

Cerebrospinal Fluid Motility - Glymphatic

Monique Bilodeau-Nestmann - Founder of Essence Vitality - Member of the Natural Health Practitioners of Canada Since 2007
www.essencevitality.com - info@essencevitality.com

What is Cerebrospinal Fluid Motility? Where is Cerebrospinal Fluid? Why is Cerebrospinal Fluid important in Biodynamic Craniosacral?

Good questions!

All living things express the wonder of life with motion. There is movement with the rotation of the planets to the photosynthesis of plants to the physiology of our own human cells. Life moves. All healthy living tissues gently "breathe" with the motion of life at the deepest level of cellular function. The presence of subtle rhythms in the body was discovered and named by an osteopathic physician named Dr. William Sutherland (1873-1954). He theorized that the central nervous system was in a constant rhythmic motion essential to human health. He viewed the human body as living structure. Dysfunction or impairment in one area would compromise the entire structure. The constant rhythmic motion of the human body, the potency of healing, the living anatomy, is the synergy of motion of five basic components:

1. The inherent fluid wave within the cerebrospinal fluid that bathes the brain and spinal cord. Dr. William Sutherland described CSF as the "sap of the tree" or initial recipient of the potency of life.
2. The inherent expansion and contraction of the brain and spinal cord.
3. The motion of the meninges, the membranes that cover the brain and spinal cord.
4. The movement of the cranial bones.
5. The involuntary motion of the sacrum within the pelvis.



Biodynamic Craniosacral is an alive and moving experience.

Biodynamic Craniosacral: The subtle rhythms or motilities produced by the body are regarded as fundamental expressions of our health and vitality. The ordering matrix carried into the body within these rhythms acts as a blueprint for health which is present from the time of our early embryological development. This blueprint is the fundamental factor that maintains balance in our form and function throughout our lives. When these rhythms are expressed in fullness and balance, our blueprint for health is able to manifest and a sense of wholeness and well-being automatically follows.

The science and development continued with scientists, doctors and teachers- Drs. Rollin Becker, James Jealous and John Upledger. The craniosacral concept was further developed by Dr. Franklyn Sills into a Biodynamic model. The motilities of life formation are an expression of primary respiratory motion that is a critical factor in determining our state of health. The science continues to develop with teachings of John and Anna Chitty, RCSTs, Dr. Roger Gilchrist, Dr. Michael Kern, Christopher and Mary Louise Mueller, RCSTs, Dr. Michael Shea and other teaching teams throughout the world.

"Fluid can be seen in all of nature as the carrier of life. Without water, there is no life." Michael Kern, D.O., RCST

"We forget that the water cycle and the life cycle are one." Jacques Cousteau



Live a Healthy Lifestyle

Choose

Biodynamic Craniosacral

Definitions to Remember:

>**Arachnoid Villi** - microscopic projections in the arachnoid layer of the meninges that reabsorb cerebrospinal fluid to the venous blood system.

>**Cerebrospinal Fluid-CSF** - transparent, clear, plasma like fluid of the nervous system that is produced in the ventricles of the brain. It mediates all critical function of the nervous system. Dr. A.T. Still, the founder of osteopathy, named CSF the highest known element in the human body.

>**Choroid Plexi** - specialized blood vessels located in the ventricles of the brain that filter plasma to produce cerebrospinal fluid.

>**Craniosacral rhythm – CSR** – The rhythmic pulsation or motilities of cerebrospinal fluid in the brain and spinal cord.

>**Ventricles** – four inter-connecting cavities or spaces in the brain that are the sites of CSF production.

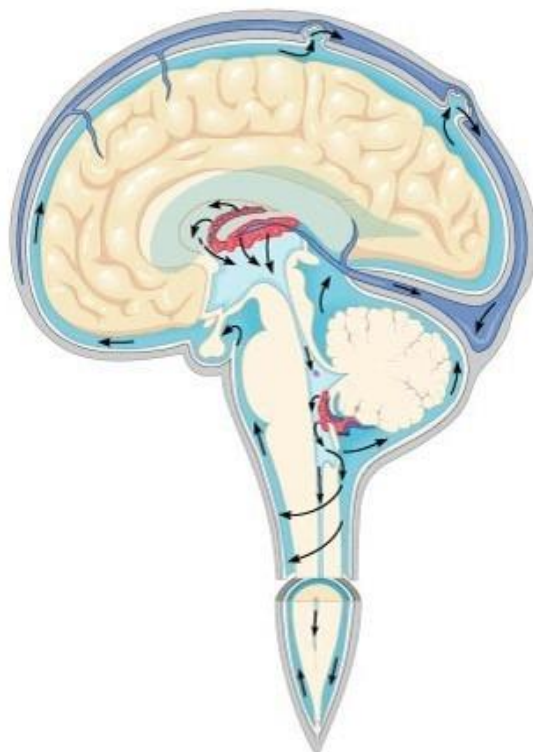
>**Glial Cells** - non-neuron cells (possibly up to 50-80%) of the central nerve system that provide support for the brain and assist in nervous system development, repair and metabolic function.

>**Astrocyte** - most abundant star shaped glial cell. Its many functions include biochemical support of endothelial cells that form the blood-brain barrier, provision of nutrients to the nervous tissue, maintenance of extracellular ion balance, and a role in the repair and scarring process of the brain and spinal cord following traumatic injuries.

