The Primary Tone–Setter

Model and Clinical Application of Talsky Tonal Chiropractic

> "*Life is an expression of tone; the cause of disease is any variation in tone.*"
> — D.D. Palmer, *The Chiropractor's Adjuster*, 1910

Executive Summary

The central question: If subluxation is fundamentally about altered nervous system tone, why do we primarily address it through moving bones?

Thesis. Vertebral subluxation is most accurately understood as a secondary, compensatory event. The primary interference takes place upstream in the NeuroSpinal System (also known as the Cranio-Spinal Meningeal Functional Unit), where sustained, stress-mediated meningeal contraction alters tone and information flow. This aberrant tone compels vertebral structures, musculature, and posture to compensate around it. In this model, the NeuroSpinal System is the primary tone setter. Vertebral subluxation is the body's best available adaptation to that primary tonal disturbance.

Core Insight. The meningeal system is not passive covering. It is a contractile, sensorimotor, information-bearing continuum that contracts protectively in response to physical, chemical, or emotional stress. This protective meningeal contraction involves both immediate contractile responses and subsequent fibroblast-to-myofibroblast conversion mediated by TGF-β1 signaling, creating Adverse Mechanical Tension (AMT) that can persist long after the original stressor is gone. The system waits to experience range of motion into the area of restricted tension without a stress response before it will release and begin the process of unwinding and self-adjusting.

Clinical Consequence. By addressing the NeuroSpinal System directly as the Primary Tone-Setter, TTC engages the initiatory mechanism upstream of vertebral compensation. This allows chiropractors to work with both cause and effect—the aberrant tone that creates subluxation and the structural compensations that result from it. TTC can stand alone or enhance existing approaches by addressing this foundational level.

Paradigm. TTC is first a model and only second a technique. It can be used to inform Osseous, Tonal, OsseoTonal, and Tonal Energetic approaches. It clarifies that the most efficient way to communicate with the intelligence of the body is through the tone of the NeuroSpinal System. Tone is the mechanism through which Universal Intelligence manifests and maintains the physical universe. Tone is the medium through which Innate Intelligence coordinates all actions in the body. Tone is intelligence in motion.

First Principles

Talsky Tonal Chiropractic (TTC) first and foremost returns to the original intent of chiropractic—the progressive reduction of physical interference to the physical nervous system maintained by incomplete and abnormal movement of spinal segments.

This foundational principle, championed by generations of principled chiropractors, recognizes that subluxation represents a state of interference that limits the body's capacity to express its full potential for health, adaptation, and self-regulation. The chiropractic profession has long held this truth at its center: that the integrity of the nervous system is paramount, and that interference must be addressed to restore the body's innate ability to heal and function optimally.

TTC honors this foundation while representing a profound shift in how we interact with the nervous system. Principled subluxation-based chiropractors are doctors of cause—we communicate with the intelligence of the body to help the body re-initiate its own process of the reduction of subluxation via chiropractic adjustments. TTC addresses the initiatory process

—the upstream neurophysiology that gives rise to the Vertebral Subluxation Complex (VSC). The focus on the VSC remains central; TTC clarifies what creates it and persists it, not as a negation but as a deeper investigation of cause.

In this understanding, NeuroSpinal Subluxation is fundamentally a state of altered NeuroSpinal tone and informational interference, originating from protective meningeal contraction that creates AMT. The incomplete and abnormal movement of spinal segments, and the tension within the vertebral subluxation complex, represent the body's compensatory adaptation to this upstream tonal dysregulation. TTC does not negate the VSC—it reveals the mechanism that initiates and maintains it.

Part I. The Application of Principles

1.1 Opening Perspective

Chiropractic has always said that life is an expression of tone and that interference to the nervous system limits that expression. Yet in daily practice the profession often defaults to finding fixations and moving bones. **This is the gap. We believe one thing. We often do another.**

Talsky Tonal Chiropractic is an attempt to apply the original chiropractic principles to the actual structure that sets tone first.

1.2 Chiropractic Vitalism Lived, Not Memorized

Any truly principled chiropractor would agree: the bigness of the 33 Principles is not found in memorizing them but in living them in every shift. The body is intelligent. The nervous system is the chief coordinator, operating with perfect responses to the information it perceives. The interference is the altered perception based on physical limitations—limitations that can be reduced through chiropractic-facilitated adjustments. That is the logic.

If the body is intelligent, then our task is to converse with that intelligence, not overpower it. TTC is built on this simple orientation:

- We engage what is ready, not what is stuck.
- We look for the best window in, not the biggest fixation.
- We deliver the least amount of the most effective input so that the body can re-initiate its own process of self-adjustment.

1.3 The Philosophy–Technique Disconnect

Historically, chiropractic philosophy described an intelligent, self-organizing system animated by Innate Intelligence. Technique, however, often treated the body as a stuck machine. **We said "tone," but we adjusted "bones." We said "intelligence," but we delivered force. We said "the body heals itself," but we delivered force to move bones rather than information to allow the body to move itself.**

This disconnect is the reason tonal approaches keep reappearing across decades. Chiropractors have always been trying to find the method that matches the philosophy.

1.4 Tonal Engagement as the Bridge

A tonal approach says: if interference is tonal, the adjustment must be tonal. The system holds tension to protect itself. It will release when it experiences specific safe movement in the line of unwinding. That is why TTC inputs are non-articular, non-osseous, and informationally congruent with the vector of release.

This is not about applying more force. This is about finding the best window in to communicate corrective intent through touch to an intelligent system that wants to correct.

Part II. Clinical Method and Philosophy

The Clinical Problem

When the NeuroSpinal System holds maladaptive tension beyond need, every subsystem must reorganize around that constraint: breath, gait, vestibular integration and gaze stabilization, sensorimotor coordination, autonomic regulation, and load management. This is not a local joint problem; it is global tensional dysregulation within the body's Primary Tone-Setter.

When incoming stress exceeds the body's adaptive capacity, the NeuroSpinal System tightens as an **allostatic response**—a protective adaptation that uses energy to maintain function under perceived stress. At first, this response is not pathological. It is an intelligent attempt by the body to stabilize itself and limit overwhelm. But as tone maintains and increases beyond actual need within the NeuroSpinal system, two key distortions emerge:

- **Misinformation** – Aberrant tension in the NeuroSpinal system alters afferent and efferent signaling.
- **Missing information** – Increased NeuroSpinal tension restricts movement, narrowing the sensory input from proprioceptive and interoceptive pathways. This reduces the signal diversity and richness required for accurate regulation.

Together, these distortions impair the accuracy and clarity of communication between the brain and body. If the overload resolves, tone normalizes. But if it persists, **the system can no longer recognize safety**, and the protective pattern becomes maladaptive—laying the groundwork for vertebral compensation and eventual pathological changes in structure, function, and adaptability.

The Conceptual Reframe

To understand this clinically, we must reconsider what biology fundamentally is. If we grant that biology is not merely chemistry animated by electricity, but a symphony led by intelligence via tensioned membranes and pressurized fluids, then tone becomes both messenger and message—the rhythmic modulation by which a system continually attempts to recalibrate itself.

The spine is not a column of separate joints. It is a tensioned, fluid-coupled, fascia-integrated, dura-anchored communication organ.

In this framing, the NeuroSpinal System is not a passive unit of suspension; it is an active, self-tuning instrument—at once string, soundboard, resonant chamber, and its own tuner—animated by independent contractile motility of the meningeal system and the pulsatile dynamics of CSF.

The Clinical Method

Talsky Tonal Chiropractic treats that proposition as literal. The work is not to force a vertebra to comply with a structural blueprint, but to offer precisely vectored information, delivered with congruent intent, to the NeuroSpinal System so it can better perceive itself and re-initiate its own process of self-correction.

TTC shifts the paradigm: **we are not engaging the nervous system through joint mobilization or osseous thrusts.** Instead of applying force into joint spaces to stimulate articular mechanoreceptors, TTC delivers precise, non-articular communication through touch to the soft tissue and meningeal system—communicating directly with the tone and tension of the NeuroSpinal System.

We are not working with bones—we are working with a complex, sensory-rich, independently motile suspension system.

Premise: The intelligent system always seeks to self-correct; it is often missing accurate information, which tonal inputs are designed to provide.

Intent: Contact is made with the intent to communicate with the intelligence of the body through the physical matter of the nervous system.

Location, Vector, and Timing: Global tonal indicators guide the analysis; tonal pressure testing and leg balancing verify location, vector, and timing of input. We contact where the system confirms most receptivity, in the direction parallel to the line of unwinding, and only when the best window in is open and available. Between encounters, time is allowed for the body to process the adjustment.

