Title: Improving Athletic Performance in Youth and Young Adult Adaptive Sports Athletes Through Somatic Movement Re-Education and Therapy.

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**SYNOPSIS**

**Objective**:  Our objective was to employ somatic movement re-education therapy with athletes under the age of 27 diagnosed with Cerebral Palsy or other forms of trauma-related motor impairment to effectively increase balance, strength, mobility and improve overall athletic coordination.

**Methods**:  Each subject was initially observed and video-recorded performing movement gestures in order to establish a baseline and subjectively determine restriction in range of motion (ROM) and mobility. With subjects supported either on a massage table, seated, or on the floor, movement patterns and boundaries (eg. ROM, subjective comfort level, mobility) were further explored by manual evaluative procedures. Verbal feedback of the subjects’ sensory experience was invited throughout. Investigation was conducted of an array of characteristics of connective tissue including, but not limited to: weight, tonus, density, tension, among other variables. When restrictions to ROM and mobility were encountered, alternative avenues to limb mobilization were explored. Post-treatment video-recording provided visual feedback to subjects to assist them in integration and coordination of alternative movement patterns via sensory; visual; verbal; imagery pathways.

**Results**: Preliminary results indicated significantly greater, pain-free ROM; observable gait and posture changes; significantly greater reported limb and movement perception; significantly enhanced sport performance.

**Conclusion**: Feedback from touch, movement and sensation effectively offer alternatives to the treatment of motorically impaired athletes by providing enhanced awareness of their bodies. Somatic movement reeducation therapy can contribute a unique, harmless, and effective approach to enhanced sport performance in the special athlete.

**BODY**

**Introduction**: Madelana and Richard are Somatic Therapists and Educators. We are trained in a variety of somatic modalities. This paper is primarily about our work with TragerWork Movement Therapy or Psychophysical Integration, as it was originally called. Part of our professional practice is to accompany our client as they learn to focus on their body’s ability to receive sensory and motor information through touch and movement via the soft tissue and, we believe, effectively transmit new movement patterns and possibilities to their brain.

For the past 6 years we have been working with young athletes affected with cerebral palsy (CP) or similar neurological disorders categorized as traumatic brain injury (TBI) using Somatic Movement Therapy / Re-Education. We have been assisting these young athletes with achieving noticeable improvements in balance, strength and range of motion, as well as reduced injury occurrence.

Our intention is to share case reports of 2 such athletes with whom we’ve worked and discuss the principles of the therapeutic approach we use. Additionally, we would like to propose questions that, if explored, could provide useful contributions to the growing research related to body, brain, movement, cognition and neuroplasticity.

**Foundations**: In the earliest months of our work with this population, we learned how to approach the children and what exactly we were seeking to impact with them through our work. Basic definitions and concepts became portals to deeper learning, starting with a basic understanding of what is CP? How is it commonly viewed? And how is it commonly treated? Given that the condition of CP is understood to be incurable, treatable primarily with surgical and pharmaceutical interventions, we wondered if our novel and, at this point experimental, somatic approach would be welcomed?

**TBI -** Let’s start with some definitions. The [NIH](https://www.ninds.nih.gov/health-information/disorders/traumatic-brain-injury) (National Institutes for Health) broadly and generally defines TBI as “a form of acquired brain injury, [which] occurs when a sudden trauma causes damage to the brain. [It] can result when the head suddenly and violently hits an object, or when an object pierces the skull and enters brain tissue.  Symptoms of a TBI can be mild, moderate, or severe, depending on the extent of the damage to the brain.”

**CP -** In their September 2011 article in Lancet Neurology[[1]](#endnote-2), Aisen, Lipson, Kerkovich et al defined CP as motor impairment that limits activity, and is attributed to non-progressive disturbances during brain development in fetuses or infants.

Along with these motor disorders, they identified other accompanying complications such as: impaired cognition, communication, and sensory perception; behavioural abnormalities; seizure disorders; or a combination of these features with which CP-affected individuals frequently present.

**Prevalence & Impact -** Since CP is thought to affect three to four individuals per 1,000 (.4%) of the general population which is, itself, experiencing increased life expectancies, the authors appropriately recognize the importance of developing therapies to address the needs of CP-affected adults and children. Occurrences of [TBI](https://pubmed.ncbi.nlm.nih.gov/18240046/)[[2]](#endnote-3) far exceed the CP levels at 30% in the populations of youth aged 0-25.

