

measurements places the attachment point approximately 2 to 3 inches to the right of the navel, at or slightly above the umbilical plane — a location in the right paraumbilical zone of the anterior abdominal wall.

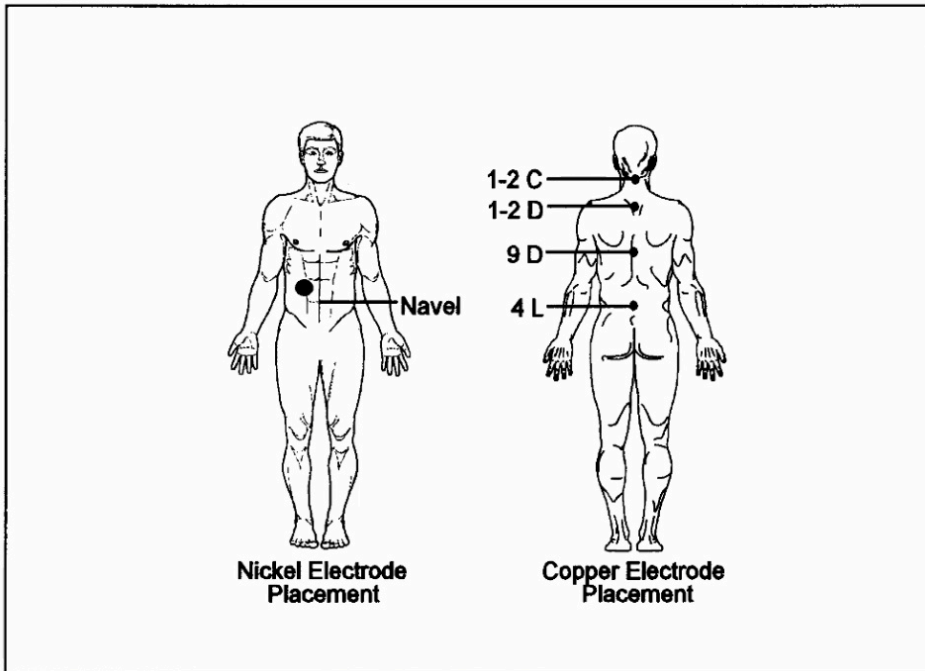


Fig. D-5. Locations of the Wet Cell Battery attachments. Note the abdominal location just to the right of the navel at the lacteal duct and umbilical plexus. McMillin & Richards (1994). The Radial Appliance and Wet Cell Battery. Used with permission.

The Gall Duct Co-Landmark

Of particular anatomical importance is the repeated co-location of the lacteal duct attachment site with the gall duct. Reading 294-201 specifies the attachment as "over the [lacteal]duct itself — about an inch and a half, or a little bit more, below the gall duct area, directly below" (294-201). Reading 1369-1 describes it as "just below the gall duct area, or four fingers from the navel center towards the right side" (1369-1). Reading 819-1 refers to "the lacteal duct center as combined with the gall duct area in the right side" (819-1), and

reading 1216-1 directs the attachment to "the large duct center in the lacteal duct area — that's four fingers from the umbilicus plexus to the right, just below the gall duct area" (1216-1).

The common bile duct (gall duct) enters the duodenum at the major duodenal papilla, located on the posteromedial wall of the second part of the duodenum. The anterior surface projection of this structure falls in the right paraumbilical region, at approximately the L2 vertebral level, roughly 3–4 finger-widths to the right of the midline. This corresponds precisely to the attachment zone specified across the wet cell readings. The readings' instruction to place the abdominal plate "just below the gall duct area" thus positions it over the lower portion of the descending duodenum and the region of the duodenojejunal flexure — the anatomical zone drained by the pancreaticoduodenal lymph vessel.

Ruling Out Alternative Candidates

Three other structures have been considered as potential referents for "the lacteal duct" in the singular:

The cisterna chyli is a retroperitoneal sac lying anterior to the L1–L2 vertebral bodies, posterior to the aorta. While anatomically significant as the origin of the thoracic duct and a collecting reservoir for mesenteric lacteal drainage, it is too deeply situated and too far posterior to correspond to an anterior abdominal surface landmark. Its position along the midline to slightly right of midline, adjacent to the spine, does not match the 3–4 finger rightward displacement consistently specified in the readings.

The lumbar lymphatic trunks are paired retroperitoneal vessels running alongside the aorta and inferior vena cava. They are bilateral structures draining the lower limbs and pelvic viscera rather than the intestinal lacteals specifically, and their paravertebral

position does not correspond to the anterior surface location described in the readings.

The superior mesenteric lymph trunk collects drainage from the entire mesenteric lacteal network and empties into the cisterna chyli. While it traverses the root of the mesentery and is therefore relevant to the cold spot zone in epilepsy, it is a collecting trunk for the whole of the small intestinal mesenteric lymphatics and does not carry the singular, specific character that the readings assign to "the lacteal duct". It is also positioned more medially than the 3–4 finger rightward displacement would indicate.

The Pancreaticoduodenal Lymph Vessel as "The Lacteal Duct"

The anatomical identification of "the lacteal duct" — in contrast to the "strings or ducts all through the upper portion of the alimentary canal, or jejunum" (2153-4) — is an open question with several possible answers. Based strictly on the readings, it is associated with the duodenum, is on the right side of the abdomen, and is closely associated with the location of the gall duct. The pancreaticoduodenal lymph vessel — the primary lymphatic drainage vessel of the duodenum, the head of the pancreas, and the proximal jejunum — satisfies all the anatomical constraints established by the readings.

First, it is singular and anatomically distinctive. Unlike the diffuse mesenteric lacteal network, the pancreaticoduodenal vessel has a defined course following the curvature of the duodenum, making it the natural referent when the readings speak of the singular lacteal duct rather than the plural *lacteal ducts*.

Second, it falls within the right paraumbilical zone, 3–4 finger-widths to the right of the navel, at or slightly above the umbilical plane. This location matches the common tendency of the wet cell

plate attachment carrying vibrational medicinal properties that specify placement at “the lacteal duct and umbilicus center” (357-8).

Third, it is anatomically contiguous with the gall duct. The pancreaticoduodenal vessel and the common bile duct share the same anatomical territory — both are intimately associated with the head of the pancreas and the descending duodenum. The readings' co-location of the lacteal duct attachment site for the battery "just below the gall duct area" (e.g., 1216-1, 1369-1, 3519-1) is thus anatomically coherent. The two structures occupy the same circumscribed region of the right upper-to-mid abdomen.

Fourth, the duodenum, unlike the jejunum and ileum, is a retroperitoneal structure not enclosed in mesentery. Its lacteal drainage therefore follows a more direct path to the cisterna chyli than the mesenteric lacteal network, lending it a structural prominence — a "greatness" — that the readings acknowledge in terms such as "the main lacteal duct," (3082-1) "the larger duct," (2832-1) and "the large duct center in the lacteal duct area" (1216-1).

Fifth, the terminal point of the pancreaticoduodenal vessel — where it joins the superior mesenteric lymph trunk near the duodenojejunal flexure — corresponds to the upper boundary of the cold spot zone in true epilepsy, which the readings describe as lying "between the lacteal duct and the caecum" (567-4). The caecum anchors the lower end of the mesenteric root; the duodenojejunal flexure and its associated pancreaticoduodenal lymph vessel anchor the upper end. The cold spot zone thus maps precisely onto the oblique line of the mesenteric root running between these two landmarks.

Its singular nature, convergence of finger-width measurements, gall duct co-location data, the elimination of alternative anatomical

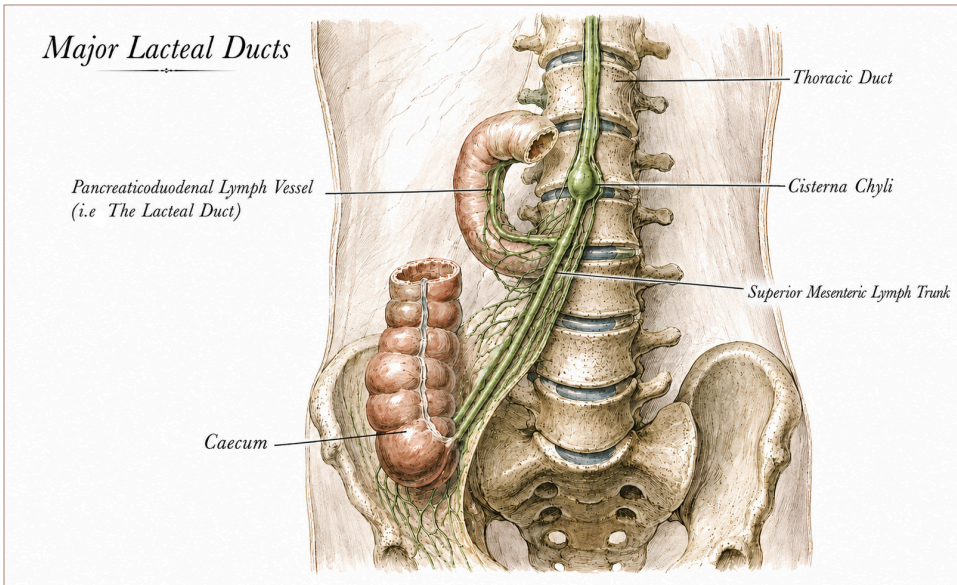


Fig. D-6. The major lacteal ducts of the lacteal system: deep abdominal anatomy showing the pathway from the duodenum to the thoracic duct. The pancreaticoduodenal lymph vessel (THE lacteal duct of the readings) follows the C-shaped course of the duodenum in the right upper abdomen before joining the superior mesenteric lymph trunk at the duodenojejunal flexure. The superior mesenteric lymph trunk runs obliquely along the root of the mesentery, draining chyle from the mesenteric lacteal ducts into the cisterna chyli at the base of the thoracic duct. The thoracic duct ascends along the anterior spine to terminate at the left subclavian vein. The caecum is visible in the right iliac fossa, marking the inferior boundary of the cold spot zone described in the readings in cases of true epilepsy (567-4).

Figure generated with ChatGPT (OpenAI, 2026), using a prompt developed by D. McMillin. Anatomical style adapted from Sobotta, J. (1906). *Atlas and text-book of human anatomy*. W.B. Saunders. Not a reproduction of the original Sobotta plates.

candidates, and the structural characteristics of the pancreaticoduodenal lymph vessel together constitute a coherent anatomical argument for identifying "the lacteal duct" of the readings with this vessel. And yet, this is an open question, to be decided by further research and clinical application (whether in dealing with epilepsy or the electrotherapies recommended in the readings).

The preceding discussion of the anatomy of lacteal ducts and the lacteal system lays a foundation for the rest of this appendix that will focus on the more practical aspects in relation to epilepsy, including lacteal duct adhesions and the abdominal cold spot in true epilepsy.

Causes of Lacteal Duct Adhesions

The readings described various ways in which adhesions can form in (or around) the lacteal ducts:

- Fever after-effects (2153-4; 693-1; 161-4; 1625-1; 561-1);
- Direct injury (from blow, fall, lick, pressure, etc.) (1025-2; 2276-1);
- Vasomotor constriction – spinal reflex (1980-1; 5333-1);
- Developmental problem (663-1; 1527-1);
- Nutritional deficiency (2019-1).

Regardless of the cause of lacteal duct adhesions, the slowed circulation in that area tends to produce a cold spot on the right side of the abdomen.

The Abdominal Cold Spot

Ten readings explicitly discuss an abdominal cold spot associated with lacteal duct pathology in epilepsy. Here are some key points that summarize this concept:

- **True Epilepsy** – Reading 567-4 states that "*From every condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum.*" Naturally, the question arises as to the meaning of the term "*true epileptic nature.*" Considering the historical meaning of the term this likely translates most closely into what has been called "idiopathic epilepsy." See Chapter 5 (5.2 Epilepsy) for a

comprehensive discussion of “true epilepsy”.