Amplitude and Quantity *(Less is More)*: The least amount of the most effective input—both in magnitude (enough to be heard, not enough to threaten or overpower) and number of contacts (enough to facilitate the body's self-correction process, not enough to interfere with the system's own corrective process).

The Clinical Art

We do not seek to apply force to what is stuck—**we seek to engage what is ready.**

We are not looking for what's fixated—**we are looking for the best window in.**

We are not looking for the most resistance—**we are looking for the most receptivity.**

Find the best conversational opening, the best window in, and speak the language the system actually uses via tone, directional information, timing, and congruent intent. We are not pushing bones into place; we are giving the body better information so it better perceives itself and its environment. We verify the conversation through system balancing (leg checks or other balancing analyses). Outcome measures include improved adaptability, regulation, breathing ease, postural efficiency, and recovery after stress—indicators of the ongoing process of subluxation reduction.

The Paradigm Shift

This is a move from localized segmental adjustments to the Tonal Model—engaging the NeuroSpinal System (C-SMFU) directly as the main functional unit through global tonal inputs that facilitate the body in its own adjustment process. It is not about us doing the adjusting—it is about engaging in a dialogue with the intelligence of the body through touch and congruent intent, so that it can re-initiate its own process of self-correcting, unwinding, and becoming more whole.

Part III. The NeuroSpinal System (Cranio-Spinal Meningeal Functional Unit)

Terminology Note

Throughout this paper, *NeuroSpinal System* and *Cranio-Spinal Meningeal Functional Unit (C-SMFU)* are used interchangeably. We retain both terms to reflect their functional unity and ensure clarity for professionals within and beyond the chiropractic field.

Structural Composition

The NeuroSpinal System comprises:

1. **Brain and spinal cord**
2. **Pia mater:** Innermost meningeal layer, including the dentate ligament
3. **Arachnoid space:** Including the cerebrospinal fluid that fills the space, a dynamic medium for signaling and pressure exchange
4. **Dura mater:** Outermost meningeal layer, with clinical emphasis on the attachments to the movable bony structures of the cranium and spine.

   Clinically significant areas of either direct or indirect dural attachments include: Sphenoid, Zygoma, Occiput, C1, C2, C5, S1-S5, and Coccyx (see Appendix for additional clinically relevant areas)[1]
5. **Continuity:** Fascial continuity includes the outer sheath of the dura, periosteum, and connective tissue bridges—including myodural bridges (Scali et al., 2011; Zheng et al., 2014)—that extend the tensional field beyond the canal

This functions as a single organ of tension and transmission, a **meningeo-fascial continuum** that mechanically unites the cranium, cervical musculature, and dura. This sleeve behaves as a **tensegrity lattice**, dynamically modulating CSF dynamics and global posture.

When it holds maladaptive tension beyond need, every subsystem must reorganize around that constraint: breath, gait, vestibular integration and gaze stabilization, sensorimotor coordination, autonomic regulation, and load management.

Intrinsic Contractile Motility and Tone Generation

This system is not passive—it is active, dynamic, and independently motile.

The multi-layered meningeal system acts as an active communication transfer mechanism to and from the CNS—predominantly through non-synaptic pathways. This system possesses independent contractile motility and is in constant motion, modulating its tone moment to moment as it continuously assesses and responds to changes in tension, movement, and the perception of threat.

Neurosurgeon **Alf Breig** first documented **Adverse Mechanical Tension (AMT)**—a state of aberrant tension in the meningeal system and spinal cord that can disturb neural function even without vertebral displacement (Breig, 1978). His work revealed that the nervous system is vulnerable to stretch, torsion, and sustained tension. Modern histology reveals **α-SMA–positive myofibroblasts** within the meninges, providing intrinsic contractile force (Fede et al., 2018; Langevin & Huijing, 2012) that generates and sustains this tension.

Though the NeuroSpinal System is not a skeletal muscle, it **autonomously sets its own tone**—compelling muscles, joints, and posture to compensate around it. It actively contracts under actual or perceived stress, and expands and relaxes as that stress resolves.

Because of this dynamic responsiveness, the meningeal system functions as the primary tone setter in the body, governing the global tension patterns that shape adaptability, breath, posture, energy, and regulation.

Information Transmission, Reception, and Storage

The NeuroSpinal System is not simply a structural framework—it is an **information processing continuum**:

A. Transmission: The dura and fascial network conduct mechanical and bioelectrical signals throughout the body (Becker & Selden, 1985), functioning as a high-bandwidth communication system that may exceed the speed and capacity of traditional neural pathways (Oschman, 2000; Ho & Knight, 1998).

B. Reception: Mechanoreceptors embedded in the dura and meninges respond to tension, movement, and pressure—feeding real-time proprioceptive data into the central nervous system.

C. Storage: Emerging research suggests that fascia and meningeal tissues may retain "mechanical memories"—patterns of tension that persist after the original stressor has resolved, influencing future responses (Fede et al., 2018).

Working hypothesis: The NeuroSpinal System functions as a high-bandwidth, analogue-digital interface that regulates the tone through which Innate Intelligence coordinates global adaptation.

The NeuroSpinal System as the Fountainhead of Tone

If tone is the organizing principle of life—as D.D. Palmer proposed—then the NeuroSpinal System is the **primary tone generator** of the human body.

When stress overloads the system, the meninges **contract protectively** through both immediate contractile responses and subsequent fibroblast-to-myofibroblast conversion mediated by TGF-β1 signaling. This increases **baseline tension** in the NeuroSpinal continuum. **Compensatory patterns emerge** in posture, muscle tone, and vertebral position. The brain perceives the aberrant tension in the continuous fascial-dural system and responds by commanding compensatory muscle patterns, which then pull on bony structures, creating postural shifts, gait disturbances, and joint fixations—initiating the cascade of dyskinesia, dysafferentation, dysponesis, dysautonomia, and degeneration.

This means:

- **Vertebral misalignments are secondary compensations** to primary tone distortions
- The musculoskeletal system organizes itself around a central imbalance
- Bones move and hold their positions as a result of core dural and fascial tension, not the other way around

While osseous approaches can achieve meaningful changes when they influence the underlying NeuroSpinal tone, TTC engages the NeuroSpinal System directly as the primary tone-setter. This facilitates a learning experience for the nervous system that allows it to re-initiate its own process of subluxation reduction and become increasingly effective at self-correction.

Part IV. From Bone-on-Nerve to Tone-First: Historical Evolution

4.1 The Traditional Subluxation Model: Compression First

For most of chiropractic's history, subluxation was defined structurally—as a misalignment or fixation of spinal vertebrae producing neurological effects through mechanical compression or irritation. While this structural model helped establish chiropractic's early identity and produced meaningful clinical results, it began at the wrong point in the pathophysiological sequence. Osseous models started with joint fixation and vertebral compensation, not recognizing that neurological interference begins upstream in the NeuroSpinal System (C-SMFU) with aberrant tension that drives those structural changes. They did not address the initiation of the subluxation process—the neurological interference in communication between brain and body that occurs first and foremost in the aberrant tension within the C-SMFU, initiating the cascade of dyskinesia, dysafferentation, dysponesis, dysautonomia, and degeneration.

4.2 The Shift from Compression to Tension-Based Interference

Modern neuroscience increasingly challenges the long-held assumption that vertebral misalignment routinely causes neural interference through direct mechanical compression. Dr. Heidi Haavik has demonstrated that interference more often stems from **tension, distortion, and altered afferent input**—not direct compression of nerve roots (Haavik & Murphy, 2007).

Decades earlier, neurosurgeon **Dr. Alf Breig** documented that **Adverse Mechanical Tension (AMT)**—aberrant tension in the meningeal system and spinal cord—can disturb neural function even in the absence of vertebral displacement (Breig, 1978). His research revealed that the nervous system is vulnerable to stretch, torsion, and sustained tension, particularly when the dura and spinal cord are placed under aberrant mechanical load.

This shift from compression to tension represented a fundamental reconceptualization:

- **Compression model**: Bone → Nerve root → Dysfunction
- **Tension model**: Stress → Meningeal tension → Altered neural signaling → Compensatory vertebral patterns

In the tension-based model, the NeuroSpinal System becomes the primary site of interference. Neural interference stems from aberrant NeuroSpinal tension, not primary compression—redirecting the focus of chiropractic from bones to tone.

