

Basis for Application of OMST in Child Development or Brain Injury

The first brain skill that we learn is *multisensory processing*. This refers to the ability to filter, modulate, and integrate the multiple senses our brain receives from the environment so that we pay attention to what is important and ignore what isn't. This skill should be learned by about age 3. It is a skill that first develops in the *brainstem* and therefore is an unconscious skill. Babies and young children may often fuss over "nothing" sometimes because they are overwhelmed by the multiple sensory inputs bombarding them from their environment. The sensory inputs that the child's brain is trying to process are vision, sound, motion, touch, smells, and many varieties of such.

In order for a child to move to the next steps of learning (movement, balance, behavior, speech, cognition), he/she must have established efficient multisensory filtering/processing. Therefore, the brainstem is the anatomical foundation of learning that the rest of the brain relies upon. When a child fails to accomplish appropriate rate of development in sensory processing, they struggle with reaching their potential in academic achievement, behavior, attention, socializing, athleticism, emotional regulation, and much more.

Many brain-injured patients suffer damage to this multisensory area of the brain, especially if whiplash is involved. A common representation of this is disturbance of the integration of the sensory inputs of vision and vestibular (body position/motion). This results in balance difficulties, lightheadedness, and dizziness. Other resulting symptoms include light sensitivity, nausea, unstable/blurry vision, motion sensitivity, and more. Consequently, this often causes anxiousness and other emotional effects.

Delays or damage in this fundamental multisensory processing causes the higher levels of the "new" brain (neocortex) to have to put forth effort and energy into this lower-level brain function which it is not designed to perform. This results in

frustration, inattention, avoidance behavior, brain fatigue/fog, poor memory, speech difficulty, and more.

OMST (optometric multisensory training) is a therapeutic technique designed to help the brain *learn or relearn multisensory filtering* (processing). It involves simultaneous presentation of prescribed frequencies of colored light, vestibular (motion) stimulation, auditory stimulation, proprioceptive input, and gradually applied optometric vision therapy.

Parent surveys reveal a 92% effectiveness rate. Research on post-concussion patients shows that 96% report improvement within 38 days of OMST. Symptoms decrease by an average of 50%.

How does OMST do this? The therapeutic effect is spread amongst several sensory systems. This creates opportunity for the stronger systems to support the weaker systems until all reach the balanced status that is expected of the child OR that existed before the brain injury. OMST teaches/reteaches the patient the subconscious skill of multisensory filtering/processing in a safe and *controlled clinical situation*. This provides the foundation needed for a patient to feel more calm, confident and grounded in their surroundings, thereby reducing emotional disturbances. This *allows higher brain function* to do its job... think and direct actions.