- **Causes of the Cold Spot** – Several etiological factors were noted as causing the abdominal cold spot in epilepsy:
 - Injury to the spine with nerve reflex to the abdomen (251-1, 567-4, 1980-1, 5333-1)
 - Fever (561-1, 2153-4)
 - Nutritional deficiency (2019-1, 2276-1)
 - Injury to abdomen (2276-1, 3082-1)
- **Circulation** – In numerous readings, adhesions or lesions in abdominal lacteals were explicitly linked to poor circulation in the area which produced the “cold spot or area” (e.g., 251-1, 561-1, 1980-1, 2276-1).
- **Location of Cold Spot** – Most of the readings that mention an abdominal cold spot also describe its location. Invariably the cold spot is associated with adhesions or lesion in the lacteals along the intestinal tract on the right side of the abdomen. When a precise location was not provided, the placement of the hot castor oil pack along the right side of the abdomen to break up the adhesions and lesion provided a general location. The general location covers an area from the lower portion of the liver (point of last rib) to the hip bone. This area is consistent with the remark that “*From EVERY condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum.*”

However, when a precise location for the cold spot was given, it varied slightly from person to person, although always within the general area on the right side of the abdomen. With this variability in the location of the cold spot, any research

effort to measure it must take into consideration the entire general area. Here are some links to excerpts describing the location of the cold spot:

- 251-1 – "*over the caecum area*"
- 561-1 – "*caecum and the area about the lacteal ducts*"
- 567-4 – "*lower lobe of the liver to the hip bone, or pelvis bone, coming into the caecum area*" (castor oil pack placement)
- 2019-1 – "*right portion of the upper abdomen, - as has been indicated, - about the umbilical and lacteal duct center*"
- 2153-4 – "*hand's breadth below the point of the rib, or over that area of the ducts*"
- 2276-1 – "*lower portion of the duodenum and jejunum*"
- 3082-1 – "*hand's breadth from the navel center to the right, and two fingers up on the body from that point*"
- 5333-1 – "*just below the gall duct center*"
- **Timing of Cold Spot** – Apparently the cold spot was not always present, but was linked to changes in patterns of circulation associated with seizure episodes. The most explicit description of the pattern is contained in reading 3082-1: "*First a tremor is caused through the body. At the time a very cold spot may be found at the lacteal duct.*" Reading 561-1 also discusses changes in circulation that occur "*right after or just before*" a seizure. In that reading a tautness along the right side was present "*at times.*" Reading 561-1 also recommends placing a hand on the right side of the abdomen during a seizure ("*spasm to the head*") to feel the cold spot. These two readings clearly suggest that the cold spot might only be present in conjunction with seizure activity, a view espoused

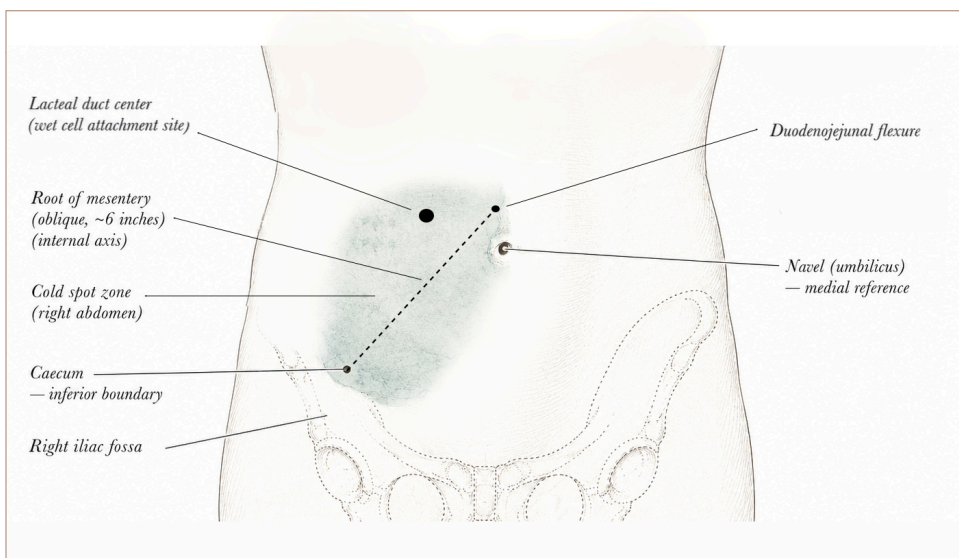


Fig. D-8. Surface projection of the cold spot zone in true epilepsy, right side of the abdomen (anterior view). The pale blue-green zone represents the organic physiological territory in which decreased circulation and a cold spot are described in the readings in cases of true epilepsy — "from every condition that is of true epileptic nature there will be found a cold spot or area between the lacteal duct and the caecum" (567-4). The zone is bounded superiorly by the lower margin of the liver and the inferior arc of the duodenum (THE lacteal duct), inferiorly by the caecum in the right iliac fossa, medially by the region of the navel, and laterally toward the right flank. The dashed oblique line indicates the root of the mesentery — the internal anatomical axis of the zone — running from the duodenojejunal flexure (upper endpoint) to the caecum (lower endpoint), a distance of approximately six inches. The filled circle within the zone marks the lacteal duct center, the surface location of the wet cell battery abdominal attachment site, positioned approximately 3–4 finger-widths to the right of the navel consistent with readings specifying placement at "the umbilical and lacteal duct center" (e.g., 1140-1, 3082-1, 819-1). The castor oil pack prescribed in the readings for true epilepsy covers this entire zone, reflecting the readings' understanding that lacteal duct adhesions may be located anywhere within the mesenteric network rather than at a fixed anatomical point. Zone boundaries are approximate and vary between individuals.

by Pahnke (1983, p. 137): "This sign [cold spot] was usually only present at the time of the seizure."

- **Determination of the Cold Spot** – As noted in reading 561-1, the readings sometimes encouraged individuals to locate the cold spot to verify its presence. Reading 251-1 insisted that the cold spot "*may be found by holding the hand (when warm, of course) over the caecum area, and SEE the difference in the temperature of that particular area from the lack of circulation.*" The qualification that the hand must be warm suggests that the temperature variation may be subtle, but should be detected with proper thermographic equipment and protocol. Reading 2019-1 states that the cold spot should be detectable "upon examination" (presumably manual palpation) but does not provide explicit instructions for the procedure.

Summary

Lacteals are specialized lymphatic vessels in the villi of the small intestine that absorb dietary lipids. The lipids are transported to the thoracic duct via a complex system of vessels (lacteal ducts). Historically, this constitutes the *lacteal system* as described in numerous Cayce readings that cite various causes for adhesions or similar pathology linked to epileptic seizures. The adhesions and related nerve reflexes are associated with decreased circulation and lower temperature described as a cold spot on the right side of the abdomen during epileptic seizures of an idiopathic type (i.e., *true epilepsy*).

The main or greater lacteal duct of the lacteal system is also discussed in hundreds of readings in relation to the placement of the wet cell battery abdominal plate. The convergence of finger-width measurements, gall duct co-location data, the elimination of alternative anatomical candidates, and the structural characteristics

of the pancreaticoduodenal lymph vessel together constitute a coherent anatomical argument for identifying “the lacteal duct” of the readings with this vessel. This identification is anatomically precise, internally consistent across a large number of readings, and consistent with the broader framework of lacteal duct pathology and the cold spot hypothesis as described in the readings. The bioelectric aspects of lacteal duct anatomy, physiology, and pathology are discussed in Appendix B.

Most of this appendix addresses anatomical aspects of the lacteal system and lacteal ducts. The last portion is more clinically oriented to the relevance of lacteal duct pathology to “true epilepsy” – the idiopathic form of the illness discussed at length in Chapter 5 (5.2 Epilepsy).

References

Abel, E. A., Moore, U. S., & Glathe, J. P. (1990). Psoriasis patient support group and self-care efficacy as an adjunct to day care center treatment. *International journal of dermatology*, 29(9), 640-643.

Abrams, M. (2024). The medicine of frequencies: What did Einstein mean? [Video]. YouTube. <https://www.youtube.com/watch?v=JGxWT4EUVbs>

Accorsi-Mendonça, D., da Silva, M. P., Souza, G. M. P. R., Lima-Silveira, L., Karlen-Amarante, M., Amorim, M. R., Almado, C. E. L., Moraes, D. J. A., & Machado, B. H. (2016). Pacemaking property of RVLM presympathetic neurons. *Frontiers in Physiology*, 7, 424. <https://doi.org/10.3389/fphys.2016.00424>

Ahuja, N. K., & Ahuja, A. (2016). Gastroenvironmental distress: metaphorical antecedents of the gut microbiome. *Medical humanities*, 42(2), 121-127.

Akerman, S., Simon, B., & Romero-Reyes, M. (2017). Vagus nerve stimulation suppresses acute noxious activation of trigeminocervical neurons in animal models of primary headache. *Neurobiology of Disease*, 102, 96–104.

Akihisa, T., Yasukawa, K., Oinuma, H., Kasahara, Y., Yamanouchi, S., Takido, M., Kumaki, K., & Tamura, T. (1996). Triterpene alcohols from the flowers of compositae and their anti-inflammatory effects. *Phytochemistry*, 43(6), 1255-1260.

Akyuz, E., Kullu, I., Arulsamy, A., & Shaikh, M. F. (2021). Melatonin as an antiepileptic molecule: Therapeutic implications via neuroprotective and inflammatory mechanisms. *ACS Chemical*

Neuroscience, 12(8), 1281–1292. <https://doi.org/10.1021/acscemneuro.1c00083>

Alberts B, Johnson A, Lewis J, et al. (2002). *Molecular biology of the cell*. 4th edition. New York: Garland Science; Lymphocytes and the Cellular Basis of Adaptive Immunity. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK26921/>

Aldulaimi, S., & Méndez, A. (2021). Splenomegaly: Diagnosis and management in adults. *American Family Physician*, 104(3), 271–278.

American College of Mechano-Therapy (1910). *Textbook of osteopathy*.

Anderson, P. C. (1981). Dialysis treatment of psoriasis. *Arch Dermatol*, 117(2), 67–68.

Andreasen, N. C., & Pierson, R. (2008). The role of the cerebellum in schizophrenia. *Biological Psychiatry*, 64(1), 81–88.

Andreasen, N. C., Paradiso, S., & O'Leary, D. S. (1998). "Cognitive dysmetria" as an integrative theory of schizophrenia: A dysfunction in cortical-subcortical-cerebellar circuitry? *Schizophrenia Bulletin*, 24(2), 203–218.

Ansari, M. A., Bhatt, S. M., Sinha, A., & Ahmad, S. (2014). Hilus cells of the ovary: A study of normal and pathological conditions. *Journal of Clinical and Diagnostic Research*, 8(9), FC01–FC03.

Arato, M., Erdos, A., & Polgar, M. (1985). Endocrinological changes in patients with sleep disorders. *Psychoneuroendocrinology*, 10(4), 459–465.

Arendt, J. (1988). Melatonin and the pineal gland. *Clinical Endocrinology*, 29(2), 205–229.

- Arvilommi, A. M., Salmi, M., Kalimo, K., & Jalkanen, S. (1996). Lymphocyte binding to vascular endothelium in inflamed skin revisited: a central role for vascular adhesion protein-1 (VAP-1). *European journal of immunology*, 26(4), 825-833.
- Atherton, D. J., Sheehan, M. P., Rustin, M. H., Whittle, B., & Guy, G. (1992). Treatment of atopic eczema with traditional Chinese medicinal plants. *Pediatric dermatology*, 9(4), 373-375.
- Atherton, D., Sheehan, M., Rustin, M. H., Buckley, C., Brostoff, J., & Taylor, N. (1990). Chinese herbs for eczema. *Lancet*, 336(8725), 1254.
- Atkinson, W. W. (1910). *Mind & body: Mental states & physical conditions*. New York: Cosimo Classics.
- Auctores Publishing. (2023). Circumventricular organs: Area postrema, median eminence and neurohypophysis, subcommissural organ, pineal gland and choroid plexus. Auctores Online. <https://auctoresonline.org>
- Axelrod, J. (1974). The pineal gland: A neurochemical transducer. *Science*, 184(4144), 1341-1348.
- Bacon, K. B., & Camp, R. D. (1990). Lipid lymphocyte chemoattractants in psoriasis. *Prostaglandins*, 40(6), 603-614.
- Baden, H. P. (1963). The treatment of psoriasis. *N Eng J Med*, 269, 907.
- Baig, A. M., Khan, N. A., Siddiqui, B., Singh, R., Raza, M., Nadeem, A., Hafeez, M., Qazi, M. H., & Umar, M. (2025). The integrative role of melatonin in psychiatric disorders: A systematic review of evidence from circadian biology, lifestyle medicine, and psychoneuroimmunology. *Brain and Behavior*, 15(3), e70379. <https://doi.org/10.1002/brb3.70379>

Baillieux, H., De Smet, H. J., Paquier, P. F., De Deyn, P. P., & Marien, P. (2008). Cerebellar neurocognition: Insights into the bottom of the brain. *Clinical Neurology and Neurosurgery*, 110(8), 763–773.

Baker L. B. (2019). Physiology of sweat gland function: The roles of sweating and sweat composition in human health. *Temperature* (Austin, Tex.), 6(3), 211–259.

Baker, S. L., Bhatt, D. L., Brown, S. A., & Blaber, M. (2019). Cerebellar projections to autonomic brainstem structures. *Journal of Comparative Neurology*, 527(1), 188–205.

Balon, J., Aker, P. D., Crowther, E. R., Danielson, C., Cox, P. G., O'Shaughnessy, D., Walker, C., et al. (1998). A comparison of active and simulated chiropractic manipulation as adjunctive treatment for childhood asthma. *New England Journal of Medicine*, 339, pp.1013-1020.

Barber, E. D. (1898). *Osteopathy complete*. 4th Ed. Kansas City, MO: Hudson-Kimberly Publishing Company.

Barnes, P. J. (1996). Neurogenic inflammation in the airways. *Respiratory Physiology*, 5(1–2), 145–154.

