

Manual Cranial Therapies and the Treatment of Mild TBI's

Part I

By Don McCann, MA, LMT, LMHC, CSETT

*“Republished with permission from the February 2017 issue of Massage Today,
www.massagetoday.com”*

Over the last 20 years I have had many clients who have had structural soft tissue injuries from car accidents, sports, and falls. Many also had mild traumatic brain injuries (TBI) – i.e. concussions, so they were not only recovering from musculoskeletal issues but also additional symptoms of mild TBI. The big question - would the combination of Cranial/Structural and specialized myofascial therapies address their symptoms from the mild TBI? Since this combination was going to be used to treat their musculoskeletal issues the answer would become apparent. After several treatments using this combination the amazing improvements in the symptoms of the mild TBI were impossible to ignore. Many practitioners of Structural Energetic Therapy®¹ who are trained in this combination of therapies have also had remarkable results. Let's look at just one of the many case histories where a mild TBI showed dramatic improvement.

xxxxxxx expanded version separate file:

CASE STUDY: Gina, a 25 year old mother of three and a successful realtor, was in a car accident that totaled her vehicle and caused her head to hit the windshield. She was unconscious when she was rushed to the hospital and was admitted for a week diagnosed with a concussion and cervical sprain/strain. She was on IV's and told to remain quiet. Additional tests including an MRI and CAT scan showed moderate bleeding in the brain that was stopped with medication. She was released after a week and told to rest with no activity. She had medication to treat her headache and vertigo - symptoms of concussion. After three weeks sitting in dark rooms, minimal activity, and no reading or TV, she was depressed and experienced extreme mood swings from depression to anger. She was very discouraged and feeling desperate that she wouldn't recover. The neurologist said these conditions sometimes take up to a year before she'd see the full extent of her recovery, and they would monitor her with CAT scans and MRI's. Gina's constant neck pain from the cervical sprain/strain added to her depression. She wasn't able to work. She tried making phone calls and going over listings but that only made her headaches, nausea and vertigo worse. She was desperate to have some significant improvement so she could go back to work and take care of her family.

Structural evaluation and kinesiology were used to evaluate the structural effects of the auto accident on Gina's whole structure including the cervical sprain/strain effect on the brain stem. Specific kinesiological tests to evaluate the cranium were also applied to show the extent of the cranial distortion and its effect on the meninges and the structural alignment of her brain. There was a specific torsion distortion in the cranial motion at the joint where the cranial motion takes place (SBS). This was made worse when she hit her head so all the cranial bones became more distorted. This meant the meninges that support the brain could be significantly distorted since they relate directly to the organization of the cranial bones. This could result in a lack of balance and support for the brain causing axial strains and inflammation. All of this was confirmed with MRI and CAT scans. The inflammation was restricting brain function, and could result in chronic traumatic encephalopathy if left untreated. Manual compression of the cranium revealed a fluid buildup indicating that the hydraulic system of the brain was damaged or not working effectively causing inflammation and swelling and a buildup of waste products like debris, dead and damaged cells, amyloid beta and talc. The inflammation from these waste products creates inflammation that affects sleep, metabolism and mood disorders. It was easy to see why Gina was having so much difficulty.

¹ Don McCann, Beyond The Box: The Evolution of Structural Energetic Therapy®. *Massage Today*, January 2005, Vol 05. Issue 01

The evaluation clearly shows that the function and structure of the brain from the imbalance were in dire need of treatment. The Cranial/Structural Core Distortion Releases (CSCDR)² was applied to release the imbalances in the cranial motion, bring balance to the cranium, and release the distortion of the meninges to balance the brain. The mobilization of the cranium helped restore the Glymphatic and lymphatic systems to pump out the excess fluid. The improved structure of the cranium also took pressure off the brain stem dramatically affecting brain function and mental acuity. The CSCDR also reduced the structural imbalance in Gina's neck taking pressure off the spinal column, and myofascial techniques released the soft tissue spasms.

After the first treatment Gina reported her headaches had decreased, vertigo was no longer constant, neck pain was less and range of motion increased 50%, depression was less, and she was optimistic about her future. She was seen weekly for two weeks. Her headaches and vertigo disappeared, she had full neck range of motion, minimal pain, and was no longer depressed with no radical mood swings. Her neurologist was amazed at the rapid improvement and released her to light work duties. After four more sessions all symptoms disappeared and her endurance and energy increased to pre-concussion levels.

Obviously the combination of Cranial/Structural³ and myofascial therapies had a significant effect on Gina's recovery from her mild TBI.

After a mild TBI many symptoms can appear. Some are directly related as they occur in the brain and others appear as a response to the brain not functioning properly.

