

MARCH IS TRAUMATIC BRAIN INJURY AWARENESS MONTH

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There are manual cranial therapies for massage therapists that can make a significant difference for clients who have had brain injuries. Unfortunately, many massage therapists are unaware of the positive effect they can have with their brain injured clients.

Recent medical research has actually verified systems in the brain that were previously unrecognized. There are three that are of significant importance for manual therapy. The **first** is that they now recognize that the cranial motion exists with a subtle movement of the cranial bones. For years medical schools have been teaching that the cranial bones do not move. The **second** was a breakthrough study at the University of Rochester Medical Center that discovered the Glymphatic system.¹ This discovery was only possible because of advances in technology that allowed them to study living brains. The Glymphatic system is a pressurized system that shadows the blood vessels of the brain and is now recognized as the principle waste removal process for the most sensitive of organs, the human brain. The **third** was a “stunning” discovery at the University of Virginia that overturns decades of textbook teaching that shows the brain is directly connected to the immune system by lymph vessels previously thought not to exist.² While it has always been recognized that there were some lymph vessels in the brain they were thought to be minimal and not of great significance. The new findings show that the brain has a complex and sophisticated immune system based on this newly discovered and extensive lymph system in the brain. Again this only makes sense as the most sensitive organ of the body would need this.

In the past when some of the treatable brain injuries occurred massage therapists were seldom included in the treatment process. If we look at the systems mentioned above we can see that this was a major oversight by the medical community because, once the danger of further hemorrhage or damage to the brain was no longer an issue, massage therapists trained in specialized cranial techniques could have provided one of the primary forms of treatment. This is a bold statement which I now am going to back up.

First we will look at what happens to the above mentioned systems when a traumatic brain injury takes place. When the cranial motion is examined after traumatic brain injury it is dramatically diminished. The injury itself can jam sutures even to the point of causing them to become calcified. In addition there is soft tissue damage. This can be from the surface layers of fascia just under the skin through the reciprocal tension membrane where it passes through the sutures, and inside the lining of the cranium into the tentorium that supports and holds the brain. This can dramatically disrupt the cranial motion and block neurological function as this tissue thickens into scar tissue.

¹ University of Rochester Medical Center. "Previously unknown cleaning system in brain: Newer imaging technique brings 'glymphatic system' to light". *ScienceDaily*, 15 Aug. 2012. Web. 27 Oct. 2012

² **Source URL:** <https://news.virginia.edu/content/researchers-find-textbook-altering-link-between-brain-immune-system>. University of Virginia, Published on *UVA Today* (<https://news.virginia.edu>). Researchers Find Textbook-Altering Link Between Brain, Immune System. June 1, 2015

In the acute stages of brain injury a restriction of the cranial motion can cause a backup of fluids in almost any part of the brain. This backup of fluid causes pressure and swelling on the brain and inhibits brain function. Restoring cranial motion allows the systems of the brain to work normally and release the swelling. In addition, restoring the cranial motion can often result in a balancing of the temporal lobes which often dramatically reduces vertigo, and the inability to concentrate.

Case study: Robin, a 30 year old real estate agent, had a brain injury from an auto accident. For three months she was unable to drive, had significant headaches, could not concentrate, could not stand bright lights, and was on medication for vertigo. She came for treatment because she also had a cervical flexion/extension soft tissue injury. Using kinesiography to evaluate her cranium it was revealed that she had minimal cranial motion and almost no cranial motion of the left temporal bone. In addition, the relationship of the occiput/ atlas/axis was jammed with no motion. The Cranial/Structural Core Distortion Release, a complete unwinding of the restrictions of the cranial motion, was applied which restored full motion to the cranium. Additional synchronizing of the temporal bones and a mobilization of C1 were applied. By the time Robin got off the table she felt her concentration was nearly 100%, her headache that had been present since the injury was gone, the lights in the room were no longer affecting her, and her vertigo had disappeared. Additional sessions further normalized and expanded her cranial motion and also treated the soft tissue injuries in her neck. Within three sessions Robin felt that her brain injury was healed and that she could return to her real estate practice. This was a very good example of how the restrictions of the cranial motion which also jammed C1 had prevented her brain injury from healing. The timely application of Cranial/Structural techniques produced rapid and long lasting improvement.