Supportive and effective therapies for these populations can help them to live more personally satisfying and socially contributing lives as they advance in age.

Since, in our ongoing work, we met with, interacted with, and worked with children affected by both of these traumatic conditions and more, we have come to believe this to be a societally beneficial investigation warranting further study.

**Treatment vs Rehab -** A brief review of the literature supports our anecdotal conclusion that families with children who are CP-impacted turn most frequently and repeatedly to therapeutic treatments like constraint induced movement therapies and botulinum toxin injection.

As our work expanded, more children came to visit us in our clinic setting (as opposed to our volunteer work with them on the field and in their trainings). We began to observe some important and interesting behaviors which we hoped would work to our benefit. Families follow what other families do for treatment options and these medically accepted treatments do not score highly with the children who are being subjected to these treatments. With a basic goal to help them improve balance, strength and mobility using our somatic approach, we focused on addressing the functional limitations of these children.

Naturally, medical interventions are most necessary and also most relied upon particularly because they are financially supported by the current healthcare system. Families with such unexpected traumas do not typically have the funds for what are called “out of pocket” expenses, such as our somatic therapy work, regardless of their purported or suggested efficacy. This was the first hurdle we’d have to overcome.

**Neuroplastic Advantage -** Doidge defines neuroplasticity as “a property of the brain that allows it to change its structure and function in response to activity and mental experience.”[[3]](#endnote-4)

Rehabilitative treatments for this and many other segments of the population have recently focused on neurological interventions in response to the increasing evidence supporting neuroplasticity. In these treatment approaches, improvement is sought to be invoked by capitalizing on the brain’s innate ability to change and adapt throughout life. With the recognition of neuroplastic potential, studies can turn to the investigation of optimal ways to access that developmental potential in the world of rehabilitation.

According to Damiano in Rehabilitative Therapies in Cerebral Palsy: The Good, the Not Good, and the Possible[[4]](#endnote-5), there is growing recognition of the importance of motor activity for the development and maintenance of central nervous system pathways as well as for recovery of function when injury has been sustained. She indicates Physical Therapy being likely to play a prominent role in the creation of these neuroplastic changes where damage has occurred. We do not dispute that, however, we believe that there are other, less researched and academically studied modes that deserve to be explored for their potential as well as the ease of access and, eventually, the self-implementation that can be learned when taught as part of the protocol.

**TRAGERWORK: What we do**

TragerWork is a term that has evolved and been adopted by a growing body of Somatic Practitioners who have been trained by Dr. Milton Trager M.D. and his first generation of students, some of whom are still living and teaching today. Throughout his years of developing the modality that is his namesake, he always told his students that he was “just touching the surface of what was possible.” He encouraged them to take what he taught and, as every great teacher has instructed their students, expand it through the lens of their own unique perspectives.

While a strict definition of Dr. Trager’s work has never been codified and agreed to by his legacy, there are a series of principles which have been used as the basis for teaching and expanding this work. We will examine some of those principles here as a means for both describing our work with the youth and young adult population, as well as a means for connecting to the peer-reviewed research from other fields of study. It is our hope that this may be a jumping off point for future research and exploration.

We recognized the need for a much more thorough review of the literature, but our preparation for this Conference offered the incentive to delve into the literature, to offer some substance to you here, and to demonstrate our sincerity about conducting further investigation.

Before proceeding into the principles, we’d like to mention one shift we have employed in our evolution from our teacher’s. We have adopted the insight of Thomas Hanna and his definition of sensory motor amnesia, as well as his steps to avoid and reverse it. As Practitioners of Tragerwork, we have noted that the principles we employ work exceptionally well when they are combined with an evolving state of self-awareness in the receiver. It is this self-awareness that we believe supports the client’s educational (or re-educational) process alongside the principles employed by our Tragerwork treatment.

PRINCIPLES THAT WORK

**Why We Work With Tissue**

At Week 3 an embryo begins the earliest stages of its brain development with the thickening of the ectoderm and formation of the neural plate, which will eventually give rise to all the neural tissues. This ectoderm layer is also the very layer from which the epidermis and the dermis develop.[[5]](#endnote-6) Ergo, when we touch the skin, we are in fact, touching the brain.

In Job’s Body[[6]](#endnote-7), Deane Juhan (2003, p xxvii) points out that we “…learn about [our] body in exactly the same way that [we] learn about any other object, by feeling it.” He goes on to say “Without this active and continual tactile exploration, the organism literally begins to fail to regulate appropriately its many complexly interwoven systems.”