Biodynamic Craniosacral and Fluid Motility

“Water is life’s mater and matrix, mother and medium. There is no life without water.”

Albert Szent-Gyorgyi, 1937 Nobel Prize



The blue space and arrows represent the cerebrospinal fluid.

CEREBROSPINAL FLUID MOTILITY

Cerebrospinal fluid (CSF), is the fluid of the brain (cerebro) and spinal cord (spinal) with the combined name of cerebrospinal fluid. CSF is the life fluid of the central nerve system. It is a clear fluid that is produced by a process of filtration and secretion from concentrated blood vessels named choroid plexi located in the four fluid filled cavities or ventricles of the brain.

Approximately five-seven ounces of CSF are contained in the nervous system at one time with approximately one ounce (30 ml) produced each hour. The continuous production and reabsorption flushes the CSF through and around the central nervous system and is reabsorbed back into the bloodstream through venous sinuses in the brain called arachnoid villi. Named by Dr. William Sutherland, the filling is known as flexion and the emptying is named extension. This motility can be measured throughout the whole body. The whole body response is due to the pumping effect of the CSF upon the motor system of the brain. A rhythmical increase and decrease in the tone of the myofascial system occurs due to fluctuating nerve signals, creating a palpable motion.

“A typical neuron makes about ten thousand connections to neighboring neurons. Given the billions of neurons, this means there are as many connections in a single cubic centimeter of brain tissue as there are stars in the Milky Way galaxy.” David Eagleman

The motility of the central nervous system is expressed as part of an integrated pattern of motion, associated with its surrounding membranes, bones and fluid. In health, all these tissues move in synchrony with each other.

The CSF produced in the ventricular system of the brain has four significant purposes:

1. Chemical Stability - The CSF maintains a consistent chemical balance with mediating critical neurotransmitter function. 25% of absorbed oxygen and 25% of nutrition from diet are in CSF. It influences cerebral blood flow and respiration due to its alkaline ph. The rhythmic motion of the CSF may serve to "milk" the pituitary gland with hormonal transport to the neuroendocrine system.

2. Protection - CSF acts as a "water bag", to adapt the brain and spinal cord to gravitational weight bearing, body movement and to absorb and dissipate impacts and traumas of life. A simple sneeze would be traumatic to the brain without this buffer!

3. Buoyancy - CSF is the same density as the brain, allowing it to "float" in neutral buoyancy, maintaining its wight and shape. The three pound human brain has the buoyancy of approximately 3-4 ounces. The 35 gram (**1.25 ounce!**) spinal cord has almost no gravitational weight bearing.

4. Cleaning-Glymphatic System - CSF cleaning was named a new system in 2012! The combined words of **Glia-lymphatic** are for brain's **glial cells (non-neurons that maintain homeostasis, form myelin, and provide support and protection for neurons in the central and peripheral nervous systems)** that clean to **lymphatic** drainage. CSF carries metabolic waste, antibodies, toxic chemicals and pathological products of disease away from the brain and spinal cord to the bloodstream to be cleansed by the lymphatic system, kidneys and liver. CSF is pure and sterile.

This Glymphatic system is protected by the meninges and fascia or connective tissue of the human body. Significant physical, emotional or chemical injuries can insult the fascia and CSF motility. Deprivation or compromise of effective CSF motion and flow can cause degrees of functional compromise. This may have significant ramifications over a lifetime process, especially with the growth and development of children.

The important objective of a Biodynamic Craniosacral session is to allow the body to self-correct or adapt the fascia or connective tissue that protects the vital CSF motion. A biodynamic craniosacral practitioner becomes the facilitator as the body's own dynamic, self-healing and self-regulating abilities allow compliance to ease. Biodynamic Craniosacral sessions are for the best of CSF motility. Experience a session and ride the tide for your optimal process of life!

Consider What You Have Learned...

“Think of what you have learned from your craniosacral sessions! You have learned that your body has an inherent healing process designed to adapt and heal. The nerve system controls and adapts that process. You have also learned that the motion of the cerebrospinal fluid is very important to the function of the nerve system. Restriction to fluid motion will lead to compromise of function. Neuroscience of today is now looking at the motion of the cerebrospinal fluid as important to brain cleaning and function. Dr. Upledger proved that with research and science in 1975. Yes! (Now) research questions the potential of increasing the activity of spinal fluid for the glymphatic cleaning of the brain. You have learned that this potential of cleaning is inherent within the structure and the function. Perhaps adaptation to normal activity may be more appropriate. I believe we will see the day in science that cerebrospinal fluid movement with glymphatic cleaning will be considered paramount to optimal growth and development of children and function and healing for each person. You know this...You are participating in an adaptive process of life...” JMG, RCST

“You must be the change you wish to see in the world.” Mahatma Gandhi

Newsletter Source Credited to:

Joanne M. Gallagher, RCST®
Life Expression Wellness Center, PA

Additional:

www.britannica.com
www.upledger.com
[Foundations in Craniosacral Biodynamics](#) by Franklyn Sills
[Biodynamic CranioSacral Therapy](#) by Michael J. Shea, PhD.
[Wisdom in the Body](#) by Michael Kern DO, RCST, MICrA, ND

The information of this newsletter is not to be interpreted as medical advice. Biodynamic Craniosacral sessions are not for the treatment of disease nor pathology.