Even mild TBI can lead to dramatic long term dysfunction and degeneration of the brain. Science has shown us new systems responsible for the health and wellbeing of the brain. These have given us definitive images as to what happens to the brain with a TBI and clear pathways for recovery. Adrienne Larkin has a very informative video on YouTube that was an address to cranial osteopaths which supports this.⁴ This article will expand on these pathways to recovery showing how Cranial/Structural techniques applied by massage therapists are extremely effective in treating and rehabilitating mild TBI.

There is a cerebral blood flow disruption. This directly relates to difficulties with cognition, metabolic imbalances, and physical activity and exercise. Often clients can have dramatic limitations with cognition where reading is either extremely difficult or actually impossible. In addition normal mental activities are challenging and often incomplete. The mental functioning that is necessary for success in our culture is not up to its task. Metabolic imbalances can affect all functions where a functioning metabolism is necessary. This can be especially noticed in relation to the pituitary which often results in lethargy and lack of interest in areas that were extremely important to the client previous to the TBI. Exercise intolerance is directly related to metabolic imbalances and the poorly functioning central nervous system.

Along with the cerebral blood flow disruption there is inflammation and edema after a TBI. This inflammation is also a result of blood brain barrier disruption affecting all aspects of the brain function. In more severe cases there is actually torn brain tissue resulting in dead cells and the inability of the blood brain barrier to properly heal leaving an ongoing worsening condition over time.

² Don McCann, The Evolution of Releasing the Core Distortion. *Massage Today*, July 2014, Vol. 14, Issue 07

³ Don McCann, The Integration of Cranial/Structural and Soft Tissue. *Massage Today*, February 2014, Vol. 14, Issue 02

⁴ Larkin, Adrienne. "How Cranial Osteopathy Can Heal Traumatic Brain Injury". Online Video clip. <https://www.youtube.com/watch?v=zLjHdqB0yc>. *YouTube*. YouTube Posting Date, 30 June 2015. Date of Access, 26 September 2016.

Mood disorders are prevalent and directly related to HPA axis overstimulation (interaction of Hypothalamic/Pituitary/Adrenal endocrine glands). Add to this the metabolic imbalances and mood swings can be as extreme as depression.

The autonomic nervous system is affected by inflammation and edema in the early stages of recovery. If left untreated other problems such as the buildup of talc and amyloid beta can add to an already misfiring autonomic system leading to long term lack of brain function and health problems.

The hydraulics of the brain are damaged. Cerebral spinal flow and blood flow are impaired. The glymphatic system carries cerebral spinal fluid through the brain under pressure, supplying nutrients and taking away waste. It shadows the circulatory system. Both systems are injured in TBI.

1. brain cells are not getting the proper nutrients necessary for proper functioning and healing,
2. waste products like debris and dead and damaged cells, inflammation, amyloid beta and talc all build up creating further degeneration that results in impaired brain functions later in life.
3. residual inflammation “smolders” affecting sleep, metabolism, and mood disorders.

There is also a disruption of the blood / gut barrier and the emergence of allergies and environmental sensitivities, digestive problems and even leaky gut syndrome, again related to the lack of fluid drainage so necessary for the health of the brain.

Part II will discuss additional systems discovered by modern science that can either help or hinder the recovery from TBI. There will also be further case studies and information on this most important health condition.

*This is the long version of the case study which was submitted separately to Massage Today:
Long Version Case Study*

CASE STUDY: Gina, a 25 year old mother of three and a successful realtor, was in a car accident that totaled her vehicle and caused her head to hit the windshield. She was unconscious when she was rushed to the hospital and was admitted for a week diagnosed with a concussion and cervical sprain/strain. She was put on IV's and told to remain quiet. Additional tests including an MRI and CAT scan showed moderate bleeding in the brain that was stopped with medication. She was released after a week and told to rest with no activity. She was given medication to treat her headache and vertigo - symptoms of her concussion. After three weeks of sitting in dark rooms, minimal activity, and no reading or TV, she was depressed and experienced extreme mood swings from depression to anger. She was very discouraged and feeling desperate that she would not recover. The neurologist told her these conditions sometimes take up to a year before she'd see the full extent of her recovery, and they would monitor her with CAT scans and MRI's. Gina's constant neck pain from the cervical sprain/strain added to her depression. Gina was not able to work. She tried making phone calls and going over listings but that only made her headaches, nausea and vertigo worse. She was desperate to have some significant improvement so she could go back to work and take care of her family.