So every touch of tissue that we offer sends a message to both the conscious and unconscious mind through the neurological archives of the ectoderm.

**Why We Work With Movement**

In Thinking, Walking, Talking: Integratory Motor and Cognitive Brain Function[[7]](#endnote-8), Gerry Leisman et al state that “Reduced postural activity in childhood harms natural exploration of the surrounding, thereby reducing the ability to learn from experiences, and leading to developmental delays.” Further to that, they say “deviations from normal postural development or from normal levels of postural activity can disrupt or delay cerebellar and cortical maturation and may disrupt the underlying oscillatory timing mechanisms on which motor and cognitive binding is based.” This proposed impact on the oscillatory timing mechanism will be revisited later in this paper. For now it is sufficient to note the relationship between reduced postural activity and brain development and maturation as important reasons to include this population of CP athletes in any somatic therapy and education program that can support their growth, development and ultimate contribution to the society.

In that same article, Leisman and colleagues state “Child development facilitates the creation of functional specialization in adulthood, the principal purpose of which is to facilitate optimized cognitive and motor functioning. The ability to dynamically alter these abilities renders them as a result, plastic. Movement facilitates brain plasticity and the development of interregional associational networks and therefore influences cognitive-motor interaction.” We cite this to reinforce the importance of providing this kind of service to these young athletes with the motivation to perform to help them optimize their functional neurological development. With our work, we believe that the movement aspect capitalizes on the brain’s plasticity and its ability to learn and grow.

**We Find Their Rhythm**

In Chapter 1 of Movement 2018: Brain, Body and Cognition, Merrick and Leisman[[8]](#endnote-9) state that “Nervous system function can be changed by many manipulations, perturbations, and stressors that include enrichment, experience and learning, direct brain stimulation, hormones, stress, trauma and virtually any repetitive stimulus impinging upon the organism.” They conclude saying “… movement facilitates cognition throughout the lifespan.”

In I of the vortex - From Neurons to Self[[9]](#endnote-10), Rodolfo R. Llinás defines motricity as a biological property of a multi-cellular organism that has a need to orchestrate and express active movement. He first describes the creation of a sensorimotor image as a means to fulfilling this need to orchestrate and express the active movement.

Calling the evolution of motricity an internalized embedding of upward moving information, Llinás says “the system takes properties from the outside and pulls them immediately inside” then, “through intrinsic oscillatory properties and electrical coupling, these [outside] properties are [brought in] pulled up the neuraxis and into the encephalization of the brain.” He concludes: “ability to think arises from the internalization of movement.”

Acquisition of this ability is what he refers to as “mindness” defining mind or the mindness state as “that class of all functional brain states in which sensorimotor images, including self-awareness, are generated.”[[10]](#endnote-11)

Daniel Siegel defines mind as “an embodied and relational process that regulates the flow of energy and information.”[[11]](#endnote-12) Siegel calls it “a self-organizing property of a complex system,”[[12]](#endnote-13) describing it as profoundly social: What one person does influences how another person feels.

In practice we use a rhythmic movement, a signature component of our therapy, which exhibits great potential for deeper study. We call it “finding the rhythm.” It’s an underlying principle informing the movement aspect of TragerWork. Rhythmic movement that is repeated throughout, recognizes Merrick & Leisman’s idea of repetition as a means to neurological change.

This rhythm is developed to ensure that it is cohesive for the client which invites deepening states of relaxation and ventral vagal co-regulation.[[13]](#endnote-14) This property of rhythmic movement, offered to their system from the outside, is integrated as in Llinás’ evolutionary process of motricity[[14]](#endnote-15). Delivered from Practitioner to client through this network of mind that is both embodied and related as a flow of moving information, as Siegel defines mind.

Done properly, this process is effortless for the mover and feels soothing, hypnotic and deeply relaxing to the receiver. From our experience on the table and off, when that right rhythm is matched and sustained, a new way of thinking and feeling in the body becomes possible for the subject.

At MYB, we endeavor to offer the young athletes increased ROM, but more important to us is that they experience a **sense** of the increased ROM. We want their movement to be affected, but we really want their cognition of the movement to evolve. This, we believe, is where the greatest harvest is achieved. We are, therefore, encouraged by the aforementioned remarks and the support of the literature.

