Neurological Reactivity

The neurological system controls the function of the entire body. This is one of the foundational scientific principles of chiropractic, acupuncture and many other natural health methods.

But what I am about to share with you is a revolutionary concept that expands the above principle into a whole new realm of science and philosophy, and gave birth to a new health paradigm and system called the Bio-Kinetics Health System. Discovered and developed by an amazing chiropractic pioneer, Dr. Lawrence E. Newsum, this system seeks to normalize neurological function at the deepest level, restoring healthy function and healing to the body. These new revelations discovered by Dr. Newsum involving Neurological Reactivity, utilize neurological corrections to help the brain and nervous system function at higher levels. It gets into the 'code' that operates through the nervous system, determining function at a cellular level.

HISTORICAL PERSPECTIVES

The cornerstone of the chiropractic profession since its inception over a century ago has been neurological interference. Once the interference was corrected, the innate intelligence of the body would then return the body to normal function and heal the body. This concept was revolutionary at the time and has helped millions worldwide achieve and maintain a higher level of health. But this assumes that 'Innate' intelligence always knows exactly how to run the body and create 'health' at all times. But what if the "Innate" intelligence of the body learns to respond in an abnormal way, and then keeps sending abnormal signals through the nervous system to various organs, tissues and muscles of the body?

Why would Innate Intelligence do this? There is only one answer.

For the survival of the organism.

But to fully understand this, we first have to review some basic facts about the nervous system and how it works.

FOUNDATIONAL NEUROLOGICAL PRINCIPLES

Firstly, the brain and nervous system are primarily a reflexogenic system. This means that a certain input will lead to a certain output. This can be a simple spinal cord reflex loop such as with deep tendon reflexes that everyone likes to test (tapping on your knee and watching it jerk), to more complex withdrawal responses that involve varying degrees of cortical processing. Even organs and the body's autonomic system function mostly through reflexogenic activity. Examples of this are stretch receptors in the intestines triggering peristalsis, increased need for oxygen triggering increased cardiac rate, and increased muscle activity triggering dilation of blood vessels and sweating, are all primarily reflexogenic activities. There must first be accurate and uninterrupted

sensory input to, and activation of the brain, then proper information processing followed by an appropriate and uninterrupted motor response with appropriate sensory feedback of outcomes. This loop completes the cycle of neural regulation. Any level of breakdown in this loop has a consequence. The traditional 'safety pin cycle' demonstrated this concept very elegantly however left off the central processing component. Dr. Newsum's work completed this picture by addressing errors in cortical processing due to functional memory circuits.

Some reflexes are hard-wired, meaning that they are there from birth and are part of the genetic blueprint for your nervous system. The breakthrough that Dr. Newsum discovered involves neurological reactions that are not hard-wired but are learned or programed, and how to interrupt them to return the body to normal energetic function.

Secondly, Dr. Ted Carrick showed that spinal adjustments are a form of afferent stimulation into the brain to increase spatially summative effects on central neurons. This means that nerve signals coming into the brain from neuroreceptors in the body activate cortical, sub-cortical, brain stem and cerebellar neurons, driving them to a more optimal firing potential and improving their central integrative state. This 'supra-segmental' approach set up a functional window that actually changed brain function and had a 'top-down' cascade effect on all post-synaptic neurons and systems under their control.

Research by _____, Long, Byers and Schisler that studied EEG brainwave patterns showed conclusively that the chiropractic adjustment "altered cortical brain patterns." and "Within the first 10 EEG pre and post studies, it was obvious that the adjustments were dramatically changing brain wave patterns… across all frequencies."

Further research by Dr. Heidi Haavik, PhD demonstrated that cervical spine manipulation altered cortical somatosensory processing and sensorimotor integration. "A review of her work shows that Chiropractic adjustments (termed manipulation) have an effect on lower limb muscle strength, altered motor control, altered reflex excitability, improved brain reaction time, changes in cortical processing, improved prefrontal activity, and improvement in muscle strength following the adjustment."
(Sets up a brain imbalance.
The way that chiropractic adjustments have this effect is because adjustments stimulate nerve endings in the joints and muscles in and around the spine and other joints of the body. But there is a down side to this. According to Dr. Carrick and also _____, some adjustments did not improve the balance and in fact made matters worse. Applying chiropractic adjustments to stimulate higher brain centers must be done specifically to the neurological 'lesion' or brain imbalance. This brain imbalance is termed a 'hemisphericity' and is the direct result of disafferentation or abnormal afferent input to the brain. According to Dr. Carrick, this can be the result of decreased joint movement or altered tension of muscle stretch receptors diminishing activation of neuroreceptors and nerve endings in these areas and therefore diminishing activation of specific areas of the brain. Restoring joint movement, normalizing muscle tension and

applying neurologically appropriate rehabilitation exercises and activities increases afferent input and therefore helps improve brain balance and function.

Early on in Dr. Newsum's discoveries, he began to recognize that there was much more going on within the brain and body than simply keeping a static neurological balance. There was a moving balance that was expressed in a variety of neurological and physiological responses. This 'hemispherisity' of brain function, or brain imbalance, was an active and adaptive process. In other words, the brain went into this state of imbalance actively based on memorized or learned neurological patterns and responses.

These abnormal learned neurological patterns are the result of 'stress' reactions within the brain from various stressors, including physical, emotional, chemical and electromagnetic stressors. These stressors include physical injuries, emotional traumas and chemical or electromagnetic exposures, and stimulate the amygdala and other limbic areas, which triggers neurons in the hippocampus
to form and maintain a 'stress memory'.