4.3 Allostatic Load: A Physiological Model for Aberrant Tone

When incoming stress exceeds the body's adaptive capacity, the NeuroSpinal System tightens as an **allostatic response**—a protective adaptation that uses energy to maintain function under perceived stress.

At first, this response is not pathological. It is an intelligent attempt by the body to stabilize itself and limit overwhelm. But as tone increases within the NeuroSpinal system, two key distortions emerge:

- **Misinformation** – Aberrant tension alters afferent and efferent signaling.
- **Missing information** – Increased NeuroSpinal tension restricts movement, narrowing sensory input and reducing signal diversity required for accurate regulation.

Together, these distortions impair communication between brain and body. If the overload resolves, tone normalizes. But if it persists, **the system can no longer recognize safety**, and the protective pattern becomes maladaptive in that it is being held beyond need.

4.4 Facilitated Subluxation and Meningeal Models (Epstein)

Donald Epstein, D.C. made a crucial contribution by distinguishing between two classes of subluxation:

Class A (Structural Subluxation): Traditional vertebral misalignment with associated fixation and local mechanical dysfunction.

Class B (Facilitated Subluxation): A tension-based state of the cord-meningeal system, often evident at dural "gateway" regions (craniocervical and sacro-coccygeal attachments). This is not primarily structural—it is a sustained protective contraction of the NeuroSpinal System that precedes and drives structural compensations.

Epstein recognized that gentle, low-force contacts at these gateway areas could cue reorganizational responses, including the emergence of the network spinal wave—a propagating pattern of movement that reflects the nervous system's self-correction process.

This was the first professional articulation within chiropractic of the initiatory neurophysiological step in the process of both subluxation and subluxation reduction, and the chiropractor's role in facilitating that process.

TTC builds directly on this insight: there is a primary NeuroSpinal tone pattern that must be addressed before vertebral work will have lasting effect. The protective meningeal contraction that Epstein identified as facilitated subluxation—creating AMT—is the same mechanism TTC engages through precise, non-articular, directional input parallel to the vector of unwinding. **(For acknowledgment of Network Spinal's foundational contributions and TTC's distinct methodological approach, see Section 5.4.)**

Part V. Historical Lineage and Positioning

5.1 Tonal Pioneers

The evolution from structural to tonal models was gradual, built on the insights of many innovators:

Daniel David Palmer, D.C. (1895): Founded chiropractic in Davenport, Iowa, establishing tone as chiropractic's foundational principle. In *The Chiropractor's Adjuster* (1910), Palmer wrote: *"Life is an expression of tone; the cause of disease is any variation in tone."* His philosophy of Innate Intelligence and tone-based interference laid the vitalistic foundation for all subsequent tonal approaches in chiropractic.

Richard Van Rumpt, D.C. (1923–1930s): Created **Directional Non-Force Technique (DNFT)**, making widespread use of leg checks and reflex indicators to identify the optimum point and direction of correction. Van Rumpt discovered in 1923 that a very specific light force thrust was successful in accomplishing osseous correction, perfecting the reactive leg reflex in the 1930s. DNFT demonstrated that force was not necessary for neurological change—precise information was more important. Van Rumpt is credited as the original developer of the "reactive leg reflex."

Major Bertrand DeJarnette, D.C. (1930s–1940s): Developed **Sacro-Occipital Technique (SOT)**, which introduced the concept of using indicators to assess the body's organizational state and emphasized cranial-sacral relationships and the role of the meninges in coordinating spinal mechanics.

B.J. Palmer, D.C. (1931): Developed the **HIO (Hole-In-One) Toggle Recoil** upper cervical technique, recognizing that specific cranio-cervical contacts could influence global function through articular engagement of the upper cervical spine.

Hugh B. Logan, D.C. (1931): Developed **Logan Basic Technique (LBT)**, presenting his "Universal Health-Basic Technique" which focused on the sacrum as the base of the spine. Logan reasoned that if the sacrum was subluxated, it would affect the stability of the entire spine. The technique uses light force contact on the sacrotuberous ligament, demonstrating early tonal awareness in addressing spinal mechanics through sustained, gentle pressure.

Irwing N. Toftness, D.C. (1936–1950s): Developed **Toftness Technique**, widely regarded as the first completely tonal chiropractic technique. Dr. Toftness consistently won pre- and post-x-ray competitions for the reduction in scoliosis hosted at Logan University, demonstrating the clinical effectiveness his tonal approach.

Dr. John F. Grostic, Sr., D.C. (1941–1964): Working with Dr. Ralph R. Gregory starting in 1941, Dr. Grostic developed the **dentate ligament cord distortion hypothesis** and the **Grostic Technique**, a precise, low-force upper cervical method recognizing that specific cranio-cervical contacts could influence global tone via structural articular engagement of the upper cervical spine and dentate ligament tension patterns. After Grostic's death in 1964, Dr. Gregory formed the National Upper Cervical Chiropractic Association (NUCCA) in 1966.

J. Clay Thompson, D.C. (1950s): Expanded on leg checks and indicators within a more structural model (**Thompson Technique**), using Derifield leg checks (which originated from DNFT's reflex indicator foundation) and developing them into the Thompson-Derifield analysis system combined with his patented drop-table system (1955).

Alf Breig, M.D., Ph.D. (1960–1978): Swedish neurosurgeon whose pioneering research on **Adverse Mechanical Tension in the Central Nervous System** (1978) demonstrated that tension in the meningeal system and spinal cord can disturb neural function even in the absence of vertebral displacement. His work shifted the paradigm from compression-based to tension-based models of neurological interference, providing scientific foundation for tonal approaches.

Lowell Ward, D.C. (1970s–1980s): Developer of **Spinal Column Stressology (SCS)** and author of *The Dynamics of Spinal Stress*. Dr. Ward's work emphasized viewing the spine as a whole system rather than isolated parts, using seated and standing full-spine x-rays to reveal stress patterns throughout the entire spinal column. His approach influenced subsequent whole-spine dynamic analysis methods.

Donald Epstein, D.C. (1982): Created **Network Chiropractic**—which became **Network Spinal Analysis (NSA)** and is now known as **Network Spinal**. Epstein distinguished between structural (Class A) and facilitated (Class B) subluxation, providing the first professional articulation within chiropractic of the initiatory neurophysiological step in both subluxation and subluxation reduction. His work on tension-based, cord-meningeal subluxation that precedes structural changes represents a foundational insight for all tonal approaches. **(For Network Spinal's contributions and TTC's relationship to this work, see Section 5.4.)**

Marvin Talsky, D.C. (1995–2001): Co-developed **Torque Release Technique (TRT)** in 1995 with Dr. Jay Holder, who invented the Integrator instrument. Talsky developed and structured the Torque Release Model after 30 years of continuous practice. Talsky's work emphasized **direct engagement with the NeuroSpinal system** and the concept that the body could self-adjust when given the right informational input. Talsky continued to refine a more direct, non-articular, NeuroSpinal engagement, which evolved into **Talsky Tonal Chiropractic** in 2001.

Heidi Haavik, D.C., Ph.D. (2007–present): New Zealand chiropractor and neurophysiologist whose groundbreaking research demonstrated that neural interference more often stems from **tension, distortion, and altered afferent input** rather than direct compression of nerve roots. Her neuroimaging research showed that chiropractic adjustments of dysfunctional spinal segments produce measurable changes in brain function (nearly 20% on average in prefrontal cortex processing), neuroplasticity, and sensorimotor integration. Dr. Haavik's work provided crucial scientific validation for tension-based models of subluxation and the neurophysiologic effects of chiropractic care.

Simon Senzon, D.C. (2010s): Through peer-reviewed articles and historical analysis, Dr. Senzon contributed to the philosophical coherence of tonal chiropractic, applying **Integral Theory** to bridge modern scientific frameworks with the vitalistic heritage of chiropractic.

5.2 The Emergence of OsseoTonal Models

As tonal methods matured, a new category emerged: **OsseoTonal**—approaches that retain tonal awareness of the NeuroSpinal System but choose to engage it through joint articulations or joint-space mechanoreceptors.

In essence, any osseous (structural) technique that includes awareness of and reverence for the NeuroSpinal System and incorporates at least some aspect of tonal awareness and intent—both in the analysis for and in the application of osseous adjustments—can be considered OsseoTonal. These approaches demonstrate that **tonal awareness can enhance traditional**

structural approaches, allowing practitioners to work with both structural mechanics and global tone simultaneously.