Another interesting question has arisen specifically related to the movement and rhythm aspects of our work, after early exploration of the literature. The question of vestibular cognition which is raised by Laurence R. Harris in his Commentary in Cognitive Neuropsychology.[[15]](#endnote-16) He proposes that this newly emerging field may have “unexpected implications for our understanding of how the brain works and our ability to provide therapies when neural processes are disrupted.”

The vestibular system, defined by [kenhub.com](http://kenhub.com)[[16]](#endnote-17), is “a somatosensory portion of the [nervous system](https://www.kenhub.com/en/library/anatomy/the-nervous-system) that provides us with the awareness of the spatial position of our [head](https://www.kenhub.com/en/library/anatomy/head-anatomy) and body (proprioception) and self-motion (kinesthesia).” In our work with the athletes, we hope to demonstrate improvement and even potentially overwrite their faulty sense of self-motion and orientation. Certain of the movement aspects of our practices may, in fact, directly impact the vestibular system offering it a sort of natural reset.

Harris identifies pioneering work done by Robert Bárány on the ability of the vestibular system alone to evoke those perceptions (for which Bárány was awarded the Nobel Prize in 1914). And he describes a nineteenth century medical protocol, centrifuging mental patients, and the calming effect it instilled, not unlike baby-rocking done by mothers of newborns. Trager Practitioners have often cited this natural, biological instinctive behavior to explain the positive effects of our rocking.

In the Movement 2018 publication, Merrick and Leisman cite Hebb’s 1949 postulate that one cell exciting another repeatedly produces a change in one or both and they say that this is “not only limited to a particular cell … but to definable anatomical regions.”

Repeated rocking in our treatments, encourages this anatomical, regional ‘excitation’ and can invoke feelings of deep relaxation with activation of parasympathetic receptivity. Alternatively, this rhythmic, rocking may invoke feelings of awareness, potentially engaging a sympathetic response. We utilize movement in sync with their rhythm to establish “excitation” that results in observable change, not only in cells or anatomical regions, but in the entire organism.

**(How) We Work With Resistance**

In Movement 2018 - Brain, Body and Cognition, Merrick and Leisman[[17]](#endnote-18) cite studies that support environmental enrichment and voluntary activity as consistently beneficial to cognitive abilities, learning, and memory including motor learning and executive function. They discuss findings that indicate the benefits of cognitive exercises and motor imagery on motor performance, as well as benefits of motor training’s positive impact on cognition. Neurological information travels a two-way street. We believe that our work with clients takes advantage of both of these “lanes” for the flow of sensory - motor information: afferent and efferent.

One of the distinctions of our work from other rehabilitative practices is in our response to resistance that shows up as movement limitations, holding, tension, or perceived tightness. The traditional CP treatment approaches such as constraint-induced movement therapies and bo-tox injection may, in fact, create restriction in the mindness of the patient. Our observed clinical data from the children we’ve encountered has consistently reflected their dislike of these treatments. In most cases, their choice is directed by their parents, which is typically being directed by the professional opinion of their medical team and not by the child, themself, who will undergo the therapy. Given that they will ultimately have to surrender their own choice, any opposition they feel will have to be suppressed in order to submit to the protocols. It then succeeds that any results obtained will likely come through the filters of pain, restriction, or resistance.

We submit that physical limitation in a body’s movement or its ROM, may be the result of either structural or functional impairments. In this population, we are primarily focused on functional impairments to their movement. Unlike other modalities, when we encounter an area of limitation, we reduce any implied imposition of force. The remedy we are looking for with our movement treatment is that threshold where a state of “voluntary-ness” is present in the nervous system.

Furthermore, we submit that physical limitation or resistance is an indication of an already present, underlying condition of pain, fear of pain, protection from pain, or the lack of mindness around the ability to conduct some movement. We, therefore, do not force through resistance but rather we look for that threshold where voluntary motricity can take place. We are looking to recruit the willingness of the nervous system to permit movement through a continuum of movement sensations. We do this by working **under** any resistance rather than through it.

Along the lines of environmental enrichment, we propose that this somatic approach offers the experience of physical / mental enrichment for these children.

And finally, we are drawn to look at the potential role of brain wave states as a measure of the overall harmonics and the cross-neuronal network theory suggested by Leisman et. al.[[18]](#endnote-19) in the movement re-education process.