Barnes, P. J. (2008). Immunology of asthma and chronic obstructive pulmonary disease. *Nature Reviews Immunology*, 8(3), 183–192. <https://doi.org/10.1038/nri2254>

Barry, R. E., Salmon, P. R., Read, A. E., & Warin, R. P. (1971a). Mucosal architecture of the small bowel in cases of psoriasis. *Gut*, 12(11), 873-877.

Barry, R. M., Salmon, P. R., Read, A., E. (1971b). Small bowel mucosal changes in psoriasis. *Gut*, 12, 495.

Baumgartner, C., Lurger, S., & Leutmezer, F. (2001). Autonomic symptoms during epileptic seizures. *Epileptic Disorders*, 3(3), 103–116.

Becker, E. B. E., & Stoodley, C. J. (2013). Autism spectrum disorder and the cerebellum. *International Review of Neurobiology*, 113, 1–34.

Becker, R. O. (1990). *Cross Currents*. Jeremy P. Tarcher;

Becker, R. O. & Selden, G. (1985). *The Body Electric*. William Morrow.

Beraia, M. & Beraia, G. (2018). Electromagnetic properties of the arterial blood flow. *Biology Engineering Medicine*, 2(3), 1–8.

Beraia, M. & Beraia, G. (2022). Electromagnetism, blood flow and coagulation. *Journal of Biomedical Science and Engineering*, 15(7), 187–197.

Berthoud, H. R., & Neuhuber, W. L. (2000). Functional and chemical anatomy of the afferent vagal system. *Autonomic neuroscience : basic & clinical*, 85(1-3), 1–17. [https://doi.org/10.1016/S1566-0702\(00\)00215-0](https://doi.org/10.1016/S1566-0702(00)00215-0)

Bested, A. C., Logan, A. C., & Selhub, E. M. (2013). Intestinal microbiota, probiotics and mental health: from Metchnikoff to modern advances: Part I - autointoxication revisited. *Gut pathogens*, 5(1), 5. <https://doi.org/10.1186/1757-4749-5-5>

Bhagwat, A. P., & Madke, B. (2023). The Current Advancement in Psoriasis. *Cureus*, 15(10), e47006. <https://doi.org/10.7759/cureus.47006>

Bhatt, D. L., Wyart, C., Cantaut-Belarif, Y., & Orts Del'Immagine, A. (2020). The Reissner fiber is highly dynamic in vivo and controls morphogenesis of the spine. *Current Biology*, 30(5), 827–839.

- Bienenstock, J., Ernst, P. B., & Underdown, B. J. (1987). The gastrointestinal tract as an immunologic organ - state of the art. *Annals of allergy*, 59(5 Pt 2), 17-20.
- Bittiner, S. B., Tucker, W. F., Cartwright, I., & Bleehen, S. S. (1988). A double-blind, randomised, placebo-controlled trial of fish oil in psoriasis. *Lancet*, 1(8582), 378-380.
- Bjork, R. O. (1983). Migraine headaches. In W. A. McGarey (Ed.), *Physician's reference notebook* (pp. 278–284). A.R.E. Press.
- Bjørneboe, A., Smith, A. K., Bjørneboe, G. E., Thune, P. O., & Drevon, C. A. (1988). Effect of dietary supplementation with n-3 fatty acids on clinical manifestations of psoriasis. *The British journal of dermatology*, 118(1), 77-83.
- Blask, D. E. (1984). The pineal: An oncostatic gland? In R. J. Reiter (Ed.), *The pineal gland* (pp. 253–284). Raven Press.
- Blum, A. S. (2009). Respiratory physiology of seizures. *Journal of Clinical Neurophysiology*, 26(5), 309–315.
- Boehncke, W.-H., & Schön, M. P. (2015). Psoriasis. *The Lancet*, 386(9997), 983–994. [https://doi.org/10.1016/S0140-6736\(14\)61909-7](https://doi.org/10.1016/S0140-6736(14)61909-7)
- Bordoni, B., Escher, A. R., & Girgenti, G. T. (2023). Peritoneal adhesions in osteopathic medicine: Theory, Part 1. *Cureus*, 15(7), e42472. <https://doi.org/10.7759/cureus>.
- Bro, H. H. (1990). *A Seer Out of Season*. New York: Penguin Books.
- Brown, R., Kocsis, J. H., Caroff, S., Amsterdam, J., Winokur, A., Stokes, P. E., & Frazer, A. (1985). Differences in nocturnal melatonin secretion between melancholic depressed patients and control subjects. *American Journal of Psychiatry*, 142(7), 811–816.

- Brustein, D. M., Scher, R. K., & Auerbach, R. (1976). Letter: Hyperlipoproteinaemia and psoriasis. *Lancet*, 1(7951), 154.
- Bryan, E. L. (1845). On the physiology of the lacteal system. *The Lancet*, 45(1130), 469–471.
- Burns, L. (1907). *Studies in the Osteopathic Sciences. Volume 4, Cells of the blood*. Monfort & Company.
- Buselmeier, T. J., Kjellstrand, C. M., Dahl, M. V., Cantieri, J. S., Nelson, R. S., Burgdorf, W. C., Bentley, C. R., Najarian, J. S., & Goltz, R. W. (1978). Treatment of psoriasis with dialysis. *Proceedings of the European Dialysis and Transplant Association. European Dialysis and Transplant Association*, 15, 171-177.
- Buslau, M., Menzel, I., & Holzmann, H. (1990). Fungal flora of human faeces in psoriasis and atopic dermatitis. *Mycoses*, 33(2), 90-94.
- Cabanes, L. R., Weber, S. N., Matran, R., Regnard, J., Richard, M. O., Degeorges, M. E., & Lockhart, A. (1994). Bronchial hyperresponsiveness to methacholine in patients with impaired left ventricular function. *New England Journal of Medicine*, 320(20), 1317–1322. <https://doi.org/10.1056/NEJM198905183202003>
- Cabral, D., Lôbo, M. D. G., Beato, J., Falcão, M., & Beirão, J. M. (2022). Ocular autonomic nervous system: An update from anatomy to physiological functions. *Vision*, 6(1), 6. <https://doi.org/10.3390/vision6010006>
- Callan, J. P. (1979). Holistic health or holistic hoax? *JAMA*, 241(11), 1156.
- Canning, B. J. (2013). Autonomic neural control of the airways. In D. Robertson & I. Biaggioni (Eds.), *Primer on the Autonomic Nervous System* (3rd ed., pp. 183–191). Elsevier. <https://doi.org/10.1016/B978-0-12-386525-0.00018-3>

Canning, B. J., & Fischer, A. (2001). Neural mechanisms and the pathophysiology of asthma. *Trends in Pharmacological Sciences*, 22(7), 354–360. [https://doi.org/10.1016/S0165-6147\(00\)01712-5](https://doi.org/10.1016/S0165-6147(00)01712-5)

Cantaut-Belarif, Y., Orts Del'Imagine, A., Penru, M., Pezeron, G., Wyart, C., & Bardet, P.-L. (2020). Adrenergic activation modulates the signal from the Reissner fiber to cerebrospinal fluid-contacting neurons during development. *eLife*, 9, e59469. <https://doi.org/10.7554/eLife.59469>

Cantaut-Belarif, Y., Sternberg, J. R., Thouvenin, O., Wyart, C., & Bardet, P.-L. (2018). The Reissner fiber in the cerebrospinal fluid controls morphogenesis of the body axis. *Current Biology*, 28(15), 2479–2486. <https://doi.org/10.1016/j.cub.2018.05.079>

Cao, Y., Zhang, H., Chen, X., Li, C., & Chen, J. (2025). Melatonin: A natural guardian in cancer treatment. *Frontiers in Pharmacology*, 16, 1617508. <https://doi.org/10.3389/fphar.2025.1617508>

Caprile, T., Hein, S., Rodriguez, S., Montecinos, H., & Rodriguez, E. (2003). Reissner fiber binds and transports away monoamines present in the cerebrospinal fluid. *Brain Research: Molecular Brain Research*, 110(2), 177–192.

Carnauba, R. A., Baptistella, A. B., Paschoal, V., & Hübscher, G. H. (2017). Diet-induced low-grade metabolic acidosis and clinical outcomes: A review. *Nutrients*, 9(6), 538. <https://doi.org/10.3390/nu9060538>

Carroll, R. G. (2007). Musculoskeletal system. In *Elsevier's Integrated Physiology* (pp. 43–55). New York: Elsevier.

Chauhan, S., Barbanta, A., Ettinger, U., & Kumari, V. (2023). Pineal abnormalities in psychosis and mood disorders: A systematic

review. *Brain Sciences*, 13(5), 827. <https://doi.org/10.3390/brainsci13050827>

Chen, T. S., & Chen, P. S. (1989). Intestinal autointoxication: a medical leitmotif. *Journal of clinical gastroenterology*, 11(4), 434-441.

Chen, W. T., Hu, C. H., Schiltz, J. R., & Nakamoto, S. (1978). In search of "psoriasis factor(s)": a new approach by extracorporeal treatment. *Artificial organs*, 2(2), 203-205.

Chen, Z., & Liu, K. (2025). Mechanism and applications of vagus nerve stimulation. *Current Issues in Molecular Biology*, 47(2), 122. <https://doi.org/10.3390/cimb47020122>

Chhabria, S., Patel, A. P., Bhatt, K. N., & Shah, P. A. (2020). Revisiting the pineal gland: A review of calcification, masses, precocious puberty, and melatonin functions. *International Journal of Neuroscience*, 130(5), 464-475. <https://doi.org/10.1080/00207454.2019.1692838>

Chin, Y. H., Falanga, V., Streilein, J. W., & Sackstein, R. (1989). Lymphocyte recognition of psoriatic endothelium: evidence for a tissue-specific receptor/ligand interaction. *The Journal of investigative dermatology*, 93(2 Suppl), 82S-87S.

Cifarelli, V., & Eichmann, A. (2019). The intestinal lymphatic system: Functions and metabolic implications. *Cellular and Molecular Gastroenterology and Hepatology*, 7(3), 503-513. <https://doi.org/10.1016/j.jcmgh.2018.12.002>

Collier, P. M. & Payne, C. R. (1996). The dietary effect of oil fish consumption on psoriasis. *Br J Dermatol*, 135, 858.

Craig A. D. (2009). How do you feel--now? The anterior insula and human awareness. *Nature reviews. Neuroscience*, 10(1), 59-70. <https://doi.org/10.1038/nrn2555>

Cristofori, M., González-Rodríguez, J. C., Cortés-Marín, E. E., Sallón, A., & Sandoval, J. (2025). Psoriasis beyond the skin: A disease with cardiovascular risk. *Cureus*, 17(7), e88464. <https://doi.org/10.7759/cureus.88464>

Critchley, H. O. D., Babayev, E., Bulun, S. E., Clark, S., Garcia-Grau, I., Gregersen, P. K., ... Griffith, L. G. (2020). Menstruation: science and society. *American Journal of Obstetrics and Gynecology*, 223(5), 624–664.

Cruveilhier, J. (1844). *The anatomy of the human body*. Harper & Brothers.

Cutsforth-Gregory, J. K., & Benarroch, E. E. (2017). Nucleus of the solitary tract, medullary reflexes, and clinical implications. *Neurology*, 88(12), 1187–1195.

Dampney, R. A. (1994). Functional organization of central pathways regulating the cardiovascular system. *Physiological Reviews*, 74, 323–364.

Delamonta, R. S., & Walker, M. C. (2011). Pre-ictal autonomic changes. *Epilepsy Research*, 97, 267–272.

Davenport, W. W. (1978). *A digest of digestion*. Chicago: Year Book Medical Publishers.

Davison, D. L., Terek, M., & Chawla, L. S. (2012). Neurogenic pulmonary edema. *Critical Care*, 16(2), 212. <https://doi.org/10.1186/cc11226>

de Sousa Moraes, L. F., Grzeskowiak, L. M., de Sales Teixeira, T. F., & Gouveia Peluzio, M. (2014). Intestinal microbiota and probiotics in celiac disease. *Clinical microbiology reviews*, 27(3), 482–489.

de Oliveira-Souza, R. (2012). The human extrapyramidal system. *Medical Hypotheses*, 79(6), 843–852.

de Oliveira-Souza, R., & Tovar-Moll, F. (2012). The unbearable lightness of the extrapyramidal system. *Journal of the History of the Neurosciences*, 21(3), 280–292.

De Vos, R. J., De Boer, W. A. & Haas, F. D. (1995). Is there a relationship between psoriasis and coeliac disease? *J Intern Med*, 237, 118.

Desplantez, T., Dupont, E., Severs, N. J., & Weingart, R. (2007). Gap junction channels and cardiac impulse propagation. *Journal of Membrane Biology*, 218(1–3), 13–28.

Diehl, B., Diehl, R. R., Stodieck, S., & Ringelstein, E. B. (1997). Spontaneous oscillations in cerebral blood flow velocities in middle cerebral arteries in control subjects and patients with epilepsy. *Stroke*, 28, 2457–2459.

Dimarogonas, A. D. (1990). The origins of vibration theory. *Journal of Sound and Vibration*, 140(2), 181–189.