5.3 The Evolution from Torque Release Technique to Talsky Tonal Chiropractic

Talsky's Tonal Lineage:
Dr. Marvin Talsky's development of tonal approaches drew from direct study with many of the key contributors to tonal chiropractic. Prior to his five years of study under Dr. Donald Epstein, Talsky had already studied DNFT, Toftness, and Logan techniques, worked with Dr. Clay Thompson for 10 years, and practiced with the Activator for many years. This extensive foundation in techniques that have contributed to tonal chiropractic provided Dr. Talsky with deep understanding of the principles and protocols underlying tonal analysis and application.

Epstein's significant contribution was the synthesis of these pre-existing indicators from multiple techniques into a comprehensive tonal analysis system, along with his pioneering work on the analysis and application related to the two wave dynamics (respiratory wave and somatopsychic wave). Talsky's study with Epstein integrated these insights with his prior decade-plus of experience in tonal methods.

The TRT Foundation:
Building on this extensive background, Dr. Talsky co-developed and structured the **Torque Release Technique (TRT)** protocol in 1995 with Dr. Jay Holder, who invented the Integrator instrument. Talsky's structuring of TRT represented an OsseoTonal approach—vectors were originally oriented osseously with tonal awareness and intent, engaging joint articulations to influence the NeuroSpinal System. TRT combined the precision of instrumentation with tonal indicators and leg check verification, demonstrating that tonal awareness could enhance structural engagement.

The Evolution to TTC:
Through continued refinement and clinical observation, Talsky recognized that even more direct engagement with the NeuroSpinal System was possible. Beginning in 2001, **Talsky Tonal Chiropractic** emerged as a completely tonal model and technique, distinguished by contact points and vectors oriented toward NeuroSpinal unwinding rather than oriented around

joint articulations. TTC moved beyond the OsseoTonal model to become pure Tonal Chiropractic—non-articular, non-osseous, with vectors strictly parallel to aberrant tension in the meningeal-dural continuum.

TTC is the evolution of TRT and continues to evolve to this day as new discoveries and refinements emerge. Where TRT engaged tone through osseous contacts, TTC engages the NeuroSpinal System directly through its own structure—the Cranio-Spinal Meningeal Functional Unit (C-SMFU).

5.4 TTC and Network Spinal: Shared Foundations, Distinct Approaches

Acknowledging Network Spinal's contributions:
Donald Epstein's pioneering work on facilitated subluxation (Class B) and the recognition of tension-based, cord-meningeal subluxation that precedes structural changes represents a foundational insight for all tonal approaches. Network Spinal's comprehensive tonal analysis system, synthesized from multiple pre-existing techniques, and the Reorganizational Healing framework expanded the profession's understanding of subluxation as existing within multi-level change processes (energetic, emotional, perceptual). Both TTC and Network Spinal recognize key gateway zones at craniocervical and sacro-coccygeal dural attachments and use indicators and low-force contacts to cue whole-system responses.

Where TTC distinguishes itself as pure Tonal Chiropractic:
TTC maintains exclusive focus on **physical inputs to physical nervous system structures**. TTC does not make the network wave a clinical aim, does not require wave entrainment, and does not intentionally work with energetic facilitation, transformational energetic processes, or reorganizational healing frameworks that extend beyond the mechanobiological effects of precisely applied tension and timing. Network Spinal is appropriately categorized as incorporating aspects of **Tonal Energetics**—a valuable approach that explicitly integrates energetic facilitation with tonal awareness. TTC remains within **Tonal Chiropractic**—physical inputs to the physical structures of the NeuroSpinal System as a means to communicate directional corrective intent through touch to an intelligent system that wants to correct.

TTC's unique methodological contributions:

1. **Vectors strictly parallel to aberrant tension**: TTC contacts are delivered precisely parallel to the line of unwinding, in the direction the NeuroSpinal System needs to experience safe movement
2. **Mandatory tonal pressure testing with leg balancing verification**: Real-time, contact-by-contact verification of location, vector, and timing—the system must confirm "yes" before input is delivered
3. **Non-articular engagement of the NeuroSpinal System**: Strictly meningeal and dural contacts, not through joint spaces or articular mechanoreceptors
4. **Model-first approach**: TTC functions as both a conceptual framework and model (applicable to inform any technique) and a complete standalone technique
5. **Explicit Physical-only intent**: Congruent intent to communicate with the intelligence of the body through the physical matter of the nervous system, without any intentional energetic therapeutics.

TTC represents a distinct methodological choice to remain within pure Tonal Chiropractic, addressing NeuroSpinal subluxation through physical inputs to physical structures, verified through neurological indicators.

Part VI. Pathophysiology of NeuroSpinal Subluxation

The Protective Meningeal Response and Development of AMT

Subluxation begins upstream of joint fixation. The initiating event is often the perception of threat—whether actual or imagined. This appraisal, processed by cortical and limbic structures, triggers a protective meningeal contraction in the NeuroSpinal System.

This protective response involves active contractility of the meninges, particularly via the pia mater and dentate ligaments, reinforced by fascial continuities such as the myodural bridge (Scali et al., 2011). When the NeuroSpinal System—the body's Primary Tone-Setter—locks into persistent meningeal contracture, creating what Breig termed Adverse Mechanical Tension (AMT), it operates through three interrelated mechanisms:

Mechanobiology: Under sustained load, mechanotransduction shifts fibroblasts toward myofibroblast behavior through TGF-β1 signaling, embedding α-SMA fibers that sustain contraction and alter extracellular matrix tone and cytokine landscapes within meningeal tissues (Tomasek et al., 2002; Hinz et al., 2012).

Altered Afference: Sensory input from dural and periosteal tissues changes the baseline signals arriving in the brainstem and higher centers, biasing central processing and motor planning. Mechanoreceptors in tense fascia and meninges send repetitive, low-resolution data to the CNS, limiting adaptability.

CSF Hydrodynamics: The pulse, swirl, and return dynamics of cerebrospinal fluid are altered, affecting pressure exchange and chemical signaling throughout the neuraxis (Brinker et al., 2014; Alperin et al., 2005). Strain alters axoplasmic flow and CSF dynamics, reducing nutrient/waste exchange.

The result is a systemic change in the default tensional set-point of the NeuroSpinal System. Many downstream structural findings—postural compensations, joint restrictions, muscle hypertonicity, and vertebral subluxation—become effects, not primaries. Addressing the primary tone allows for more lasting change.

Why AMT Persists: The Persistence of Meningeal Contracture

This is the fundamental mechanism underlying both the initiation of subluxation and the process of subluxation reduction:

Critically, meningeal contracture and the resulting AMT persist long after the original stressor is gone. The meningeal system does not automatically release when the threat dissipates. Instead, it maintains this defensive holding pattern—this aberrant tension—until specific conditions are met: (1) mechanical input through directional movement that addresses the restricted tissue, (2) activation of mechanoreceptors within the fascial-meningeal continuum, and (3) parasympathetic nervous system activation signaling safety (Schleip, 2003; Schleip & Müller, 2013; Bordoni & Zanier, 2013; Hinz et al., 2012; McHugh et al., 2012).

The mechanism parallels the flexibility phenomenon seen under anesthesia (McHugh et al., 2012):

• **Awake:** The CNS limits range-of-motion (e.g., hamstring stretch) to protect against predicted harm through protective muscle contraction and neural mechanosensitivity.

• **Under anesthesia:** Protective tone vanishes, research shows significant increases in range of motion without tissue damage—revealing that the limitation was neural, not structural.

The limitation is neural, not structural. The tissue itself is capable of greater range, but the nervous system restricts it as a protective strategy. Similarly, in subluxation, protective meningeal tone persists—held as stored potential—until the system experiences directional movement in the vector of unwinding without concurrent stress signaling. This provides the safety signal the nervous system needs to release the held contraction and re-initiate its own process of self-correcting.

Why the Contracture Persists After Stress Resolves

1. Myofibroblast Phenotype Stability
Once fibroblasts differentiate into myofibroblasts through TGF-β1 signaling and mechanical load, they maintain their contractile phenotype until receiving specific biochemical and mechanical signals to reverse (Hinz et al., 2012). The α-SMA fibers embedded in these cells create sustained contractile capacity that does not simply "turn off" when the external threat is removed.

2. Lack of Safety Information
The nervous system continues to operate under the original threat model (Woo et al., 2017). Without clear informational input signaling safety—specifically, the experience of safe movement through the restricted range—the protective pattern remains active. The CNS has not received the data it needs to update its internal model and conclude that the defensive posture is no longer necessary.