**Tuning The Body By Tuning The Oscillatory Timing Mechanism: The Role of Rhythmic Rocking in Somatic Therapy and Re-Education**

In Introduction to EEG- and Speech-Based Emotion Recognition, Abhang, Gawali, and Mehrotra [[19]](#endnote-20) define brain waves as “oscillating electrical voltages in the brain measuring just a few millionths of a volt.” They identify five presently recognized and relatively understood frequencies and they list them in their Table 2.1 which we have borrowed (and updated) to represent here:

Table 2.1. Characteristics of the Five Basic Brain Waves

|  |  |  |
| --- | --- | --- |
| **Frequency band** | **Frequency** | **Brain states** |
| Gamma (γ) | Above 35 Hz | Concentration |
| Beta (β) | 12–35 Hz | Anxiety dominant, active, external attention, relaxed |
| Alpha (α) | 8–12 Hz | Very relaxed, passive attention |
| Theta (θ) | 4–8 Hz | Deeply relaxed, inward focused |
| Delta (δ) | 0.5–4 Hz | Sleep |

In Chapter 3 of this same text, Abhang et al identify delta waves as prominently occurring in brain injuries. Suppression of these delta waves, they say, “leads to an inability to rejuvenate the body and revitalize the brain… Adequate production of delta waves helps us feel completely rejuvenated and promotes the immune system [and] natural healing…”[[20]](#endnote-21)

As long-time yogis and long-practicing meditators, we are especially curious about the relationship between our work and its signature rocking, and oscillatory timing mechanisms (OTM). Because, when we rock with our whole body awareness of movement sensation, the whole body of the client is engaged and receives the wave of this movement throughout. It can be visibly observed that the rocking of a skull will gradually reveal ripples of movement all the way down the body to the legs and feet. Likewise, movement introduced from the foot to the leg will travel up the leg to the pelvis and eventually reveal ripples of movement in the torso and even in the skull. These are observable phenomena. The role played by balancing the OTM and other proprioceptive and kinesthetic features may be instrumental in healing. How might our movement and rocking affect OTM and neurological learning and re-education as part of our somatic therapy?

**ACKNOWLEDGEMENTS**

Below are excepts from Case Report Abstracts offering brief descriptions of the treatment programs we did with 2 young, CP Athletes. These full Case Reports can be found at the following URL:

<https://www.tragerfoundation.org/paris>

along with other video assets depicting the work that we have done with young athletes. They are submitted herein for the sake of continuity and example for the reader’s understanding of our work.

We are grateful to Shea, Levi and their families for granting us permission to tell these stories and share their individual journeys. We are grateful to all the children and families that allowed us to explore of our work as part of their treatment programs and to share the results.

**Case #1 – Shea**

**Client History**

We first met Shea in June 2017 when he was 15 years old. A gifted athlete with tremendous drive, he was restricted by the limitations of Cerebral Palsy (CP) on his affected left side. Shea was a motivated athlete who would push his body to extremes that often caused him injury. The impact of over-driving his non-impacted, right side to compensate for his weaker and functionally-impaired left, CP side was obvious when comparing the muscle strength and tone, particularly of his lower extremities.

Shea’s goal was to play soccer at the highest level possible. He set his sights on becoming the youngest member of the US Para 7 Aside Men’s Team. This is Soccer’s equivalent of the Paralympics team, culminating with International World Cup games. He trained as all world class athletes do: every day. He played on the local high school soccer team, but his inability to strike the ball effectively with his CP-affected left foot put him at a severe disadvantage, which limited his time on the field during games.

**Subjective Information**

Shea’s body was out of balance. The strength and coordination on his CP side was noticeably different. The muscle mass of his right, non-affected thigh and calf were approximately 30% more than his CP leg. He was constantly experiencing pain in his left foot. Hamstrings in both legs were tight and leg cramps were common. His daily weight training focused on maximum weight, primarily on his non-affected side. His CP side was capable of lifting only half the weight of his non-affected side. His injuries were stressing his unbalanced body and taking a toll on his growing body and mind. Shea was ready for a change.

**Objective Findings**

Shea was fortunate to have had no structural surgical intervention, as this is a common medical procedure for CP children. Tendon and muscle lengthening is sometimes used to surgically increase the range of motion in an affected area. Shea had a knee injury in a high school soccer game the year prior to beginning our work together, that required surgical repair. This was on his non-CP-affected leg. Shea did have a minimal Botox treatment to soften his hamstrings prior to our working together, but no casting. These are practices to which young, CP-children are often subjected. We are told that the effect of Botox usually wears off within 3 months. Besides that, there was no medical or structural intervention to his body when we started our work together.