Di Vincenzo, F., Del Gaudio, A., Petito, V., Lopetuso, L., & Scaldaferri, F. (2023). Gut microbiota, intestinal permeability, and systemic inflammation: A narrative review. *Internal and Emergency Medicine*.

Dixon, J. B. (2010). Lymphatic lipid transport: sewer or subway? *Trends in Endocrinology & Metabolism*, 21(8), 480–487.

Dorland, W. A. N. (1908). *The American illustrated medical dictionary*. Philadelphia and London: W. B. Saunders Company.

Duke, J. A. (1997). *The green pharmacy*. Emmaus, PA: Rodale Press.

Dutta, S. R., Hazarika, I., & Chakravarty, B. P. (2007). Abdominal epilepsy, an uncommon cause of recurrent abdominal pain: A brief report. *Gut*, 56(3), 439–441. <https://doi.org/10.1136/gut.2006.094250>

Edgar Cayce Readings. (1971, 1993–2007). © The Edgar Cayce Foundation. All Rights Reserved. [Individual readings cited by reading number throughout text.]

Egger, J., Carter, C. M., Wilson, J., Turner, M. W., & Soothill, J. F. (1983). Is migraine food allergy? A double-blind controlled trial of oligoantigenic diet treatment. *Lancet*, 322(8355), 865–869.

Ernst E. (1997). Colonic irrigation and the theory of autointoxication: a triumph of ignorance over science. *Journal of clinical gastroenterology*, 24(4), 196-198.

Espinoza, L. R. (1985). Psoriatic arthritis. Further epidemiological and genetic considerations. In: Gerber, L. H., Espinoza, L. R., editors. *Psoriatic arthritis*, New York: Grune & Stratton.

Espinoza, L. R., van Solingen, R., Cuellar, M. L., & Angulo, J. (1998). Insights into the pathogenesis of psoriasis and psoriatic arthritis. *The American journal of the medical sciences*, 316(4), 271–276.

Farber, E. M., & Roth, R. J. (1964). Current concepts in the diagnosis and treatment of psoriasis. *GP*, 29, 94-99.

Fariello, R. G., Bubenik, G. A., Brown, G. M., & Grotta, L. J. (1977). Epileptogenic action of intraventricularly injected antimelatonin antibody. *Neurology*, 27(6), 567–570.

Ferrari, M. D., Roon, K. I., Lipton, R. B., & Goadsby, P. J. (2001). Oral triptans (serotonin 5-HT_{1B/1D} agonists) in acute migraine treatment: A meta-analysis of 53 trials. *Lancet*, 358(9294), 1668–1675. [https://doi.org/10.1016/S0140-6736\(01\)06711-3](https://doi.org/10.1016/S0140-6736(01)06711-3)

Ferrier, I. N., Arendt, J., Johnstone, E. C., & Crow, T. J. (1982). Reduced nocturnal melatonin secretion in chronic schizophrenia: Relationship to body weight. *Clinical Endocrinology*, 17(2), 181–187.

- Figuerola, X. F. & Duling, B. R. (2009). Gap junctions in the control of vascular function. *Antioxidants & Redox Signaling*, 11(2), 251–266.
- Fokkens, W. J., Lund, V. J., Hopkins, C., Hellings, P. W., Kern, R., Reitsma, S., Toppila-Salmi, S., Bernal-Sprekelsen, M., Mullol, J., Alobid, I., Terezinha Anselmo-Lima, W., Bachert, C., Baroody, F., von Buchwald, C., Cervin, A., Cohen, N., Constantinidis, J., De Gabor, L., Desrosiers, M., . . . Zwetsloot, C. P. (2020). European position paper on rhinosinusitis and nasal polyps 2020. *Rhinology*, 58(Suppl. 29), 1–464. <https://doi.org/10.4193/Rhin20.600>
- Francoz, C., Durand, F., Kahn, J. A., Genyk, Y. S., & Nadim, M. K. (2019). Hepatorenal syndrome. *Clinical Journal of the American Society of Nephrology*, 14(5), 774–781.
- Freitas, A. A., & de Sousa, M. (1976). Control mechanism of lymphocyte traffic. Altered migration of ⁵¹Cr-labeled mouse lymph node cells pretreated in vitro with phospholipases. *European journal of immunology*, 6(10), 703–711.
- Freitas, J., & Bispo, J. (2010). The lingula of the cerebellum. *Cerebellum*, 9(2), 148–149.
- French, J. A. (2005). Catamenial epilepsy: The elusive condition. *Epilepsy Currents*, 5(3), 113–114. <https://doi.org/10.1111/j.1535-7511.2005.05301.x>
- Fry, L. (1970). The gut and the skin. *Postgrad Med J*, 46(541), 664–670.
- Furst, B. & González-Alonso, J. (2025). The heart, a secondary organ in the control of blood circulation. *Experimental Physiology*, 110(5), 649–665.
- Gardner M. L. (1988). Gastrointestinal absorption of intact proteins. *Annual review of nutrition*, 8, 329–350.

Gasbarrini, A., De Luca, A., Fiore, G., Gambrielli, M., Franceschi, F., Ojetti, V., Torre, E. S., Gasbarrini, G., Pola, P., & Giovannino, M. (1998). Beneficial effects of *Helicobacter pylori* eradication on migraine. *Hepatogastroenterology*, 45(21), 765–770.

Gautam, D., Kushwah, R. M. S., & Bhushan, B. (2025). Nadis in yogic science and their correlation with modern neuroanatomy. *International Journal of Research and Innovation in Applied Science*, 10(8), 949–956.

Gerber, R. (2001). *Vibrational medicine: The #1 handbook of subtle-energy therapies*. Bear & Company.

Gliński, W., Jabłońska, S., Imiela, J., Nosarzewski, J., Jarzabek-Chorzelska, M., Haftek, M., & Obalek, S. (1979). Continuous peritoneal dialysis for treatment of psoriasis. I. Depletion of PMNL as a possible factor for clearing of psoriatic lesions. *Archives of dermatological research*, 265(3), 337–341.

Global Initiative for Asthma. (2023). *Global strategy for asthma management and prevention*. <https://ginasthma.org>

Glover, V., Littlewood, J., Sandler, M., Peatfield, R., Petty, R., & Rose, F. C. (1983). Biochemical predisposition to dietary migraine: The role of phenolsulphotransferase. *Headache*, 23(2), 53–58.

Goit, R. K., Jha, S. K., & Pant, B. N. (2016). Alteration of cardiac autonomic function in patients with newly diagnosed epilepsy. *Physiological Reports*, 4(11), 1–4.

Golan, R. (1995). *Optimal wellness*. New York: Ballantine Books.

Gots R. E. (1993). Medical hypothesis and medical practice: autointoxication and multiple chemical sensitivities. *Regulatory toxicology and pharmacology*: RTP, 18(1), 2–12.

Gottlieb, A. B., & Dann, F. (2009). Comorbidities in patients with psoriasis. *The American journal of medicine*, 122(12), 1150.e1–1150.e11509. <https://doi.org/10.1016/j.amjmed.2009.06.021>

Grant, E. C. (1979). Food allergies and migraine. *Lancet*, 1(8123), 966–969.

Gray, H. (1901). *Gray's anatomy of the human body*. Lea & Febiger.

Gregory, K., Wempe, T., Chang, J. J., Croker, A., Doss, A. S., Iwanaga, J., & Tubbs, R. S. (2023). Innervation of pineal gland by the nervus conarii: A review of this almost forgotten structure. *Anatomy and Cell Biology*, 56(3), 304–307. <https://doi.org/10.5115/acb.23.037>

Griesenauer, B., & Pereira, J. P. (2021). In sickness and in health: The immunological roles of the lymphatic system. *International Journal of Molecular Sciences*, 22(9), 4458. <https://doi.org/10.3390/ijms22094458>

Griffiths, C. E. M., Armstrong, A. W., Gudjonsson, J. E., & Barker, J. N. W. N. (2021). Psoriasis. *The Lancet*, 397(10281), 1301–1315. [https://doi.org/10.1016/S0140-6736\(20\)32549-6](https://doi.org/10.1016/S0140-6736(20)32549-6)

Groth, M., Helbig, T., Grau, V., Kummer, W., & Haberberger, R. V. (2006). Spinal afferent neurons projecting to the rat lung and pleura express acid sensitive channels. *Respiratory Research*, 7(1), 96. <https://doi.org/10.1186/1465-9921-7-96>

Gulliver, G. (1863). Lectures on the blood, lymph, and chyle of vertebrata. *Medical Times and Gazette*, Dec. 19, 636–639.

Gupta, S., Syrimi, Z., Hughes, D. M., & Zhao, S. S. (2021). Comorbidities in psoriatic arthritis: a systematic review and meta-analysis. *Rheumatology international*, 41(2), 275–284. <https://doi.org/10.1007/s00296-020-04775-2>

Halevy, S., Halevy, J., Boner, G., Rosenfeld, J. B., & Feuerman, E. J. (1981). Dialysis therapy for psoriasis. Report of three cases and review of the literature. *Archives of dermatology*, 117(2), 69-72.

Halevy, S., Halevy, J., Rosenfeld, J. B. & Feuerman, E. (1980). Dialysis for psoriasis. *Ann Intern Med*, 92, 263.

Haller, J. S., Jr. (1994). *Medical protestants: The eclectics in American medicine, 1825–1939*. Southern Illinois University Press.

Hallett, M., Aybek, S., Dworetzky, B. A., McWhirter, L., Staab, J. P., & Stone, J. (2022). Functional neurological disorder: New subtypes and shared mechanisms. *Lancet Neurology*, 21(6), 537–550. [https://doi.org/10.1016/S1474-4422\(21\)00422-1](https://doi.org/10.1016/S1474-4422(21)00422-1)

Hamilton, I., Fairris, G. M., Rothwell, J., Cunliffe, W. J., Dixon, M. F., & Axon, A. T. (1985). Small intestinal permeability in dermatological disease. *The Quarterly journal of medicine*, 56(221), 559-567.

Hamlett, W. C. (Ed.). (1999). *Sharks, skates, and rays: The biology of elasmobranch fishes*. Johns Hopkins University Press.

Hamlett, W. C., Kormanik, G., Storrie, M., Stevens, B., & Walker, T. I. (2003). Chondrichthyan parity, lecithotrophy, and matrotrophy. In W. C. Hamlett (Ed.), *Reproductive biology and phylogeny of chondrichthyes* (pp. 99–136). Science Publishers.

Harshe, D. G., Harshe, S. D., Harshe, G. R., & Harshe, G. G. (2016). Abdominal epilepsy in an adult: A diagnosis often missed. *Journal of Clinical and Diagnostic Research*, 10(10), VD01–VD02. <https://doi.org/10.7860/JCDR/2016/19873.8600>

Hazzard, C. (1905). *The practice and applied therapeutics of osteopathy*. 3rd ed. Kirksville, MO: Journal Printing Company.

Hendel, L., Hendel, J., Johnsen, A., & Gudmand-Høyer, E. (1982). Intestinal function and methotrexate absorption in psoriatic patients. *Clinical and experimental dermatology*, 7(5), 491-497.

Henkel, A., Noachtar, S., Pfänder, M., & Lüders, H. O. (2002). The localizing value of the abdominal aura and its evolution: A study in focal epilepsies. *Neurology*, 58(2), 271–276. <https://doi.org/10.1212/wnl.58.2.271>

Hillman, R. S., Ault, K. A., Leporrier, M., & Rinder, H. M. (2011). *Hematology in clinical practice* (5th ed.). McGraw-Hill Education.

Hindiye, N. A., Zhang, N., Farrar, M., Banerjee, P., Lombard, L., & Aurora, S. K. (2020). The role of diet and nutrition in migraine triggers and treatment: A systematic literature review. *Headache*, 60(7), 1300–1316.

Hira, H. S., Mittal, A., Kaur, G., & Puri, S. (2016). Clinical dysautonomia in patients with bronchial asthma: Study with seven autonomic function tests. *Chest*, 149(2), e40–e41. <https://doi.org/10.1016/j.chest.2015.11.037>

Howard, H. (1885). Address delivered at the opening of the summer session clinic for diseases of the nervous system, McGill University. *Canada Medical & Surgical Journal*, 577–595.

Howell, W. H. (Ed.). (1900). *An American text-book of physiology* (2nd ed., Vol. 1). W. B. Saunders.

Hu, S. C., & Lan, C. E. (2017). Psoriasis and Cardiovascular Comorbidities: Focusing on Severe Vascular Events, Cardiovascular Risk Factors and Implications for Treatment. *International journal of molecular sciences*, 18(10), 2211. <https://doi.org/10.3390/ijms18102211>

Huang, Z., Tang, J., & Ji, K. (2021). Exercise prevents HFD-induced insulin resistance risk: Involvement of TNF- α level regulated by vagus nerve-related anti-inflammatory pathway in the spleen. *Diabetology & Metabolic Syndrome*, 13, 133. <https://doi.org/10.1186/s13098-021-00731-6>

Humbert, P., Bidet, A., Treffel, P., Drobacheff, C., & Agache, P. (1991). Intestinal permeability in patients with psoriasis. *Journal of dermatological science*, 2(4), 324-326.