3. Movement Restriction Creates Self-Reinforcing Cycle
The contracture itself limits the range of motion needed to generate the sensory feedback that would signal safety (Schleip, 2003; McHugh et al., 2012). This creates a self-perpetuating loop: the system restricts movement to protect itself, but that very restriction prevents it from gathering the sensory information (safe movement through previously restricted ranges) that would allow it to release the protection.

4. Stored Adaptive Pattern
The body 'remembers' the protective strategy (Fede et al., 2018). This held tension represents stored potential—an adaptive pattern that served a purpose during the acute threat but has become maladaptive in its persistence. The pattern is held in the tissue as both mechanical tension and as an informational state within the nervous system.

The body is waiting for the safety signal to release—which comes through experiencing safe, directional movement parallel to the line of unwinding.

Why Precision Matters: Layers of Tension and the Best Window In

If simple movement or stretching were sufficient to release these patterns, far more subluxations would self-resolve through daily activity. Many do not. The reason lies in the **layered architecture of compensatory tension** that accumulates around the primary NeuroSpinal restriction.

When the NeuroSpinal System contracts defensively, the body does not experience this tension as a singular, isolated phenomenon. Instead, it organizes **multiple compensatory layers** around the primary restriction:

- **Global postural shifts** to redistribute load away from the area of greatest tension
- **Regional fascial bracing** creating secondary restrictions in myofascial chains
- **Local joint fixations** as vertebrae lock into positions that minimize stress on the contracted meningeal system
- **Protective muscle guarding** layered over all of the above

Each layer represents the body's intelligent attempt to protect the core restriction. But these compensatory layers also **obscure the primary pattern** and create a maze of tension that gross movement cannot penetrate. General range of motion exercises engage the outer compensatory layers without addressing the core NeuroSpinal holding pattern. The system remains in its protective stance because the primary tone-setter—the NeuroSpinal System itself—has not received the specific directional information it needs to release.

This is why finding the best window in is essential. Through tonal pressure testing verified by leg balancing, the practitioner identifies the precise location and vector where the NeuroSpinal System demonstrates receptivity—where the layers of compensation momentarily align to create a clear pathway to the core pattern. When the body confirms "yes" through balanced legs, it is signaling that **this specific contact, in this specific direction, at this specific time** creates a direct line of communication to the primary holding pattern.

This is why the least amount of the most effective input works when gross force does not. The precisely vectored input—parallel to the line of unwinding, delivered with congruent intent, at the confirmed best window in—**pierces through the compensatory layers** to communicate directly with the intelligence of the NeuroSpinal System. This specific directional information, received without triggering a stress response, provides the safety signal the system has been waiting for. It allows the primary tone-setter to release its defensive holding pattern, which then allows the compensatory layers to unwind in cascade.

The body does not need more mechanical input—it needs **the right mechanical input, delivered at the right place, in the right direction, at the right time, with congruent intent**. This is what facilitates the nervous system to re-initiate its own process of detensioning and subluxation reduction. TTC's methodology is designed to work with the intelligence of the body by speaking the precise language the NeuroSpinal System uses to govern tone and coordinate self-adjustment.

The Sequence: From Threat to Release

1. **Threat Appraisal:** CNS perceives danger → meningeal contraction
2. **Fibroblast → Myofibroblast Conversion:** Sustained load and TGF-β1 lock in contractile phenotype

3. **Neural Guarding:** Increased gamma motor gain, altered reflex thresholds
4. **Informational Interference:** Reduced variability and fidelity of afferent/efferent signals (misinformation + missing information)
5. **Persistent Holding Pattern:** Contracture maintained long after stressor resolves, awaiting safety information
6. **Specific Input in Vector of Unwinding:** Precise mechanical + intentional congruence delivered parallel to tension
7. **Safety Signal Integration:** Updated CNS threat model → parasympathetic shift
8. **Cascade of Release:** Myofibroblasts de-tension → dural/fascial slack returns → global tone reorganizes

Key Principle:
TTC is not about forcing tissue change but delivering the least amount of the most effective information so that the system chooses to reorganize and re-initiate its own process of self-correction.