Gina had heard that Structural Energetic Therapy®⁵ would help her recover from her cervical sprain/strain and that there were some Cranial/Structural⁶ techniques that could help speed up recovery from a concussion. When talking to Gina over the phone she was told she could only be treated if her

⁵ Don McCann, Beyond The Box: The Evolution of Structural Energetic Therapy®. *Massage Today*, January 2005, Vol 05, Issue 01

⁶ Don McCann, The Integration of Cranial/Structural and Soft Tissue. *Massage Today*, February 2014, Vol. 14, Issue 02

neurologist would state there was no possibility of hemorrhage or further complications from the treatments. The latest MRI results showed that the bleeding had stopped and the neurologist felt that the Cranial/Structural therapy would be safe, even though he didn't understand how it worked or how effective it could be. Gina was quite agitated when she arrived for her first appointment as the car trip over to the office made her neck pain, headache and vertigo worse.

Structural evaluation and kinesiology were used to evaluate the structural effects of the auto accident on Gina's whole structure including the cervical sprain/strain effect on the brain stem. In addition specific kinesiological tests to evaluate the cranium were also applied to show the extent of the cranial distortion and its effect with the meninges and the structural alignment of Gina's brain. The evaluation showed there was a specific torsion distortion in the cranial motion at the joint where the cranial motion takes place (SBS). This was made worse when she hit her head so all the cranial bones became more distorted. This meant the meninges that support the brain could be significantly distorted since they relate directly to the organization of the cranial bones. This could result in a lack of balance and support for the brain causing axial strains and inflammation. All of this was confirmed with MRI and CAT scans. The inflammation was restricting brain function, and could result in chronic traumatic encephalopathy if left untreated. Manual compression of the cranium revealed a fluid buildup indicating that the hydraulic system of the brain was damaged or not working effectively causing inflammation and swelling and a buildup of waste products like debris, dead and damaged cells, amyloid beta and talc. The inflammation from these waste products creates inflammation that affects sleep, metabolism and mood disorders. It was easy to see why Gina was having so much difficulty.

From the above evaluation it was clear that the structure of the brain and its function from the imbalance were in dire need of treatment. The Cranial/Structural Core Distortion Release (CSCDR)⁷ was applied to release the imbalances seen in the cranial motion, bring balance back to the cranium, and release the distortion of the meninges to balance the brain and the axial strains. In addition the mobilization of the cranium also worked to pump the excess fluid that had built up. This fluid was there due to the injury and the distortion in the meninges where the vessels of both the Glymphatic and lymphatic systems reside. The distortion had prevented those systems from functioning properly and thus they had not been able to effectively remove the fluid, inflammation and tissue debris from the injury. There was an immediate improvement with the increase of the cranial motion from the release of the restrictions with the application of the CSCDR. The improved structure of the cranium also took pressure off the brain stem at the foramen magnum which dramatically affects brain function and mental acuity. The CSCDR also released some of the structural imbalance from Gina's neck taking pressure off the spinal column. The soft tissue of Gina's neck was starting to release its spasms and myofascial holding patterns. Specialized myofascial release techniques were then applied to further address the soft tissue issues in Gina's neck and structure.

The first treatment took approximately an hour and a half. After the treatment Gina reported her headache had decreased and her vertigo went from constant to only present with sudden movements. Her neck pain had decreased and her range of motion was 50% restored. Her depression was less and she felt relaxed and optimistic for the first time since the accident. Gina was seen weekly for the next 2 weeks. Gina's headaches and vertigo disappeared. Gina regained full rom of her neck and was in minimal pain. Gina was no longer depressed or had radical mood swings, and according to Gina's husband she was pretty much back to normal emotionally. She then had another evaluation with her neurologist who was amazed at the rapid improvement and gave her permission to resume light work duties.

⁷ Don McCann, The Evolution of Releasing the Core Distortion. *Massage Today*, July 2014, Vol. 14, Issue 07

Gina continued treatment for four more sessions at which time her symptoms had all disappeared. She also noted that her endurance and energy had dramatically increased back to pre-concussion levels.

Gina had been stuck in a very slow recovery from a mild TBI (concussion) and was not getting better until the manual application of Cranial/Structural techniques. She was fortunate that her neurologist would write an ok for her treatment even though he did not fully understand the parameters or that the cranium and cranial motion could be manipulated for such powerful effects. Gina is only one of many with mild TBI who have been treated and have shown dramatic lasting improvement. The treatments are noninvasive and are based on palpation of the cranial bones to reestablish movement, balance, and function. The fact that this can restore the function of the glymphatic and lymphatic systems in the brain to pump excess fluid and inflammation out of the brain demonstrates their potential for helping not only TBI but many other conditions and diseases that inhibit optimal brain function. In cases of mild TBI there are also structural imbalances caused from that injury that are also very effectively treated as the balance of the cranium and its motion dramatically affect the balance of the rest of the body and helping the body rehabilitate from the structural damages from the injuries also falls within the realm of manual therapeutic massage.