Ikeda, K., Kawakami, K., Onimaru, H., Okada, Y., Yokota, S., Koshiya, N., et al. (2017). The respiratory control mechanisms in the brainstem and spinal cord: integrative views of the neuroanatomy and neurophysiology. *The Journal of Physiological Sciences*, 67(1), 45–62.

Iguchi, H., Kato, K. I., & Ibayashi, H. (1982). Age-dependent reduction in serum melatonin concentrations in healthy human subjects. *Journal of Clinical Endocrinology and Metabolism*, 55(1), 27–29.

Jalkanen, S., Saari, S., Kalimo, H., Lammintausta, K., Vainio, E., Leino, R., Duijvestijn, A. M., & Kalimo, K. (1990). Lymphocyte migration into the skin: the role of lymphocyte homing receptor (CD44) and endothelial cell antigen (HECA-452). *The Journal of investigative dermatology*, 94(6), 786-792.

Jalota, R., Sandur, V., & Kalra, S. (1997). Effects of thoracoscopic upper dorsal sympathicolysis for essential hyperhidrosis on bronchial responsiveness to histamine: Implications on the autonomic imbalance theory of asthma. *Respiration*, 64(5), 328–332. <https://doi.org/10.1159/000196703>

Jansen, K. L. R., Dragunow, M., & Faull, R. L. M. (1990). Sigma receptors are preferentially located in the human pineal gland. *Brain Research*, 530(1), 155–158.

Jauregui, W., & Tabbarah, S. (2024). Shared pathophysiology of inflammatory bowel disease and psoriasis: Unraveling the connection. *Cureus*, 16(9), e68582.

Jones, R., & Lydeard, S. (1992). Irritable bowel syndrome in the general population. *BMJ*, 304(6819), 87–90.

Kabashima, K., Honda, T., Ginhoux, F., & Egawa, G. (2019). The immunological anatomy of the skin. *Nature Reviews Immunology*, 19(1), 19–30. <https://doi.org/10.1038/s41577-018-0084-5>

Kallenbach, J. M., Webster, T., Dowdeswell, R., Reinach, S. G., Millar, R. N., & Zwi, S. (2006). Autonomic nervous system control of the cardiovascular and respiratory systems in asthma. *Respiratory Medicine*, 100(Suppl. 1), S22–S31. <https://doi.org/10.1016/j.rmed.2006.01.019>

Kang, H. S., Han, K. M., Kim, J. H., Yoo, D. M., Choi, H. G., Kim, N. Y., Min, K. W., & Kwon, M. J. (2025). Psoriasis as a Potential Risk Factor for Inflammatory Bowel Disease: Findings from a Nationally Representative Korean Population. *Biomedicines*, 13(10), 2334. <https://doi.org/10.3390/biomedicines13102334>

Kanno, S. & Saffitz, J. E. (2001). The role of myocardial gap junctions in electrical conduction and arrhythmogenesis. *Cardiovascular Pathology*, 10(4), 169–177.

Kantor, S. D. (1990). Stress and psoriasis. *Cutis*, 46, 321–322.

Kavli, G., Førde, O. H., Arnesen, E., & Stenvold, S. E. (1985). Psoriasis: familial predisposition and environmental factors. *British medical journal (Clinical research ed.)*, 291(6501), 999–1000.

Kettler, A. H., Baughn, R. E., Orengo, I. F., Black, H., & Wolf, J. E., Jr (1988). The effect of dietary fish oil supplementation on psoriasis. Improvement in a patient with pustular psoriasis. *Journal of the American Academy of Dermatology*, 18(6), 1267-1273.

Kelly, G. (2009). Inulin-type prebiotics: A review (Part 2). *Alternative Medicine Review*, 14(1), 36–55.

Khalsa, S. S., Adolphs, R., Cameron, O. G., Critchley, H. D., Davenport, P. W., Feinstein, J. S., Feusner, J. D., Garfinkel, S. N., Lane, R. D., Mehling, W. E., Meuret, A. E., Nemeroff, C. B., Oppenheimer, S., Petzschn, F. H., Pollatos, O., Rhudy, J. L., Schramm, L. P., Simmons, W. K., Stein, M. B., Stephan, K. E., . . . Paulus, M. P., & Interoception Summit 2016 Participants. (2018). Interoception and mental health: A roadmap. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 3(6), 501–513. <https://doi.org/10.1016/j.bpsc.2017.12.004>

Khedikar, S. G. (2016). Critical comparison of yogic Nadi with nervous system. *Journal of Indian System of Medicine*, 4(2), 108–113. <https://doi.org/10.4103/2320-4419.190215>

Khlevner, J., Park, Y., & Margolis, K. G. (2018). Brain-gut axis: Clinical implications. *Gastroenterology Clinics of North America*, 47(4), 727–739. <https://doi.org/10.1016/j.gtc.2018.07.002>

King, H. H., Cayce, C. T., & Herrin, J. (2017). Thermography examination of abdominal area skin temperatures in individuals with and without focal-onset epilepsy. *Explore*, 13(1), 46–52. <https://doi.org/10.1016/j.explore.2016.10.003>

Khan, M. M., Lustrino, D., Silveira, W. A., Wild, F., Straka, T., Issop, Y., et al. (2016). Sympathetic innervation controls homeostasis of neuromuscular junctions in health and disease. *Proceedings of the National Academy of Sciences*, 113(3), 746–750.

Klein, D. A., Paradise, S. L., & Reeder, R. M. (2019). Amenorrhea: A systematic approach to diagnosis and management. *American Family Physician*, 100(1), 39–48. PMID: 31259490

Kirkpatrick, S. D. (2000). *Edgar Cayce: An American prophet*. Riverhead Books.

Knox (1824). Observations on the anatomy of the lacteal system in the seal and cetacea. *Edinburgh Medical and Surgical Journal*, 22(80), 23–31.

Kitay, J. I., & Altschule, M. D. (1954). *The pineal gland: A review of the physiological literature*. Harvard University Press.

Kothare, S. V., & Singh, K. (2014). Cardiorespiratory abnormalities during epileptic seizures. *Sleep Medicine*, 15(12), 1433–1439.

Klimesch, W. (2018). The frequency architecture of brain and brain body oscillations: An analysis. *The European Journal of Neuroscience*, 48(7), 2431–2453. <https://doi.org/10.1111/ejn.14192>

Korr, I. M. (1979). *The collected papers of Irvin M. Korr*. Colorado Springs, Colorado: American Academy of Osteopathy

Koury, M. J., & Ponka, P. (2004). New insights into erythropoiesis: The roles of folate, vitamin B12, and iron. *Annual Review of Nutrition*, 24, 105–131. <https://doi.org/10.1146/annurev.nutr.24.012003.132306>

Kraft, M., Djukanovic, R., Wilson, S., Holgate, S. T., & Martin, R. J. (1997). Increased vascularity of the bronchial mucosa in mild asthma. *American Journal of Respiratory and Critical Care Medicine*, 156(1), 1–7. <https://doi.org/10.1164/ajrccm.156.1.9607066>

Kragballe, K., & Fogh, K. (1989). A low-fat diet supplemented with dietary fish oil (Max-EPA) results in improvement of psoriasis and in formation of leukotriene B5. *Acta dermato-venereologica*, 69(1), 23–28.

Kramer P, Brunner FP, Brynger H, Chantler C, Donckerwolcke RA, Jacobs C, Selwood NH, Wing AJ. (1982). Dialysis treatment and psoriasis in Europe. *Clin Nephrol*, 18, 62-68.

Kripke, D. F., & Risch, S. C. (1986). Bright light for mania. *American Journal of Psychiatry*, 143(3), 409.

Kromann, N., & Green, A. (1980). Epidemiological studies in the Upernavik district, Greenland. Incidence of some chronic diseases 1950-1974. *Acta medica Scandinavica*, 208(5), 401-406.

Kwitten, J. & Kantor, I. (1967). Psoriasis and diet. *N Y State J Med*, 67, 587-588.

Lacy, B. E., Wise, J. L., & Cangemi, D. J. (2024). Leaky Gut Syndrome: Myths and Management. *Gastroenterology & hepatology*, 20(5), 264–272.

Langley, J. N. (1921). The autonomic nervous system Part 1. W. Heffer.

Lansford, F. D. (1983). Psoriasis. In W. A. McGarey (Ed.), *Physician's reference notebook* (pp. 303–311). A.R.E. Press.

Lerner, A. B., Case, J. D., Takahashi, Y., Lee, T. H., & Mori, W. (1958). Isolation of melatonin, the pineal gland factor that lightens melanocytes. *Journal of the American Chemical Society*, 80(10), 2587.

Lerner, M. R. & Lerner, A. B. (1964). Psoriasis and protein intake. *Arch Dermat*, 90, 217.

Latenstein, C. S. S., Wennmacker, S. Z., de Jong, J. J., van Laarhoven, C. J. H. M., Drenth, J. P. H., & de Reuver, P. R. (2019). Etiologies of long-term postcholecystectomy symptoms: A systematic review. *Gastroenterology Research and Practice*, 2019, 4278373.

Levin M. (2014). Endogenous bioelectrical networks store non-genetic patterning information during development and regeneration. *The Journal of physiology*, 592(11), 2295–2305. <https://doi.org/10.1113/jphysiol.2014.271940>

Levin, M. (2021). Bioelectrical approaches to cancer as a problem of the scaling of the cellular self. *Progress in Biophysics and Molecular Biology*, 165, 102–112.

Levin, M. (accessed June 12, 2025). The Bioelectric Interface to the Intelligence of the Body: The future of biomedicine, <https://www.youtube.com/watch?v=s-SL8qy-6kA>.

Levin, M., & Stevenson, C. G. (2012). Regulation of cell behavior and tissue patterning by bioelectrical signals. *Annual Review of Biomedical Engineering*, 14, 295–323.

Lewy, A. J., & Newsome, D. A. (1983). Different types of melatonin circadian secretory rhythms in some blind subjects. *Journal of Clinical Endocrinology and Metabolism*, 56(6), 1103–1107.

Lewy, A. J., Wehr, T. A., Gold, P. W., & Goodwin, F. K. (1979). Plasma melatonin in manic-depressive illness. In E. Usdin, I. J. Kopin, & J. D. Barchas (Eds.), *Catecholamines: Basic and clinical frontiers* (Vol. 2, pp. 1173–1175). Pergamon Press.

Lewy, A. J., Wehr, T. A., Goodwin, F. K., Newsome, D. A., & Rosenthal, N. E. (1981). Manic-depressive patients may be supersensitive to light. *Lancet*, 1(8216), 383–384.

Li, Z., & Pollack, G. H. (2023). On the driver of blood circulation beyond the heart. *PloS one*, 18(10), e0289652. <https://doi.org/10.1371/journal.pone.0289652>

Libretti, S., & Aeddula, N. R. (2023, February 16). Embryology, genitourinary. In StatPearls [Internet]. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK559309/>

Lin, J., et al. (2022). Ephaptic coupling is a mechanism of conduction reserve during reduced gap junction coupling. *Frontiers in Physiology*, 13, 848019.

Lin, L., & Zhang, J. (2017). Role of intestinal microbiota and metabolites on gut homeostasis and human diseases. *BMC immunology*, 18(1), 2. <https://doi.org/10.1186/s12865-016-0187-3>

Lin, Y.-T., & Yeh, T.-H. (2022). Studies on clinical features, mechanisms, and management of olfactory dysfunction secondary to chronic rhinosinusitis. *Frontiers in Allergy*, 3, 835151. <https://doi.org/10.3389/falgy.2022.835151>

Linden, D., & Reddy, T. B. (Eds.). (2002). *Handbook of batteries* (3rd ed.). McGraw-Hill.

Liu, H., Naser, J. A., Lin, G., & Lee, S. S. (2023). Cardiomyopathy in cirrhosis: From pathophysiology to clinical care. *JHEP reports : innovation in hepatology*, 6(1), 100911. <https://doi.org/10.1016/j.jhepr.2023.100911>

Liu, J., Clough, S. J., Hutchinson, A. J., Adamah-Biassi, E. B., Popovska-Gorevski, M., & Dubocovich, M. L. (2016). MT1 and MT2 melatonin receptors: A therapeutic perspective. *Annual Review of Pharmacology and Toxicology*, 56, 361–383.

Louis, E. D. (1993). The origins of the term “extrapyramidal” within the context of late nineteenth- and early twentieth-century neurology, neurophysiology and neuropathology. *Journal of the History of Medicine and Allied Sciences*, 48(1), 68–79.

Lu, Z. W., Liu, F., Hu, J., Bian, D., & Li, F. G. (1991). Suppressive effects of safflower yellow on immune functions. *Zhongguo yao li xue bao* = *Acta pharmacologica Sinica*, 12(6), 537-542.