Visual Model: AMT and Release Pathways

Protective Meningeal Contraction is the Primary Mechanism:

```
CLASS B (Facilitated Subluxation):
Threat Perception
  ↓
Protective Meningeal Contraction → AMT
  ↓
Stuck Pattern (cannot self-correct without safety signal)
  ↓ (if sustained)
TGF-β1 → Myofibroblast embedding (deepens AMT)
  ↓ (often leads to)
VSC develops as secondary compensation

CLASS A (Structural Subluxation):
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Blunt Trauma / Direct Mechanical Injury
  ↓
VSC (immediate structural displacement)
  +
Protective Meningeal Contraction → AMT (simultaneous)
  ↓
Stuck Pattern (VSC cannot self-correct due to AMT)

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KEY PRINCIPLE:
AMT can exist WITHOUT VSC.
VSC CANNOT exist without AMT.
It is AMT that prevents self-correction
  in BOTH Class A and Class B subluxation.

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THE RELEASE PATHWAY (for both classes):

Stuck Pattern
  ↓
TTC Input (vector of unwinding + congruent intent)
  ↓
Safety Signal Received → AMT Release
  ↓
Cascade Release → Adaptive Reorganization
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Limits of Fixation-Focused Analysis

Structural techniques can achieve real, even lasting, changes in organization. But they can do so only to the extent that they can influence or indirectly reduce the primary tone of the NeuroSpinal System.

Part VII. TTC Analysis and Adjustment Protocol

With the pathophysiological mechanisms of NeuroSpinal subluxation established, we now turn to the clinical methodology for engaging the NeuroSpinal System's own corrective processes.

TTC prioritizes global indicators for the signs of subluxation and the signs of subluxation reduction, rather than local segmental findings. We are not trying to find all the problems. We are trying to find the one place that is most ready and receptive to receive input.

7.1 Global Tonal Indicators

These indicators fall into three functional categories:

Indicators Used to Measure Outcome Progression

A. Tissue Congestion
Sign of stuck patterns due to chemical stress–induced subluxation.

B. Breathing Patterns
Wave of motion engaging from the sacrum to the occiput.

C. Energy/Heat Radiation
Breaks in continuity at transition zones identify likely access points for the best window in and serve as markers for between-visit pattern analysis; persistent stuck patterns indicate subluxation.

D. Postural Faults
No longer able to properly adapt to forces of gravity in space.

E. Muscle Patterns
No longer appropriate sustained patterns of paraspinal muscle contraction. Most prevalent indication of an excessive response to perceived stress.

Torsional vs Axial NeuroSpinal Tension — Indicators Used to Determine Line of Drive (LOD)

- Foot flare (inversion/eversion)
- Achilles Tension

Indicators Used to Find the Best Window In

- Functional Short leg
- Ankle Pronation/Supination
- Adduction Resistance
- Derifield (Modified)
- Cervical Syndrome (and associated findings)

Verification Through System Balancing

The neurological dialogue is verified by the body's "yes" response—observed as temporary system balancing (e.g., leg length equalization) or equivalent balancing analyses.

7.2 Tonal Analysis Process

We assess:

- Global NeuroSpinal tone
- Tonal indicators in posture, breath, balance, energy, and tone
- Leg checks with tonal pressure testing—looking for a reflex response of temporary and complete balancing as the body's way of saying "yes"

7.3 Determining the Best Window In

The best window in is the most receptive point for the system right now for the chiropractor—identified through **tonal pressure testing** verified with the **neurological reflex of balanced legs**, while also reading observable tonal indicators.

These methods are used as one combined process, not separate tools. This verification process is checking whether the NeuroSpinal System is receptive to unwinding in that specific vector and location.

When the legs temporarily balance, this is the system saying yes—confirming receptivity to the contact.

7.4 Contact Parameters (Location, Vector, Amount, Intent)

Location: Often at or near dural attachment "window" areas (craniocervical, sacro-coccygeal), but also along the course of identified aberrant tension in the NeuroSpinal System.

Vector: Parallel to the line of unwinding.

Amount: Minimal. Enough to be perceived. Not enough to threaten.

Intent: Congruent with the physical input. With the intent to communicate with the intelligence of the body through the physical matter of the nervous system.

TTC contact is a neurological communication. It is touch with vector and a congruent intent. It is given at the best window in. It is the least amount of the most effective input. It allows the system to re-initiate its own adjustment process.

Part VIII. Comparative Positioning

What TTC Is and Is Not

- **Not** about using enough force to move a bone, **about** delivering the least amount of the most effective information to an intelligent system that wants to correct.
- **Not** about finding the primary fixation, **about** finding the best window in.
- **Not** about joint cavitation, **about** re-toning a continuous meningeal instrument toward more optimally distributed tone.

- **Not** about adding, moving, or manipulating energy, **about** precise analysis, congruent intent, and physical inputs to the physical structures of the nervous system.
- **About** identifying NeuroSpinal subluxation and practicing the philosophy, science, and art of facilitating the body to reduce subluxation through physical inputs with congruent intent.
- This distinguishes chiropractic's defining contribution to healthcare.
- **Not** about maintenance as an endpoint, **about** never-ending neurological optimization of adaptability, regulation, and wholeness.

Technique Categories

Osseous approaches use enough force to move a bone via an articular input.

Tonal approaches engage the NeuroSpinal System as a tensional organ first, using non-articular inputs guided by global indicators and verified by system balancing.

OsseoTonal approaches retain tonal awareness of the NeuroSpinal System but engage it through joint articulations or by stimulating mechanoreceptors within joint spaces with the intent to modulate global tone.

Tonal Energetics employ tonal awareness with explicit energetic facilitation, including work with transformational energetic processes. TTC distinguishes itself by maintaining focus on physical inputs to physical nervous system structures, guided by congruent intent and without the use of any intentional energetic therapeutics.

Part IX. Evidence Map And Research Invitations

Historically, the field has shifted from compression narratives toward tension-based realities. The work of Alf Breig, M.D., Ph.D. on adverse mechanical tension, Lowell Ward, D.C. on whole-spine dynamics, and Heidi Haavik, D.C., Ph.D. on neurophysiologic effects of chiropractic input helped reframe the conversation toward systems that compute through tension and timing.

On Intent and Information

Speaking of congruent intent does not smuggle mysticism into method. Living systems are exquisitely sensitive to boundary conditions and small inputs. Contextual factors—including chiropractor skill, awareness, confidence, clarity, and focused intent—demonstrably influence outcomes through well-established neurophysiologic pathways.

Emerging research on mind-matter interaction suggests that focused intent may influence physical systems at small but measurable levels. Meta-analyses of studies using random number generators conducted at Princeton Engineering Anomalies Research (PEAR) Lab have reported intention-linked deviations from chance (Radin & Nelson, 1989), with effect sizes small in magnitude but associated with odds against chance of 50,000 to 1. This research points to the sensitivity of complex systems to focused intent.

When the body is listening, the coherence between your focused intent and your physical input can amplify the effectiveness of the adjustment. Congruent intent—what B.J. Palmer called "that something extra"—enhances signal fidelity in a living system designed to detect and respond to information. While the physical input remains the primary mechanism, the alignment of intent with action strengthens the neurological communication that facilitates the body's self-correction process.

Research Priorities

TTC's clinical effects are compelling, but its mechanisms demand deeper investigation. The non-articular nature of TTC offers unique research opportunities to isolate the meningeal-dural pathway's contribution to the neurophysiological changes documented in chiropractic research.

Dr. Heidi Haavik's neuroimaging research has demonstrated that chiropractic adjustments of dysfunctional spinal segments produce measurable changes in brain function—nearly 20% on average in prefrontal cortex processing. Her established protocols using somatosensory evoked potentials (SEPs), fMRI, and transcranial magnetic stimulation (TMS) could be applied to TTC to investigate whether non-articular tonal contacts produce equal or greater neurological changes through time compared to articular approaches.

The Need for Clinical Outcomes Research

To date, no published controlled trials have isolated TTC methodology from other approaches. While the mechanistic foundation is strong and clinical observations are compelling, rigorous outcomes research is needed to quantify TTC's effects on autonomic regulation, postural adaptation, and long-term neuroplasticity. This represents the next critical step in validating the model.

Limitations and Future Directions

Model Limitations:
This model synthesizes existing research from multiple fields but has not yet been tested as an integrated framework. The proposed mechanisms are extrapolated from fascial research, neuroscience, and chiropractic studies, but direct investigation of TTC-specific pathways is needed.

Research Priorities:

1. Controlled trials comparing TTC to other tonal and osseous approaches
2. Neuroimaging studies using Haavik's protocols to measure TTC's cortical effects
3. Mechanistic studies isolating the meningeal-dural pathway contribution
4. Long-term neuroplasticity outcomes with sustained TTC care
5. Investigation of focused intent as a measurable variable in clinical outcomes

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Part X. Clinical Expectations And Ethics

TTC is not about moving bones. It is about delivering the least amount of the most effective information to an intelligent system that wants to correct. Structural changes often follow, sometimes quickly, sometimes after global tone reorganizes. The clinical ethic is precision and responsibility with a reverence for the intelligence of the body. TTC offers a more direct conversation with the body's corrective intelligence.

This is not about us fixing someone else—it is about communicating a corrective intent through touch to an intelligent system that wants to respond and adjust itself.

