



*Neurodevelopmental Learning
Through Movement*

MOVING TO SEE: THE RELATIONSHIP BETWEEN MOVEMENT, AWARENESS AND VISION IN CHILDREN WITH NEUROLOGICAL CHALLENGES

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Summary

In typical development, visual functioning emerges through a complex, holistic process in which a child integrates various streams of sensory information including kinesthetic, proprioceptive, vestibular, visual and auditory sensations. In three talks The Moving Center will present our approach to utilizing movement, attention, intention and visual information to support developmental learning and improved visual function in children with neurological challenges. This approach, based on the Feldenkrais Method® and Anat Baniel Method® NeuroMovement®, is informed by research in neuroplasticity and a dynamic systems model of developmental learning (Thelen, 1994).

In Part One, Eytan Lerner will introduce our approach and lead participants through an experiential Neurodevelopmental Movement Lesson focusing on the connection between visual-spatial perception and the movements of the eyes, head, and trunk in turning. The lesson will make use of several strategies we use to support learning and neuroplastic change in sensorimotor functioning. Participants will be guided to move slowly, take time to rest, reduce muscular effort, explore variations in ways of coordinating elements of functional movement patterns, and bring conscious attention to the process of their movement (Buch, 2021; Clark, 2015; Eagleman, 2005; Merzenich, 1996).

This experiential lesson will provide participants with a personal and sensorial reference for two following case studies presented by Matty Wilkinson and Andrea Hennen, in which they will demonstrate how we employ these same strategies to support developmental learning and improved visual function in children with disabilities and neurological injuries.

In Part 2, Matty Wilkinson will present *David's Story: Remapping After T.B.I.*, a case study of his work with a toddler who had a severe traumatic brain injury and subsequent stroke at 2.5 months of age effecting the right side of his brain, which resulted in left-side sensory, motor and visual field deficits. Though lecture and video excerpts of his lessons with David, Matty will demonstrate a clinical application of the strategies outlined in Part 1. Special attention will be given to the connection between movement, vision, and hearing, and a cross modal approach to remapping the child's perception of himself and his environment.

In Part 3 Andrea Hennen will present *A Case Study of Theo*, a 19 month-old boy with undiagnosed developmental and neurological disabilities, who initially showed no signs of seeing and had very limited intentional movement. Through photos, videos, and lecture Andrea will recount the process of how she helped Theo begin to organize his movement and his perception of his environment, and in the process the movement of and coordination of his eyes. This case presents dynamic perspective on the relationship between the development of motor control, spatial awareness, and vision in children with disabilities. Andrea will lead the group through a short experiential lesson that illustrates how refining the coordination between the movements of the eyes, head, chest and legs can create refinements in bodily and spatial perception.

Conclusion

While many researchers and clinicians involved in *The Society for Brain Mapping and Therapeutics* congress approach brain mapping from a scientific and quantitative lens, The Moving Center's approach is inherently and deliberately subjective. We utilize specific features of interpersonal interactions to inform the subjective, intrapersonal, sensorial experience in order to inform the body awareness, kinesthetic, and visual/auditory spatial maps of children with disabilities. Despite this important difference we believe there is significant theoretical overlap with interesting clinical implications between our work and the work of researchers and clinicians approaching movement, vision, and brain mapping from a quantitative perspective.

References

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