Luo, W., Feldman, K., Klewe-Nebenius, A., Tauber, M., Bending, D., Bhatt, D. L., & Korn, T. (2022). pH sensing controls tissue inflammation by modulating cellular metabolism and endolysosomal function of immune cells. *Nature Immunology*, 23, 1063–1075. <https://doi.org/10.1038/s41590-022-01231-0>

Lv, Y., Lau, W. Y., Li, Y., Deng, J., Han, X., Gong, X., Liu, N., & Wu, H. (2016). Hypersplenism: History and current status. *Experimental and therapeutic medicine*, 12(4), 2377–2382. <https://doi.org/10.3892/etm.2016.3683>

Ma, C., Harskamp, C. T., Armstrong, E. J., & Armstrong, A. W. (2013). The association between psoriasis and dyslipidaemia: a systematic review. *The British journal of dermatology*, 168(3), 486-495.

MacDonald H. R. (1975). Early detection of potentially lethal events in T cell-mediated cytotoxicity. *European journal of immunology*, 5(4), 251-254.

Mafi, A., Rismanchi, H., Gholinezhad, Y., Mohammadi, M. M., Mousavi, V., Hosseini, S. A., Milasi, Y. E., Reiter, R. J., Ghezelbash, B., Rezaee, M., Sheida, A., Zarepour, F., Asemi, Z., Mansournia, M. A., & Mirzaei, H. (2023). Melatonin as a regulator of apoptosis in leukaemia: Molecular mechanism and therapeutic perspectives. *Frontiers in Pharmacology*, 14, 1224151. <https://doi.org/10.3389/fphar.2023.1224151>

Maghbooli, M., Hosseinabadi, A. M., Arsang-Jang, S., & Mirzaei, M. (2023). Effect of add-on melatonin on seizure outcomes and quality of sleep in epilepsy with idiopathic generalized tonic-clonic seizures

alone in adult patients. *Brain and Behavior*, 13(2), e2860. <https://doi.org/10.1002/brb3.2860>

Markiewski, M. M., & Lambris, J. D. (2007). The role of complement in inflammatory diseases from behind the scenes into the spotlight. *American Journal of Pathology*, 171(3), 715–727. <https://doi.org/10.2353/ajpath.2007.070166>

Marks, J., & Shuster, S. (1970). Small-intestinal mucosal abnormalities in various skin diseases—fact or fancy?. *Gut*, 11(4), 281–291.

Mathias M. (2018). Autointoxication and historical precursors of the microbiome-gut-brain axis. *Microbial ecology in health and disease*, 29(2), 1548249.

Maurice, P., Allen, B., Barkley, A., Cockbill, S., Stammers, J. & Bather, P. (1987). The effects of dietary supplementation with fish oil in patients with psoriasis. *British journal of dermatology*, 117, 599–606.

Mawe, G. M., Coates, M. D., & Moses, P. L. (2006). Review article: intestinal serotonin signalling in irritable bowel syndrome. *Alimentary pharmacology & therapeutics*, 23(8), 1067–1076. <https://doi.org/10.1111/j.1365-2036.2006.02858.x>

McCraty, R. (2015). *Science of the Heart (Volume 2)*. HeartMath Research Center.

McEvoy, J., & Kelly, A. M. (1976). Psoriatic clearance during haemodialysis. *The Ulster medical journal*, 45(1), 76–78.

McGarey, W. (1974). *Acupuncture and body energies*. Gabriel Press.

McGarey, W. A. (1983). *Physician's reference notebook*. A.R.E. Press.

McGarey, W. A. (1993). *The oil that heals: A physician's successes with castor oil treatments*. A.R.E. Press.

McDougal, D. H., & Gamlin, P. D. (2015). Autonomic control of the eye. *Comprehensive Physiology*, 5(1), 439–473. <https://doi.org/10.1002/cphy.c140014>

McLaughlin, K. A., & Levin, M. (2018). Bioelectric signaling in regeneration: Mechanisms of ionic controls of growth and form. *Developmental biology*, 433(2), 177–189. <https://doi.org/10.1016/j.ydbio.2017.08.032>

McMillin, D. L. (1991). *The treatment of schizophrenia: A holistic approach*. Lifeline Press.

McMillin, D. L. (1997). *Selections from the abdominal and pelvic brain by Byron, Robinson, MD. (with commentary by David McMillin, M.A.)*. Virginia Beach, VA: Lifeline Press.

McMillin, D. L. (2001). Diet and urinary ph: a preliminary study and brief discussion of relevance to infectious disease. Paper presented at the 6th Annual Cayce Health Professionals Symposium, September 15, 2001 in Virginia Beach, VA. <https://www.meridianinstitute.com/publication/diet-and-urinary-ph.html>

McMillin, D. L. (2011). Edgar Cayce's psychic process. Atlantic University Parapsychology and Consciousness Conference, October 16, 2011. <https://mcmillinmedia.com/media/lectures/ec-psychic.mp4>

McMillin, D. L. (2022). *The treatment of epilepsy*. A.R.E. Press.

McMillin, D. L. (1994). *Alzheimer's disease and the dementias*. A.R.E. Press.

McMillin, D. L. (1995). *Principles and techniques of nerve regeneration*. Virginia Beach: VA. Lifeline Press.

McMillin, D. L. (2002a). *Science of the soul: Part 2 – Glands as spiritual centers*. True Health Newsletter. Virginia Beach, VA: A.R.E. Press.

McMillin, D. L. (2002b). The causes and treatment of Cancer: A research report based on the readings of Edgar Cayce. Paper presented at the 7th Annual Cayce Health Professionals Symposium, September 15, 2002 in Virginia Beach, Virginia. <https://www.meridianinstitute.com/publication/cancer.html>

McMillin, D. L., & Richards, D. G. (1994). The Radial appliance and wet cell battery: two electrotherapeutic devices recommended by Edgar Cayce. Virginia Beach, VA: Lifeline Press.

McMillin, D. L., Richards, D. G., Mein E. A. & Nelson, C. D. (1999). Systemic aspects of psoriasis: An integrative model based on intestinal etiology. *Integrative Medicine*; Vol. 2, No. 2/3.

Meyers, R. (1953). The extrapyramidal system: An inquiry into the validity of the concept. *Neurology*, 9, 627–655.

Mein, E. A. (1989). *Keys to health*. St. Martin's Paperbacks.

Mein, E. A., Greenman, P. E., McMillin, D. L., Richards, D. G., & Nelson, C. D. (2001). Manual medicine diversity: research pitfalls and the emerging medical paradigm. *The Journal of the American Osteopathic Association*, 101(8), 441–444.

Mein, E. A., Richards, D. G., McMillin, D. L., & Nelson, C. D. (2005). Transdermal absorption of castor oil. *Alternative Therapies in Health and Medicine*, 11(1), 96–97.

Mein, E. A., Richards, D. G., McMillin, D. L., McParland, J. M. & Nelson, C. D. (2000). Physiologic regulation through manual therapy. In *Physical Medicine and Rehabilitation: State of the Art Reviews*, Vol. 14, No.1. pp. 27-42. Edited by Tomski, M. A., Hanley & Belfus, Inc.

Meng, W., Xu, Q., Shi, Q., Song, Y., & Hou, J. (2026). Research progress on abdominal epilepsy in children. *Frontiers in*

neuroscience, 20, 1791261. <https://doi.org/10.3389/fnins.2026.1791261>

Mengoli, M., Conti, G., Fabbrini, M., Candela, M., Brigidi, P., Turrone, S., & Barone, M. (2023). Microbiota-gut-brain axis and ketogenic diet: How close are we to tackling epilepsy? *Microbiome Research Reports*, 2(4), 32. <https://doi.org/10.20517/mrr.2023.24>

Menzel, I. & Holzmann, H. (1986). Überlegungen zum seborrhoischen kopfexzem und der psoriasis capillitii im zusammenhang mit intestinalen mykosen. *Z Hautkr*, 61, 451-454.

Meridian Institute. (1996). Epilepsy pilot study: Summary report. Meridian Institute.

Meridian Institute. (2000). Psoriasis case reports. <https://www.meridianinstitute.com/projects/psoriasis-case-reports.html>.

Meridian Institute. (n.d.). Introduction to multiple sclerosis. <https://meridianinstitute.com/projects/introduction-to-multiple-sclerosis.html>

Merriam-Webster. (n.d.). Emunctory. In *Merriam-Webster.com medical dictionary*. Retrieved March 28, 2021, from <https://www.merriam-webster.com/medical/emunctory>

Michaëlsson, G., Kraaz, W., Gerdén, B., Hagforsen, E., Hjelmqvist, G., Löf, L., Sjöberg, O., & Scheynius, A. (1995). Increased lymphocyte infiltration in duodenal mucosa from patients with psoriasis and serum IgA antibodies to gliadin. *The British journal of dermatology*, 133(6), 896-904.

Michaëlsson, G., Kraaz, W., Gerdén, B., Hagforsen, E., Lundin, I. P., Löf, L., Sjöberg, O., & Scheynius, A. (1996). Patients with psoriasis have elevated levels of serum eosinophil cationic protein and

increased numbers of EG2 positive eosinophils in the duodenal stroma. *The British journal of dermatology*, 135(3), 371-378.

Michaëlsson, G., Kraaz, W., Hagforsen, E., Pihl-Lundin, I., & Lööf, L. (1997). Psoriasis patients have highly increased numbers of tryptase-positive mast cells in the duodenal stroma. *The British journal of dermatology*, 136(6), 866-870.

Mielants, H., Veys, E. M., Cuvelier, C., De Vos, M., Goemaere, S., De Clercq, L., Schatteman, L., Gyselbrecht, L., & Elewaut, D. (1995). The evolution of spondyloarthropathies in relation to gut histology. III. Relation between gut and joint. *The Journal of rheumatology*, 22(12), 2279-2284.

Miles, A., & Philbrick, D. R. S. (1988). Melatonin and psychiatry. *Biological Psychiatry*, 23(4), 405–425.

Millera, M. J., & Newberry, R. D. (2010). Microanatomy of the intestinal lymphatic system. *Annals of the New York Academy of Sciences*, 1207(Suppl 1), E21–E28.

Milin, J., Bajic, I., & Brakus, S. (1988). The effect of geomagnetic field on the pineal gland. *Journal of Pineal Research*, 5(1), 83–89.

Miyata, S. (2015). New aspects in fenestrated capillary and tissue dynamics in the sensory circumventricular organs of adult brains. *Frontiers in Neuroscience*, 9, 390. <https://doi.org/10.3389/fnins.2015.00390>

Monro, J., Carini, C., & Brostoff, J. (1984). Migraine is a food allergic disease. *Lancet*, 2(8405), 719–721.

Moore, R. Y. (1996). Neural control of the pineal gland. *Behavioural Brain Research*, 73(1–2), 125–130.

- Moreddu, R. (2023). Nanotechnology and cancer bioelectricity: Bridging the gap between biology and translational medicine. *Advanced Science*, 10(35).
- Morrell, M. J. (2002). Epilepsy in women. *American Family Physician*, 66(8), 1489–1495.
- Moseley, B., Bateman, L., Millichap, J. J., Wirrell, E., & Panayiotopoulos, C. P. (2012). Autonomic epileptic seizures, autonomic effects of seizures, and SUDEP. *Epilepsy & Behavior*, 26(3), 375–385.
- Murai, T., Tohyama, T., & Kinoshita, M. (2014). Recurrent diarrhea as a manifestation of temporal lobe epilepsy. *Epilepsy & behavior case reports*, 2, 57–59. <https://doi.org/10.1016/j.ebcr.2014.03.007>
- Murdoch, B. E. (2010). The cerebellum and language: Historical perspective and review. *Cortex*, 46(7), 858–868.
- Muston, H. L. & Conceico, S. (1978). Remission of psoriasis during haemodialysis. *Br Med J*, 1(6111), 480-481.
- Myers, S. P., Kruzel, T., Zeff, J., & Snider, P. (2019). Emunctorology: Synthesising Traditional Naturopathic Practice with Modern Science. *Integrative medicine (Encinitas, Calif.)*, 18(3), 40-41.
- Nagpal, R., & Yadav, H. (2017). Bacterial Translocation from the Gut to the Distant Organs: An Overview. *Annals of nutrition & metabolism*, 71 Suppl 1, 11-16.
- Niness, K. R. (1999). Inulin and oligofructose: What are they? *Journal of Nutrition*, 129(7), 1402S–1406S.
- Naldi, L., Parazzini, F., Peli, L., Chatenoud, L., & Cainelli, T. (1996). Dietary factors and the risk of psoriasis. Results of an Italian case-control study. *The British journal of dermatology*, 134(1), 101-106.