Trajectory we aim for: more optimally distributed tone, improved breath and balance, increased resilience to stressors, better recovery after stressors, and a subjective sense of ease and integration—all signs of the reduction of subluxation. This approach supports ongoing optimization through care, evolving toward greater adaptability, regulation, and wholeness.

By releasing protective tone and restoring clear informational flow, TTC facilitates an adaptive reorganization process:

- Expanding the body's **decision space** (capacity for adaptive choice)
- Enhancing the variability and fidelity of sensory input
- Allowing more precise motor output and physiological regulation

This is what people experience as "never-ending optimization." We are not just getting them to maintenance. We are helping them keep evolving in adaptability, coherence, and wholeness.

For the Practitioner: Integrating TTC Principles

If you practice osseous techniques: Use global tonal indicators to inform your segmental analysis. Ask: "What is the NeuroSpinal tone pattern driving this fixation?" Address both cause and effect.

If you practice tonal techniques: Consider whether your vectors engage the meningeal-dural continuum directly, or influence it indirectly through articular mechanoreceptors. Refine toward precision and receptivity.

For all: The shift from "finding fixations" to "finding the best window in" is not technique—it's paradigm. It changes how you see, how you listen, and how you adjust.

Part XI. TTC Glossary

Adaptive Reorganization: The process by which the body integrates new information to create a higher level of coordination, adaptability, and coherence.

Adverse Mechanical Tension (AMT): A state of aberrant tension in the meningeal system and spinal cord that can disturb neural function even without vertebral displacement (Breig, 1978). AMT develops from protective meningeal contraction in response to actual or perceived threat. The initial response involves contraction of existing myofibroblasts. Under sustained load, additional fibroblasts convert to myofibroblasts via TGF-β1 signaling, progressively deepening the AMT and increasing subluxation severity through time. This aberrant tension persists beyond the stressor until sufficient safety signals permit release.

Best Window In: A spatiotemporal opportunity when system receptivity is highest to a minimal, well-oriented input. The most receptive and responsive area of the NeuroSpinal System for a given practitioner at a given time, determined through tonal indicators and verified by a temporary complete leg balancing following a tonal pressure test.

Congruent Intent: Alignment of focused intent and physical action; the coherence between what the chiropractor intends and what the hands communicate. The intent to communicate with the intelligence of the body through the physical matter of the nervous system.

Cranio-Spinal Meningeal Functional Unit (C-SMFU): See NeuroSpinal System.

Facilitated Subluxation (Epstein, Class B): A tension-based state of the cord-meningeal system, often evident at dural gateway regions (synonymous with windows in TTC), that can be addressed with gentle, low-force contacts which cue reorganizational responses. Distinct from structural (Class A) subluxation. This was the first professional articulation within chiropractic of the initiatory neurophysiological step in subluxation.

Least amount of the most effective input: Application ethic guiding TTC contacts in amplitude and quantity—a critical tonal protocol. Enough to be heard by the system, not enough to interfere with the system's own corrective process.

Meningeo-Fascial Continuum: The mechanical and informational continuity between the outer dural sheath and myofascial structures via the myodural bridge and related fascial connections.

NeuroSpinal System: The integrated system of the brain, spinal cord, pia mater (including the dentate ligament), arachnoid space (including cerebrospinal fluid), dura mater, and the connective tissue attachments to the movable bony structures of the cranium and spine, continuing into the outer dural sheath and fascia. Synonymous with Cranio-Spinal Meningeal Functional Unit (C-SMFU). The foundational physical system that sets the tone through which Innate Intelligence coordinates the body's actions.

NeuroSpinal Subluxation: Aberrant global tone within the NeuroSpinal System that degrades adaptability and regulation. The initiatory mechanism that precedes and drives the structural changes observed in the Vertebral Subluxation Complex.

Osseous Adjustment: An adjustment that directly engages joint articulations or vertebral segments to change structure and joint mechanics.

Tonal Adjustment: An adjustment that engages the NeuroSpinal System through tone via directional informational input with congruent intent—non-articular and low force, communicating corrective intent through touch to an intelligent system that wants to correct.

OsseoTonal Adjustment: An adjustment that retains tonal awareness of the NeuroSpinal System while engaging it through joint articulations or by stimulating mechanoreceptors within joint spaces to influence global tone.

Primary Tone-Setter: The NeuroSpinal System in its role as the foundational regulator of global tone; when it holds aberrant tension, all downstream systems must compensate.

Tone: The baseline state of tension, coherence, and responsiveness within the nervous system and its connective tissue envelope. Tone is the mechanism through which Universal Intelligence manifests and maintains the physical universe and the medium through which Innate Intelligence coordinates all actions. Tone is intelligence in motion.

Vector of unwinding: Contact direction parallel to aberrant tension, offered to invite release and reorganization.

Part XII. Epilogue: The Self-Tuning Guitar

Imagine the NeuroSpinal System as a self-tuning guitar—one equipped with advanced AI, sensors, and precision mechanics that can tune itself better than any human ever could. As it's played, it continuously adjusts, achieving perfect resonance. But sometimes the tuning mechanism physically gets stuck. The best thing a human can do is nudge the tuner gently in the right direction and let the intelligence of the system take over.

That's the essence of Talsky Tonal Chiropractic: finding the best window into the NeuroSpinal System and communicating corrective intent through touch to an intelligent system designed to self-correct. By providing the least amount of the most effective input, we facilitate a learning experience for the NeuroSpinal System, helping it become increasingly effective at its own self-adjustment processes. We provide the body with the information it needs to re-initiate its own processes of self-correcting, healing, and becoming more whole.

Tone is the language of intelligence. Our aim is to communicate with it through touch and congruent intent.

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Appendix A: Dural Attachment Sites and Harmonic Resonance in TTC

Harmonic Resonance in TTC

Harmonic Resonance represents one of the most clinically significant discoveries in the technique portion of TTC. Specific anatomical areas demonstrate strong clinical relationships with one another. These harmonic relationships form a key component of TTC analysis and application. The various clinical applications of Harmonic Resonance are unpacked in detail in TTC training workshops and online learning modules.

Organization of Harmonic Resonance Listings:

- Harmonic resonant areas are listed in order of degree of resonance with the primary contact area
- The most distant harmonically resonant areas often demonstrate the strongest resonance
- Numbered segmental areas throughout the spine (Cervicals, Thoracics, Lumbars, Sacral Regions) and numbered zones (Occipital Zones, Sacral Ridge Zones) demonstrate corresponding harmonic relationships—each "1" resonates with all other "1s", each "2" with all other "2s", and so forth

Abbreviations Used in Harmonic Resonance Listings:

- **C1-C7** = Cervical segments 1-7
- **T1-T12** = Thoracic segments 1-12
- **L1-L5** = Lumbar segments 1-5
- **S1-S5** = Sacral regions 1-5
- **O1-O6** = Occipital Zones 1-6
- **SR1-SR6** = Sacral Ridge Zones 1-6

The details of how to use Harmonic Resonance in both analysis and application—including four distinct clinical use cases—are covered in depth in TTC Training Workshops and TTC Online Modules.

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1. Sphenoid

Direct cranial dural attachment to sphenoid body, greater and lesser wings; cranial dura firmly adheres to internal sphenoid surfaces, forming middle cranial fossa floor; the sphenoid is the keystone bone of the cranial base, connecting to 12 other cranial and facial bones, and represents the terminal cranial movable bony structure attachment point of the NeuroSpinal System.

Harmonic Resonant Areas: Coccyx, Zygoma

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2. Zygoma (Zygomatic Bone, NOT Zygomatic Arch)

Indirect fascial pathway (periorbital and neurological): Zygomatic bone periosteum (lateral orbital rim) → Periorbita → Superior orbital fissure/optic canal → Cranial dura; or via zygomaticofacial/zygomaticotemporal foramina → CN V2 dural sleeves; or via trigeminocervical complex → Cervical dura.

Harmonic Resonant Areas: Coccyx, Sphenoid

3. Occiput (Zones 1–6, Bilateral)

Firm skull-base dural attachment at the occiput (tentorium along the transverse-sinus grooves/internal occipital crest), plus the cranial→spinal dura transition at the foramen magnum, the posterior tension band from EOP into the nuchal ligament, and proven C0–C2 myodural bridges make the occiput a primary dural anchoring focal point. Include sutural borders as palpatory foci: lambdoid (occiput–parietals) and occipitomastoid (occiput–temporal), adjacent to EOP/superior-nuchal-line entheses and the greater/lesser occipital soft-tissue corridors—supporting plausible indirect dural coupling.

Occipital Zone System: The occiput is divided into Zones 1-6 bilaterally. Zone 1 is the most lateral area, extending laterally past the occiput. Zone 6 is just off midline. Each occipital zone number demonstrates harmonic resonance with the corresponding numbered areas throughout the spine.

Harmonic Resonant Areas by Zone:

- **O1:** S1, SR1, C1, T1, L1, Greater Trochanter
- **O2:** S2, SR2, C2, T2, L2
- **O3:** S3, SR3, C3, T3, L3
- **O4:** S4, SR4, C4, T4, L4
- **O5:** S5, SR5, C5, T5, L5
- **O6:** SR6, C6, T6

4. C1 (Atlas)

Proven myodural bridges from the suboccipital muscles—RCP minor/major and OCI—passing through the posterior atlanto-occipital/atlanto-axial membranes into the posterior dura, together with high-prevalence dorsal meningovertebral (epidural) ligaments at C1–C2 that tether the posterior dura to the lamina/ligamentum flavum; plus the C1 (suboccipital) nerve exiting in a dural sleeve (with dorsal root/ganglion often rudimentary or absent) and the atlas's unique ring anatomy (no body/spinous process, maximal ROM)—make C1 a dural coupling focal point.