Cranial motion is involved in both the Glymphatic and lymphatic systems of the brain. However, each deserves special attention beyond just the restoring of the cranial motion. The **Glymphatic system** is the principle waste removal system for cleansing the brain, and a brain injury damages the glymphatic vessels often collapsing or even breaking them. This is especially obvious when there have been broken blood vessels and hemorrhaging as the Glymphatic system shadows the circulatory system. The first symptom of damage to the glymphatic system is swelling. Cerebral spinal fluid and blood will back up or leak out in an area that is damaged. The second is additional inflammation because waste products of the brain accumulate and cause constant irritation which also results in swelling. The third, and this takes place over time when the glymphatic system has not been restored back to full function, is brain degeneration due to lack of waste removal and a buildup of protein and amyloid beta. This may not be evident for a number of years after the injury, and is a major contributing factor to the early onset of dementia or Alzheimer's for those who have had multiple concussions.

In an acute brain injury, once danger of hemorrhage and additional damage has passed, treatment of the glymphatic system can dramatically speed up recovery. The glymphatic system pumps along with the cranial motion, but to engage it fully it is necessary to compress it. A specialized Cranial/Structural technique, the Cranial/Structural Frontal/Occipital Decompression, will compress this system and then work it in a pumping motion. This will push fluid through collapsed glymphatic vessels and pump accumulations of fluid out of the brain. In addition this pressurized pumping of the glymphatic system will dramatically increase the removal of waste products and inflammation. This will help to restore the glymphatic system back to full function. Many clients report immediate relief from concussion symptoms.

Case Study: Cindy, a college basketball player, had three major concussions in three years and, six months after the third one, hadn't shown any improvement in her ability to concentrate and attend school. She was also lethargic and had constant headaches. The physicians had said it was just going to take time and there could be some permanent damage.

At Cindy's first session the Cranial/Structural Core Distortion Release was applied to release the restrictions in her cranial motion. After the cranial motion had been restored the Cranial/Structural Frontal/Occipital Decompression was applied to pump out the excess fluid and waste products and reduce inflammation in her brain. By the time the session was over Cindy was not as lethargic and was starting to show more interest in her environment. The Cranial/Structural Frontal/Occipital Decompression was applied four more times on a weekly basis with steady progress in her ability to concentrate, memory retention, and energy levels. Her headaches had also disappeared. By her fourth session Cindy was back in school and able to handle her full load. This was after six months of not being able to read or concentrate enough to go to class. Theoretically, by applying the Cranial/Structural Frontal/Occipital Decompression there would be no long term degeneration of her brain because the waste products were pumped out and the lymphatic system was restored to full function. A CAT scan also showed a clearing in the areas that had previously been inflamed and swollen.

The **lymphatic system** also responds well to compression and decompression and is also treated with the Cranial/Structural Frontal/Occipital Decompression. Consequently, there are two systems at work when treating inflammation and swelling with the Frontal/Occipital Decompression. Both dramatically help in the recovery from treatable brain injuries.

Another effect of brain injuries is leaving the client's brain susceptible to further neurological diseases and degeneration because of the damage to the lymphatic system which is the major component of the brain's immune system. Restoring the lymphatic system and lymph drainage can prevent the development of other neurological diseases such as Autism, MS, ALS and Alzheimer's.

As you can see massage therapists can make a significant long lasting therapeutic difference when treating clients who have had treatable traumatic brain injuries. What is also apparent is that this takes specialized hands on training in Cranial /Structural techniques. Hopefully this has expanded your awareness of the exciting possibilities that are available for successfully treating clients who have sustained treatable brain injuries. This is where you as a massage therapist can make a long term difference for your clients and possibly prevent the debilitating conditions of dementia and Alzheimer's as well as minimize or alleviate some of the conditions that can cause the degeneration of the brain leading to neurological conditions such as ALS, MS, Autism and the like. These techniques are not available through the medical community,

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