- Nam, C., Lee, J., Kim, J. S., Lee, T. Y., & Yoon, Y. C. (2025). Clinical perspectives on post-cholecystectomy syndrome: A narrative review. *Annals of Medicine*.
- Nappi, R. E., Tiranini, L., Sacco, S., De Matteis, E., De Icco, R., & Tassorelli, C. (2022). Role of estrogens in menstrual migraine. *Cells*, 11(8), 1355. <https://doi.org/10.3390/cells11081355>
- Nelson, C. D., McMillin, D. L., Richards, D. G., Mein, E. A. & Redwood, D. (2000). Manual healing diversity and other challenges to chiropractic integration. *Journal of Manipulative and Physiological Therapeutics*, 23(3), pp. 202-207.
- Nelson, C. F., Bronfort, G., Evans, R., Boline, P., Goldsmith, C., & Anderson, A. V. (1998). The efficacy of spinal manipulation, amitriptyline and the combination of both therapies for the prophylaxis of migraine headache. *J Manipulative Physiol Ther*, Oct;21(8):511-9
- Nissenson, A. R., Rapaport, M., Gordon, A., & Narins, R. G. (1979). Hemodialysis in the treatment of psoriasis. A controlled trial. *Annals of internal medicine*, 91(2), 218-220.
- Nobel Assembly at Karolinska Institutet. (2017). The Nobel Prize in Physiology or Medicine 2017: Advanced information. <https://www.nobelprize.org/prizes/medicine/2017/advanced-information/>
- Norris, D. O. (2007). *Vertebrate endocrinology* (4th ed.). Academic Press.
- Nygren, J., Adelman, R. A., Myakishev-Rempel, M., Sun, G., Li, J., & Zhao, Y. (2020). Centrosome as a micro-electronic generator in live cell. *Bio Systems*, 197, 104210. <https://doi.org/10.1016/j.biosystems.2020.104210>

Olry, R. (1996). Winslow's contribution to our understanding of the cervical portion of the sympathetic nervous system. *Journal of the History of the Neurosciences*, 5(2), 190–196.

Oroszi, T., van Heuvelen, M. J. G., Nyakas, C., & van der Zee, E. A. (2020). Vibration detection: Its function and recent advances in medical applications. *F1000Research*, 9, F1000 Faculty Rev-619. <https://doi.org/10.12688/f1000research.22649.1>

Ornish, D., Scherwitz, L. W., Billings, J. H., Brown, S. E., Gould, K. L., Merritt, T. A., Sparler, S., Armstrong, W. T., Ports, T. A., Kirkeeide, R. L., Hogeboom, C., & Brand, R. J. (1998). Intensive lifestyle changes for reversal of coronary heart disease. *JAMA*, 280(23), 2001–2007.

O'Regan, M. E., & Brown, J. K. (2005). Abnormalities in cardiac and respiratory function observed during seizures in childhood. *Developmental Medicine & Child Neurology*, 47(1), 4–9.

O'Regan, M. E., & Brown, J. K. (2005). Abnormalities in cardiac and respiratory function observed during seizures in childhood. *Developmental Medicine & Child Neurology*, 47(1), 4–9.

Orts Del'Immagine, A., Cantaut-Belarif, Y., Thouvenin, O., Roussel, J., Baskaran, A., Langui, D., Korotkova, T., Bacci, A., Bardet, P.-L., Bhatt, D. L., & Wyart, C. (2020). Sensory neurons contacting the cerebrospinal fluid require the Reissner fiber to detect spinal curvature in vivo. *Current Biology*, 30(5), 827–839.

Pagano, J. (1991). *Healing psoriasis: the natural alternative*. Englewood Cliffs, NJ: The Pagano Organization, Inc.

Pahnke, W. N. (1983). Epilepsy. In W. A. McGarey (Ed.), *Physician's reference notebook* (pp. 132–145). Virginia Beach, VA: A.R.E. Press.

- Panagiotopoulos, A., & Fragoulis, G. E. (2023). Comorbidities in Psoriatic Arthritis: A Narrative Review. *Clinical therapeutics*, 45(2), 177–189. <https://doi.org/10.1016/j.clinthera.2023.01.006>
- Paprocka, J., Kijonka, M., Pecka, M., & Sokół, M. (2016). Melatonin in epilepsy: A new mathematical model of diurnal secretion. *International Journal of Endocrinology*, 2016, 3861461. <https://doi.org/10.1155/2016/3861461>
- Park, S. J., & Phan, S. H. (2010). Targeting abnormal airway vascularity as a therapeutical strategy in asthma. *Respirology*, 15(3), 459–471. <https://doi.org/10.1111/j.1440-1843.2010.01724.x>
- Parker GB, Tupling H, Pryor DS. (1978). A controlled trial of cervical manipulation of migraine. *Aust NZJ Med* Dec;8(6):589-93.
- Parker, G. B., Tupling, H., & Pryor, D. S. (1978). A controlled trial of cervical manipulation of migraine. *Australian and New Zealand Journal of Medicine*, 8(6), 589–593.
- Peppercorn, M. A., & Herzog, A. G. (1989). The spectrum of abdominal epilepsy in adults. *American Journal of Gastroenterology*, 84(10), 1294–1296.
- Person, J. R., & Bernhard, J. D. (1986). Autointoxication revisited. *Journal of the American Academy of Dermatology*, 15(3), 559-563.
- Pezzulo, G. & Levin, M. (2015), Re-memembering the body: applications of computational neuroscience to the top-down control of regeneration of limbs and other complex organs, *Integrative Biology*, 7(12): 1487-1517
- Philo, R., & Reiter, R. J. (1978). Characterization of pinealectomy-induced convulsions in the Mongolian gerbil. *Epilepsia*, 19(5), 485–492.

Pisetsky, D. S. (1997). DNA and the immune system. *Ann Intern Med*, 126, 169-171.

Portincasa, P., Di Ciaula, A., Bonfrate, L., Stella, A., Garruti, G., & Lamont, J. T. (2023). Metabolic dysfunction-associated gallstone disease: Expecting more from critical care manifestations. *Internal and Emergency Medicine*, 18, 791–812.

Pollock, W. J., McConnell, C. F., Hilton, C., & Lavery, C. R. (1986). Virilization secondary to massive ovarian edema. *American Journal of Clinical Pathology*, 86(4), 541–546.

Porres J. M. (1977). Jejunoileal bypass and psoriasis. *Archives of dermatology*, 113(7), 983.

Ralph, C. L. (1984). The pineal gland and geographical distribution of animals. *International Journal of Biometeorology*, 28(4), 193.

Ramírez-Boscá, A., Navarro-López, V., Martínez-Andrés, A., Such, J., Francés, R., Horga de la Parte, J., & Asín-Llorca, M. (2015). Identification of Bacterial DNA in the Peripheral Blood of Patients With Active Psoriasis. *JAMA dermatology*, 151(6), 670–671.

Reddy, D. S. (2009). The role of neurosteroids in the pathophysiology and treatment of catamenial epilepsy. *Epilepsy Research*, 85(1), 1–30. <https://doi.org/10.1016/j.eplepsyres.2009.02.017>

Reich K. (2012). The concept of psoriasis as a systemic inflammation: implications for disease management. *Journal of the European Academy of Dermatology and Venereology: JEADV*, 26 Suppl 2, 3-11.

Reilly, H. J. (1975). *The Edgar Cayce handbook for health through drugless therapy*. Virginia Beach, VA: A.R.E. Press.

Reiter, R. J. (1984). *The pineal gland*. Raven Press.

- Remer, T., & Manz, F. (1995). Potential renal acid load of foods and its influence on urine pH. *Journal of the American Dietetic Association*, 95(7), 791–797. [https://doi.org/10.1016/S0002-8223\(95\)00219-7](https://doi.org/10.1016/S0002-8223(95)00219-7)
- Ribatti, D., Puxeddu, I., Crivellato, E., Nico, B., Vacca, A., & Levi-Schaffer, F. (2009). Angiogenesis in asthma. *Clinical and Experimental Allergy*, 39(12), 1815–1821. <https://doi.org/10.1111/j.1365-2222.2009.03283.x>
- Richards, D. G., Mein, E. A., & Nelson, C. D. (1999). Chiropractic manipulation for childhood asthma. *The New England Journal of Medicine*, 340(5).
- Robinson, B. (1907). *The abdominal and pelvic brain*. Hammond, IN: Frank S. Betz.
- Rodin, A. E. (1963). Inhibiting effect of the pineal body on the transplantation of Walker 256 carcinoma in rats. *American Journal of Clinical Pathology*, 39(2), 228–231.
- Rodriguez, E., & Caprile, T. (2001). Functional aspects of the subcommissural organ–Reissner's fiber complex with emphasis in the clearance of brain monoamines. *Microscopy Research and Technique*, 52(5), 564–572.
- Roe, D. A. (1965). Nutrient requirements in psoriasis. *New York J Med*, 65, 1319–1326.
- Roe, D. A. (1966). Current concepts of the low taurine diet in psoriasis. *Cutis*, 2, 1013–1020.
- Roostaei, T., Nazeri, A., Sahraian, M. A., & Minagar, A. (2014). The human cerebellum: A review of physiologic neuroanatomy. *Neurologic Clinics*, 32(4), 859–869.
- Rose, C. D., Bhatt, D. K., Bhatt, D. L., Wyart, C., & Bhatt, D. L. (2020). Reissner fibre-induced urotensin signalling from cerebrospinal

fluid-contacting neurons prevents scoliosis of the vertebrate spine. *Biology Open*, 9(5), bio052027. <https://doi.org/10.1242/bio.052027>

Rosenberg, E. W., Noah, P. W., & Skinner, R. B., Jr (1994). Microorganisms and psoriasis. *Journal of the National Medical Association*, 86(4), 305-310.

Rousset, J. F., Escat, J., Fourtanier, G., Prevost, F., & Roos, S. (1985). Effets de la cholecystectomie sur les signes fonctionnels associes a la lithiase vesiculaire. *Presse Médicale*, 14(30), 1595–1598.

Rousset, L., & Halioua, B. (2018). Stress and psoriasis. *International journal of dermatology*, 57(10), 1165-1172.

Rudrappa, M., & Paul, M. (2018). Chylothorax. In StatPearls [Internet]. Treasure Island, FL: StatPearls Publishing. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK459206/>

Sadler, R. M., & Rahey, S. R. (2004). Prescience as an aura of temporal lobe epilepsy. *Epilepsia*, 45(8), 982–984.

Saleh, D., & Tanner, L. S. (Updated 2020 Aug 24). Guttate psoriasis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK482498/>

Sances, G., Granella, F., Nappi, R. E., Fignon, A., Ghiotto, N., Polatti, F., & Nappi, G. (2003). Course of migraine during pregnancy and postpartum: A prospective study. *Cephalalgia*, 23(3), 197–205. <https://doi.org/10.1046/j.1468-2982.2003.00480.x>

Schamberg, J. F. (1932). Dietary treatment of psoriasis. *JAMA*, 98, 1633.

Schatteman, L., Mielants, H., Veys, E. M., Cuvelier, C., De Vos, M., Gyselbrecht, L., Elewaut, D., & Goemaere, S. (1995). Gut

inflammation in psoriatic arthritis: a prospective ileocolonoscopy study. *The Journal of rheumatology*, 22(4), 680-683.

Scheffer, I. E., Berkovic, S., Capovilla, G., Connolly, M. B., French, J., Guilhoto, L., Hirsch, E., Jain, S., Mathern, G. W., Moshé, S. L., Nordli, D. R., Perucca, E., Tomson, T., Wiebe, S., Zhang, Y.-H., & Zuberi, S. M. (2017). ILAE classification of the epilepsies: Position paper of the ILAE Commission for Classification and Terminology. *Epilepsia*, 58(4), 512–521.

Schmahmann, J. D. (2000). The role of the cerebellum in affect and psychosis. *Journal of Neurolinguistics*, 13(2–3), 189–214.

Scott-Boyer, M. P., Lacroix, S., Scotti, M., Morine, M. J., Kaput, J., & Priami, C. (2016). A network analysis of cofactor-protein interactions for analyzing associations between human nutrition and diseases. *Scientific Reports*, 6, 19633. <https://doi.org/10.1038/srep19633>

Seishima, M., Seishima, M., Mori, S., & Noma, A. (1994). Serum lipid and apolipoprotein levels in patients with psoriasis. *The British journal of dermatology*, 130(6), 738-742.

Semm, P. (1983). Neurobiological investigations on the magnetic sensitivity of the pineal gland in rodents and pigeons. *Comparative Biochemistry and Physiology Part A: Physiology*, 76(4), 683–689.

Semm, P., Schneider, T., & Vollrath, L. (1980). Effects of an earth-strength magnetic field on electrical activity of pineal cells. *Nature*, 288(5791), 607–608. <https://doi.org/10.1038/288607a0>

Senff, H., Bothe, C., Busacker, J., & Reinel, D. (1990). Studies on the yeast flora in patients suffering from psoriasis capillitii or seborrhoic dermatitis of the scalp. *Mycoses*, 33(1), 29-32.