This happens because the nervous system's (innate intelligence's) first responsibility is to keep the organism alive, not necessarily perfect health. This might seem like a strange concept but what good does a healthy body do if you are being eaten by a tiger?

which facilitate immediate physical reactions associated with a preparation for violent muscular action."

Using the concept of afferent stimulation into the brain, he developed a small hand-held instrument that he named the 'NewStim', that is tuned to deliver a precise amount of neuronal activation from neuroreceptors in the upper cervical spine into areas of the brain where these stress memories are stored. This stimulation interrupts the nerve signals and allows the brain to reprocess the pattern and let it go. Once the pattern is cleared, the brain no longer automatically or reflexively runs this program in the background, allowing the brain to more accurately respond to real-time health needs and to shift this energy from protection back to healing. (add dynamic not static brain balance…)

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"The human response to stressors is under the control of the Central Nervous System and its ability to maintain a regulatory balance with all other bodily systems."
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"The ability to shift is called "Allostasis" or adaptive balance."
"The clinical challenge begins when the stressors create an allostatic load, which the system can no longer accommodate."
"This (neuroregulation) imbalance is often found in evaluating brain function as a result of the effect of stressors overloading the ability of the CNS to maintain ideal balance."
"…every physiological system has its functional limitations and the CNS is no exception. When the allostatic load is reached, the allocation of processing resources becomes the disruption in the integration process. The main issues are timing of the processing and accuracy of the response. A secondary consideration lies in the bottleneck created by the allostatic load on the brain structure itself. The ideal integration of sensory information is challenged and the efficiency of the CNS system is compromised. The motor response to the sensory information is also compromised."
"As the stress or threat to the system increases, through physical, chemical and/or mental stressors, the amount of sensory input will also increase. The majority of the input is below the conscious awareness state. In fact, there is a built in system to block some of the sensory input."
"Pain *(or other stressor)* modulation likely exists in the form of a descending pain modulatory circuit with inputs that arise in multiple areas, including the hypothalamus, the amygdala, and the rostral anterior cingulate cortex. The nervous system appears to have a built in "failsafe" program, where, although the problem still exists, the sensory warning system is blocked or significantly reduced so that the pain *(or other stressor)* is not debilitating. **The conscious mind is relieved, but the subconscious still has to manage the challenge. This will keep the CNS in stress or defense mode."**
"This 'failsafe' program is an example of how the brain responds to stressors and results in **building neuronal patterns** that, while they modulate the sensory stressor warning, subconsciously the system continues to acknowledge its existence and the allostatic load builds. The protection patterns represent the best the system can do when the allostatic load is in play. The brain eventually fails to self-regulate and these patterns become hard wired cortical patterns."
"The neural response builds a neuronal memory connection (structural changes) for survival value."
"These systems of the body were designed to preserve life by optimizing the human's ability to fight, freeze, or avoid a stressor."

“While all humans have neurological predispositions in place that are preprogrammed (genetic), we also have programs that have been learned through experience and training.”

“An excellent example of a learned neurological response is the scenario where a child inquisitively touches a hot surface for the first time and develops a neural association that prevents future injuries. This is an example of experience creating a neural response (function) thus being the driving factor in the need for the brain to rewire itself.”

“Neural patterns begin to develop through repetition. This is how we learn; however, if that pattern is a response pattern designed for short-term application, but becomes a fixed response pattern, the ideal homeostatic balance is disrupted. The real problem lies in the brain’s lack of ability to regulate itself.”

STRESS BUCKET WITH STRESS MEMORY

“Once the nervous system builds toward an inappropriate pattern, the effects of any further challenge to the processing resources will elevate the allostatic load.”

STRESS BUCKET FILLING WITH STRESS MEMORIES

“The flight/fight response can render individuals suffering from chronic stress highly vulnerable to infection.”

“The hippocampus, the region of the brain where memories are processed and stored, can become overwhelmed by cortisol which actually causes atrophy - usually reversible. Circadian rhythms are disrupted. Acute sleep loss confuses the HPA axis and disrupts negative glucocorticoid feedback regulation. The excitatory/inhibitory balance of the autonomic nervous system is disrupted and the neuroregulation of the CNS moves to an allostatic load.”

“The immune system breaks down and the most common way a person learns of their health challenge is through the development of signs or symptoms.“

“The CNS disruption has downstream consequences such as inappropriate muscle response patterns *(muscle testing)* and structural alterations *(arm/leg imbalance)* which, in turn, feed back into the sensory system.”

“In order to alter these patterns the brain will need some form of outside influence to create the opportunity for the system to correct itself.”

“The amount of high quality research, which establishes that the Chiropractic adjustment acts as neurological pattern interrupt.”

“When we consider a disruption to neuroregulation as part of the contributing factors of allostatic load and the role of the brain as the central controlling authority of all body functions, we now have a serious challenge to an ability to maintain ideal health.”

“The internal/external issues that the body faces daily are stressors to the homeostatic balance required to maintain good health.”

“The term “subluxation” has a historical application to the Chiropractic profession. The original theory of vertebral misalignment, which put pressure on the spinal nerve root, tied the profession to structural involvement and to a peripheral neurological foundation. The reason for this lies in the general approach to health challenges being focused on down-stream effects, signs and symptoms treatment, rather than up-steam regulation, being irregularities in regulation control as cause.”

“The ‘Art’ of Chiropractic technique at first was focused on physically affecting (adjustment) the joint function. This was thought to reduce the pressure on the nerve root and therefore allow improved neurological function.”

“In later years the art of the profession began to develop other non-physical approaches, which achieved results similar to the physical model of adjustment.”