Our objective was to focus on the functional aspects of his movement limitations. We did this by using some of the principles Dr Milton Trager taught, now known as the Trager Approach®. We focused on soft tissue, one of the body’s largest receptors for feeding information to the brain.

Sessions began by using Shea’s natural, unassisted movement range for specific movement sequences. By following his comfortable range, and introducing guidance and suggestion through touch, we were able to extend his range of motion (ROM) leading us to believe that new movement information and ROM possibilities were being fed through the neurological pathways to reduce muscle restriction and improve muscle tone.

This treatment protocol was accompanied by engaging the body’s rhythm and amplifying that rhythm with a gentle rocking sensation applied by the practitioner. Shea’s body responded to this intervention by showing signs of obvious relaxation including deepening breath patterns, relaxed muscle tension, heavier limbs, and decreased resistance to the movement.

With repetition of this type of movement therapy over a period of several weeks, Shea began to show signs of new motor skill abilities. Muscles and tendons that had limited ROM began to experience an increase in ROM. Once the increased range was experienced, a much greater sense of body awareness seemed to emerge. As his CP-limited muscle patterns were being called to action, his strength, muscle mass, and balance improved.

**Case #2 – Levi**

**Client History**

Levi’s has a burning desire to play soccer at the highest level possible despite his cerebral palsy movement limitations. Levi was born with CP detected at an early age. His parents noticed that he was favoring his left side as he was developing his motor skills. He is fortunate to have parents who are proactive with access to the best medical treatment available. They are open minded to explore supplemental care. At 10 years old Levi was one of the youngest CP children we’d worked with thus far. He was referred to us by Ashley, Shea’s father, shortly after we completed our first group of sessions with Shea. Ashley is co-founder and head coach of CPSoccer.

**Subjective information**

Levi is a bright and energetic boy. His body is structurally sound but functionally impacted on his right side. He had been working with several physical therapists when we were introduced, but was willing to try something different. Levi’s parents were proactive. Prior to our working together, he had surgery to his right, CP- affected hand and forearm to lengthen the tendons. Both the arm and hand appeared to be structurally sound. His father shared that the operation improved his limited range of motion in that hand and arm.

**Objective findings**

Levi walked and ran with a limp which is on his right CP- affected side. He did not have the typical tight or palsy “Crane” arm and wrist which is common with CP. But he did have minimal functionality and use of his right hand and arm. It was clear that he had not developed the motor skills in his right, CP-affected side as he had in his left hand and arm. Levi has the capacity to focus and responds to a challenge. It was our belief that using the somatic movement re-education principles of TragerWork, a psychophysical movement modality developed by Dr. Milton Trager, would offer his body the chance to change.

Levi and Richard have worked together since 2018. During this time Levi has experienced a positive change in his body awareness, mobility, coordination, and energy level. One of the major, early breakthroughs Levi achieved in his session work with Richard and Madelana was discovering his new ability to catch and throw a ball with his CP- affected right side.

**Emerging Questions for Future Study**

In our practice and study, it has been both exciting and unexceptional for people to heal themselves through this kind of work with the assistance of talented Practitioners. More research is needed to better understand the mechanisms, the work’s potential in the world of sports and rehabilitation, and links to the current science. This paper and the related presentation offered at the 2022 International Conference on Movement and Cognition were the first steps in exploring what kind of study might be undertaken. Research of this nature requires funding to go along with the vision. Organizations like the Trager Foundation, a non-profit 501c3 dedicated to research and education, are spearheading these kinds of efforts towards exploration and documentation of this work’s potential.

Many questions have arisen for us that could prompt study, but the following are some we are pondering. We would welcome the opportunity to dialogue or collaborate with other interested and like-minded parties. Thanks for your interest and attention to our subject.

* Can MYB’s Somatic Movement Re-education and Therapy Program help youth and young adult adaptive sports athletes
	+ - Reduce injury?
		- avoid surgical intervention?
		- improve sport performance?
* Does the rocking motion of our movement treatment have a direct effect on the vestibular system and what role does that play in improving the subject’s proprioceptive or kinesthetic awarenesses?
* Is consciousness of this awareness necessary for change to occur, or will the subject experience change regardless of whether they are consciously aware or mindful of what the body is experiencing?
* What role does our signature rocking play in producing ideal neural oscillations?
* Are they foundational to enabling change for the subject?
* When a Practitioner effectively taps that individual’s rhythm through the feeling in their own body and mind or sense of awareness, are they essentially tapping into something greater than just the physical body or the shared mindness that exists between the two?

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