Shani, U., Ben-Shabat, N., Qassem, R., Lahat, A., Omar, M., Savin, E., Dotan, A., Patt, Y. S., Fisher, L., Zacay, G., Amital, H., Watad, A., &

- Sharif, K. (2024). The association between psoriasis, psoriasis severity, and inflammatory bowel disease: A population-based analysis. *Therapeutic Advances in Gastroenterology*, 17, 17562848241227037. <https://doi.org/10.1177/17562848241227037>
- Sharma, G., Chopra, A., & Bhardwaj, R. (2012). Neurocardiogenic syncope during a routine colonoscopy. *Internal Medicine*, 51(8), 891–894. <https://doi.org/10.2169/internalmedicine.51.6748>
- Sheehan, M. P., & Atherton, D. J. (1992). A controlled trial of traditional Chinese medicinal plants in widespread non-exudative atopic eczema. *The British journal of dermatology*, 126(2), 179-184.
- Sheehan, M. P., Rustin, M. H., Atherton, D. J., Buckley, C., Harris, D. W., Brostoff, J., Ostlere, L., & Dawson, A. (1992). Efficacy of traditional Chinese herbal therapy in adult atopic dermatitis. *Lancet*, 340(8810), 13-17.
- Shinn, A. K., Roh, Y. S., Ravichandran, C. T., Baker, J. T., Ongur, D., & Cohen, B. M. (2017). Aberrant cerebellar connectivity in bipolar disorder with psychosis. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 2(5), 438–448.
- Shreiner, A. B., Kao, J. Y., & Young, V. B. (2015). The gut microbiome in health and in disease. *Current opinion in gastroenterology*, 31(1), 69–75.
- Shuster, S. & Marks, J. (1965). Psoriatic enteropathy, a new cause of steatorrhoea. *Lancet*, 1, 1367-1368.
- Sikora, M., Chrabąszcz, M., Maciejewski, C., Zaremba, M., Waśkiel, A., Olszewska, M., & Rudnicka, L. (2018). Intestinal barrier integrity in patients with plaque psoriasis. *The Journal of dermatology*, 45(12), 1468-1470.

Sikora, M., Chrabąszcz, M., Waśkiel-Burnat, A., Rakowska, A., Olszewska, M., & Rudnicka, L. (2019). Claudin-3 - a new intestinal integrity marker in patients with psoriasis: association with disease severity. *Journal of the European Academy of Dermatology and Venereology: JEADV*, 33(10), 1907-1912.

Sikora, M., Stec, A., Chrabaszc, M., Giebultowicz, J., Samborowska, E., Jazwiec, R., Dadlez, M., Olszewska, M., & Rudnicka, L. (2021). Clinical Implications of Intestinal Barrier Damage in Psoriasis. *Journal of inflammation research*, 14, 237-243.

Sikora, M., Stec, A., Chrabaszc, M., Knot, A., Waskiel-Burnat, A., Rakowska, A., Olszewska, M., & Rudnicka, L. (2020). Gut Microbiome in Psoriasis: An Updated Review. *Pathogens* (Basel, Switzerland), 9(6), 463. <https://doi.org/10.3390/pathogens9060463>

Sieminska, I., Pieniawska, M., & Grzywa, T. M. (2024). The immunology of psoriasis—Current concepts in pathogenesis. *Clinical Reviews in Allergy & Immunology*. PMC11193704. <https://doi.org/10.1007/s12016-024-08991-7>

Simons R. D. (1949). Additional studies on psoriasis in the tropics and in starvation camps. *The Journal of investigative dermatology*, 12(5), 285-294.

Skinner, R. B., Jr, Rosenberg, E. W., & Noah, P. W. (1995). Antimicrobial treatment of psoriasis. *Dermatologic clinics*, 13(4), 909-913.

Snyder, S. H., & Reivich, M. (1966). Regional localization of lysergic acid diethylamide in monkey brain. *Nature*, 209(5019), 1093–1095.

Sobh, M. A., Abdel Rasik, M. M., Moustafa, F. E., el-Sharabasy, M. M., Rezk, R. A., & el-Shamy, S. I. (1987). Dialysis therapy of severe psoriasis: a random study of forty cases. *Nephrology, dialysis*,

transplantation: official publication of the European Dialysis and Transplant Association - European Renal Association, 2(5), 351-358.

Solari, E., Marcozzi, C., Negrini, D., & Moriondo, A. (2021). Interplay between gut lymphatic vessels and microbiota. *Cells*, 10(10), 2584. <https://doi.org/10.3390/cells10102584>

Søyland, E., Funk, J., Rajka, G., Sandberg, M., Thune, P., Rustad, L., Helland, S., Middelfart, K., Odu, S., & Falk, E. S. (1994). Dietary supplementation with very long-chain n-3 fatty acids in patients with atopic dermatitis. A double-blind, multicentre study. *The British journal of dermatology*, 130(6), 757-764.

Spiera, H., & Lefkovits, A. M. (1967). Remission of psoriasis with low dietary tryptophan. *Lancet*, 2(7507), 137-139.

Steck, W. D., Nakamoto, S., Bailin, P. L., Paganini, E., Chang, K., Becker, J. M., Matkaluk, R. M., & Vidt, D. G. (1982). Hemofiltration treatment of psoriasis. *Journal of the American Academy of Dermatology*, 6(3), 346-349.

Still, A. T. (1899). *The philosophy of osteopathy*. A. T. Still.

Straka, T., Vita, V., Prokshi, K., Hörner, S. J., Khan, M. M., Pirazzini, M., et al. (2018). Postnatal development and distribution of sympathetic innervation in mouse skeletal muscle. *International Journal of Molecular Sciences*, 19(7), 1935.

Sugrue, T. (1973). *There is a river*. A.R.E. Press.

Swank, G. M., & Deitch, E. A. (1996). Role of the gut in multiple organ failure: bacterial translocation and permeability changes. *World journal of surgery*, 20(4), 411-417.

Tabbarah, S., Sulaiman, H., Ansah Owusu, F., Rajeev Joshi, M., Marepalli, N. R., Pino, N., Saleem Azam, S., Ali Ahmed, A., & Abraham Suárez Álvarez, J. (2024). Shared Pathophysiology of

Inflammatory Bowel Disease and Psoriasis: Unraveling the Connection. *Cureus*, 16(9), e70148. <https://doi.org/10.7759/cureus.70148>

Tan, D. X., Xu, B., Zhou, X., & Reiter, R. J. (2018). Pineal calcification, melatonin production, aging, associated health consequences and rejuvenation of the pineal gland. *Molecules*, 23(2), 301. <https://doi.org/10.3390/molecules23020301>

Targhazeh, N., Hutt, K. J., Winship, A. L., Reiter, R., & Yousefi, B. (2022). Melatonin as an oncostatic agent: Review of the modulation of tumor microenvironment and overcoming multidrug resistance. *Biochimie*, 202, 71–84. <https://doi.org/10.1016/j.biochi.2022.09.010>

Taubøll, E., Sveberg, L., & Svalheim, S. (2015). Interactions between hormones and epilepsy. *Seizure*, 28, 3–11.

Thomas, G. D. (2011). Neural control of the circulation. *Advances in Physiology Education*, 35, 28–32.

Tierra, L. (1992). *The herbs of life*. Crossing, CA: The Freedom Press.

To, W. S., & Midwood, K. S. (2011). Plasma and cellular fibronectin: Distinct and independent functions during tissue repair. *Fibrogenesis & Tissue Repair*, 4, 21. <https://doi.org/10.1186/1755-1536-4-21>

Todd, R. B. (1855). *Clinical lectures on paralysis, diseases of the brain, and other affections of the nervous system*. Philadelphia: Lindsay & Blakiston.

Trall, R. T. (1854). *The new hydropathic cook-book*. New York: Fowlers and Wells.

Troutwine, B. R., Gontarz, P., Konjikusic, M. J., Minowa, R., Monstad-Rios, A., Sepich, D. S., Bhatt, D. K., Kwon, R. Y., Bhatt, D. L., Solnica-Krezel, L., & Gray, R. S. (2020). The Reissner fiber is

highly dynamic in vivo and controls morphogenesis of the spine. *Current Biology*, 30(5), 827–839.

Tulandi, T., Chen, M.-F., Al-Took, S., & Watkin, K. (1998). A study of nerve fibers and histopathology of postsurgical, postinfectious, and endometriosis related adhesions. *Obstetrics & Gynecology*, 92(5), 766–768.

Turner, C. D., & Bagnara, J. T. (1971). *General endocrinology* (6th ed.). Saunders.

Twardowski, Z. J. (1977). Abatement of psoriasis and repeated dialysis. *Ann Intern Med*, 86, 509-510.

Twardowski, Z. J., Lempert, K. D., Lankhorst, B. J., Welton, W. A., Whittier, F. C., Anderson, P. C., Nolph, K. D., Khanna, R., Prowant, B. F., & Schmidt, L. M. (1986). Continuous ambulatory peritoneal dialysis for psoriasis. A report of four cases. *Archives of internal medicine*, 146(6), 1177-1179.

Twardowski, Z. J., Nolph, K. D., Rubin, J., & Anderson, P. C. (1978). Peritoneal dialysis for psoriasis. An uncontrolled study. *Annals of internal medicine*, 88(3), 349-351.

van Weperen, V. Y. H., Ripplinger, C. M., & Vaseghi, M. (2023). Autonomic control of ventricular function in health and disease: current state of the art. *Clinical autonomic research : official journal of the Clinical Autonomic Research Society*, 33(4), 491–517. <https://doi.org/10.1007/s10286-023-00948-8>

Velez, J. C., Latt, N., & Rodby, R. (2024). Pathophysiology of hepatorenal syndrome. *Advances in Kidney Disease and Health*, 11(2), 87–100.

Velíšková, J., & Desantis, K. A. (2013). Sex and hormonal influences on seizures and epilepsy. *Hormones and Behavior*, 63(2), 267–277. <https://doi.org/10.1016/j.yhbeh.2012.03.018>

Vernon, H. T. (1995). The effectiveness of chiropractic manipulation in the treatment of headache: an exploration in the literature. *J Manipulative Physiol Ther*, Nov-Dec;18(9):611-17.

Voorhees J. J. (1983). Leukotrienes and other lipoxygenase products in the pathogenesis and therapy of psoriasis and other dermatoses. *Archives of dermatology*, 119(7), 541-547.

Wagner, E. M., & Mitzner, W. A. (1995). Visualization of airway obstruction in vivo during pulmonary vascular engorgement and edema. *Journal of Applied Physiology*, 78(3), 1070–1078. <https://doi.org/10.1152/jappl.1995.78.3.1070>

Wang, C. X., Hilburn, I. A., Wu, D.-A., Mizuhara, Y., Cousté, C. P., Abrahams, J. N. H., Bernstein, S. E., Matani, A., Shimojo, S., & Kirschvink, J. L. (2019). Transduction of the geomagnetic field as evidenced from alpha-band activity in the human brain. *eNeuro*, 6(2), ENEURO.0483-18.2019. <https://doi.org/10.1523/ENEURO.0483-18.2019>

Wanner, A. (1995). Is asthma a vascular disorder? *Chest*, 107(3 Suppl), 119S–127S. https://doi.org/10.1378/chest.107.3_Supplement.119S

Wang, L., Gao, F., Zhao, Z., et al. (2024). Spatiotemporal omics of life energy: Towards medicine of frequencies and terahertz drugs. *MedComm – Biomaterials and Applications*, 3, e71. <https://doi.org/10.1002/mba2.71>

Watson, W. C., Sullivan, S. N., Corke, M., & Rush, D. (1978). Globus and headache: Common symptoms of the irritable bowel syndrome. *Canadian Medical Association Journal*, 118(4), 387–388.

Wetterberg, L., Aperia, B., Gorelick, D. A., Gwirtzman, H. E., McGuire, M. T., Serafetinides, E. A., & Yuwiler, A. (1981). Age, alcoholism, and depression are associated with low levels of urinary melatonin. *Journal of Psychiatry and Neuroscience*, 6(3), 67–74.

Wetterberg, L., Beck-Friis, J., Aperia, B., & Petterson, U. (1979). Melatonin/cortisol ratio in depression. *Lancet*, 314(8139), 1361.

Wetterberg, L., Eriksson, O., Friberg, Y., & Vangbo, B. (1984). A simplified radioimmunoassay for melatonin and its application to biological fluids. Preliminary observations on the half-life of plasma melatonin in man. *Clinica Chimica Acta*, 86(2), 169–177.

Uematsu, S., et al. (1988). Quantification of thermal asymmetry, Part 1: Normal values and reproducibility. *Journal of Neurosurgery*, 69, 552–555.

Wheelwright, P. (1954). *The presocratics*. Odyssey Press.

Whittier, F. C., Evans, D. H., Anderson, P. C., & Nolph, K. D. (1983). Peritoneal dialysis for psoriasis: a controlled study. *Annals of internal medicine*, 99(2), 165-168.

Whorton, J. C. (2002). *Nature cures: The history of alternative medicine in America*. Oxford University Press.

Wiciński, M., Szambelan, M., Zabrzyński, J., Sałat, K., Malinowski, B., & Reiter, R. J. (2025). Molecular links between circadian rhythm disruption, melatonin, and neurodegenerative diseases: An updated review. *Molecules*, 30(9), 1888. <https://doi.org/10.3390/molecules30091888>

Widdicombe, J. G. (2003). *Overview of the innervation of the lung*.