Harmonic Resonant Areas: S1, SR1, L1, T1, O1

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5. C2 (Axis)

Strong posterior meningovertebral (epidural) ligaments at C1–C2 tether the posterior dura to the lamina/ligamentum flavum; proven myodural bridges (RCP minor/major, OCI) pass through the posterior AO/AA membranes into the posterior dura; and the C2 spinal nerve (source of the greater occipital nerve) exits in a dural sleeve continuous with the epineurium—together making C2 a key dural coupling focal point.

Harmonic Resonant Areas: S2, SR2, L2, T2, O2

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6. C5

Strong posterior meningovertebral (epidural) ligaments at C4–5 (100% in one cadaveric series) and variably at C5–6, denticulate stabilization, and a short/thin C5 root exiting in a dural sleeve (at the cervicothoracic junction) make C5 a common tension/traction focal point.

Harmonic Resonant Areas: S5, SR5, L5, T5, O5

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7. Sacrum (S1–S5) and Sacral Ridge (Zones 1–6, Bilateral)

Direct dural attachments and dural sac termination zone: Dural sac terminates at S2 (range S1-S3); posterior meningovertebral ligaments connecting dura to sacral canal; epidural ligaments anchoring dura within sacral canal; filum terminale internum (S2) transitions to filum terminale externum extending to coccyx; anterior sacral attachments via piriformis and pelvic floor muscles.

Sacral Ridge Zone System: The sacral ridge is divided into Zones 1-6 bilaterally, corresponding to the transverse processes and lateral masses of the sacrum. Zone 1 is most lateral (corresponding to S1 lateral mass). Each sacral ridge zone number demonstrates harmonic resonance with the corresponding numbered areas throughout the spine.

Harmonic Resonant Areas by Sacral Region:

- **S1:** C1, O1, T1, L1, SR1, Greater Trochanter
- **S2:** C2, O2, T2, L2, SR2
- **S3:** C3, O3, T3, L3, SR3
- **S4:** C4, O4, T4, L4, SR4
- **S5:** C5, O5, T5, L5, SR5

Harmonic Resonant Areas by Sacral Ridge Zone:

- **SR1:** O1, C1, T1, L1, S1
- **SR2:** O2, C2, T2, L2, S2
- **SR3:** O3, C3, T3, L3, S3
- **SR4:** O4, C4, T4, L4, S4
- **SR5:** O5, C5, T5, L5, S5
- **SR6:** O6, C6, T6

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8. Coccyx

Indirect dural attachment via filum terminale externum: Filum terminale externum extends from S2 (dural sac termination) through sacral hiatus to coccyx; represents final caudal anchor of entire NeuroSpinal System; connects to pelvic floor fascia and musculature (levator ani, coccygeus); represents the terminal caudal movable bony structure attachment point of the NeuroSpinal System.

Harmonic Resonant Areas: Sphenoid, Zygoma

Additional Clinically Significant Areas of Indirect Dural Involvement

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9. Maxilla

Indirect fascial and periosteal pathway to cranial dura: Maxillary periosteum → Periorbita → Superior orbital fissure/optic canal → Cranial dura (middle fossa); or via sphenomaxillary suture → Sphenoid dura; or via masticatory muscles → Temporalis fascia → Temporal dura.

Harmonic Resonant Areas: TBD (to be determined through continued clinical observation)

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10. TMJ (Temporomandibular Joint)

Indirect fascial, articular capsule, and neurological pathway: TMJ capsule → Temporal bone periosteum → Cranial dura; or via masticatory muscles → Temporal/sphenoid dura; or via auriculotemporal nerve (CN V3) which also innervates temporal dura.

Harmonic Resonant Areas: TBD (to be determined through continued clinical observation)

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11. Temporal Bone near Parietomastoid and Occipitomastoid Sutures

Direct cranial dural attachment at suture lines: Direct dural attachment to inner table of temporal bone at both sutures; SCM attachment to mastoid process creates external fascial leverage affecting temporal bone position and suture dynamics.

Harmonic Resonant Areas: Opposite side ASIS (Anterior Superior Iliac Spine)

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12. Parietal Bone near Lambdoidal Suture

Direct cranial dural attachment at suture line: Direct dural attachment across lambdoidal suture; confluence of sinuses (torcula) near lambda; falx cerebri and tentorium cerebelli attach at this region; posterior cervical muscles create caudal traction via nuchal ligament.

Harmonic Resonant Areas: TBD (to be determined through continued clinical observation)

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13. C3

Indirect pathway via meningovertebral ligaments: Meningovertebral ligaments present at C3 level; C3 nerve root dural sleeve; dentate ligament at C3 level.

Harmonic Resonant Areas: S3, SR3, L3, T3, O3

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14. C4

Indirect pathway via meningovertebral ligaments: Meningovertebral ligaments present at C4 level (100% occurrence documented at C4-C5 interspace); dentate ligament at C4 level; C4 nerve root dural sleeve.

Harmonic Resonant Areas: S4, SR4, L4, T4, O4

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15. C6

Indirect pathway via meningovertebral ligaments: Meningovertebral ligaments present at C6 level (adjacent to 100% occurrence at C4-C5 interspace); dentate ligament at C6 level; C6 nerve root dural sleeve.

Harmonic Resonant Areas: T6, O6

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16. C7 (Vertebra Prominens)

Indirect pathway via meningovertebral ligaments: Meningovertebral ligaments present at C7 level; dentate ligament at C7 level; C7 nerve root dural sleeve; vertebra prominens—most prominent cervical spinous process, representing transition to thoracic spine.

Harmonic Resonant Areas: T7

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17. T1–T2

Direct and indirect dural attachments, neurological hub: Dentate ligaments, meningovertebral ligaments (especially Hofmann's with unique caudocranial orientation), nerve root sleeves; indirect via scalene-first rib-T1 complex and cervicothoracic fascia.

Harmonic Resonant Areas:

- **T1:** S1, SR1, O1, C1, L1
- **T2:** S2, SR2, O2, C2, L2

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18. T5–T6

Indirect (meningovertebral ligaments, fascial continuity, biomechanical apex): Meningovertebral ligaments; sympathetic chain connections; cranial-to-thoracic myofascial continuity via nuchal/supraspinous ligaments; respiratory/intercostal fascia; thoracolumbar fascia extending cranially to T6-T7.

Harmonic Resonant Areas:

- **T5:** S5, SR5, O5, C5, L5
- **T6:** SR6, O6, C6

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19. Lumbar Spine (L1–L5)

Direct dural attachments via meningovertebral ligaments: Robust meningovertebral ligaments throughout lumbar spine, with occurrence increasing caudally: 88% at L1-L2, 91% at L2-L3, 94% at L3-L4, 96% at L4-L5, 97% at L5-S1 (Zheng et al., 2015). Dentate ligaments terminate at L1. Dural sac continues to S2.

Harmonic Resonant Areas by Lumbar Level:

- **L1:** O1, C1, S1, SR1, T1
- **L2:** O2, C2, S2, SR2, T2
- **L3:** O3, C3, S3, SR3, T3
- **L4:** O4, C4, S4, SR4, T4
- **L5:** O5, C5, S5, SR5, T5

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20. Greater Trochanter

Indirect (multiple fascial chains converging at sacrum and lumbar spine): ITB → Gluteus maximus → Sacrotuberous ligament → Sacral periosteum (S2-S4) → Dural sac (terminates S2); or via posterior oblique sling → Thoracolumbar fascia → Contralateral lumbar dura; or via piriformis → Anterior sacrum → Dural sac; or via TFL/ITB → Iliac crest → TLF → Lumbar dura.

Harmonic Resonant Areas: O1, S1

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21. ASIS (Anterior Superior Iliac Spine)

Indirect (iliopsoas fascial chain, abdominal wall connections, pelvic tilt biomechanics): ASIS (sartorius/TFL attachment) → Iliac fascia → Psoas major fascia → Psoas attachments (T12-L5) → Lumbar periosteum → Meningovertebral ligaments (robust at L4-L5, L5-S1) → Lumbar dura; or via inguinal ligament → Abdominal aponeuroses → TLF lateral raphe → Lumbar dura.

Harmonic Resonant Areas: Opposite side Temporal Bone

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22. Anterior Sacral Base

Direct and indirect dural attachments at lumbosacral junction and sacral promontory: Direct via anterior meningovertebral ligaments at L5-S1 (97% occurrence) connecting dura to posterior longitudinal ligament; PLL attaches to sacral promontory. Dural sac terminates at S2. Indirect via iliolumbar ligament, psoas fascia, piriformis (originates from anterior sacrum S2-S4).

Harmonic Resonant Areas: All harmonic resonant areas of S1: C1, O1, T1, L1, SR1, Greater Trochanter

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Summary: Clinical Integration

The anatomical areas documented in this appendix represent all clinically significant contact areas utilized in TTC practice. These locations demonstrate receptivity to tonal inputs as verified through tonal pressure testing and leg balancing. Each area provides either:

1. **Direct dural attachments** (Sphenoid, Occiput, C1, C2, C5, Lumbar spine, Sacrum, T1-T2, Temporal, Parietal, Anterior sacral base)
2. **Indirect dural attachments** via filum terminale (Coccyx)
3. **Indirect fascial pathways** with documented anatomical continuity to the NeuroSpinal System (Zygoma, Maxilla, TMJ, Greater Trochanter, ASIS)
4. **Biomechanical stress zones** where anatomical structure, loading patterns, and pathway convergence create heightened clinical significance (C1-C2, C4-C5, C5-C6, C6-C7, L4-L5, L5-S1, T1-T2, T5-T6, S2, Anterior sacral base)
5. **Neurological convergence zones** where somatic, visceral, and autonomic systems integrate (C0-C1-C2 trigeminocervical complex, TMJ via trigeminal-dural complex, T1-T2, T5-T6)
6. **Harmonic resonance relationships** where specific areas demonstrate measurable

neurological coupling, with the most distant areas often showing the strongest harmonic response

This appendix demonstrates that TTC clinical contact areas are grounded in documented anatomical relationships and clinically observed harmonic resonance patterns. The "best window in" frequently appears at locations where multiple pathways converge, where direct attachments exist, where biomechanical stress concentrates, where harmonic resonance is strongest, or where cranial bone periosteal continuity provides peripheral access to cranial dural tension.

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1. This appendix documents clinically relevant areas of frequent involvement in TTC. These areas represent locations where the NeuroSpinal System demonstrates receptivity to tonal inputs, verified through tonal pressure testing and leg balancing. Each entry provides anatomical basis for the pathway to the NeuroSpinal System. Though movable bony structures are mentioned as anatomical landmarks, the location and intent of contact is not the bony structure itself but rather the soft tissue extensions of the NeuroSpinal System. Contacts are often made near—not necessarily directly on—the referenced bony landmark. ↩