Multi-sensory integration combined with cognitive performance as a therapeutic treatment approach in children with autism spectrum disorder (ASD).

Markus Ernst, PT, TruningPoint Medical Group, Colorado Springs, USA

Statement of the Problem: Sensory integration is one of the most utilized therapeutic interventions in ASD. Problems effectively integrating multi-sensory input can limit, amongst others, a child's ability to develop social relationships, cognitive motor skills, planning and sequencing novel tasks and attending to tasks. New technologies for testing and therapy like multi-axle rotational devices and cognitive motor training platforms give new opportunities in multi-sensory integration and cognitive performance, however, a lack of consensus exists regarding its evidence base.

Methodology & Theoretical Orientation: The results of multiple systematic reviews indicate that sensory integration intervention meets the criteria for an evidence-based practice according to the CEC Standards for Evidence-Based Practices for ASD. Case studies using high-frequent videonystagmography (VNG) and computerized posturography (CPG) for testing of peripheral sensory systems and central sensory integration, and treatment interventions with multi-axle rotational devices and motor training platforms were utilized and focused on outcome measurements with VNG and CPG.

Findings: Children in these case studies showed significant changes in social behaviors, cognitive motor performance and attending to tasks. Objective measurements through VNG and CPG reflect changes in central sensory processing.

Conclusion & Significance: Children with autism ASD will benefit from multi-sensory integration combined with cognitive performance. However, further clinical studies with these new treatment interventions (multi-axle rotational devices and cognitive motor training platforms) need to be done to prove benefits compared to conventional sensory integration therapies.

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Photograph



Markus Ernst, PT started his career as a physical therapist in Germany and moved to the United States in 2011. Mr Ernst became an expert in using videonystagmography and computerized posturography for testing peripheral sensory systems and central sensory integration in the brain stem for brain disorders and brain injuries. After spending years in research and his experience Mr. Ernst developed his own neuro rehabilitation program. His treatment program HDVR™ (high definition vestibular rehabilitation) utilizes new multi-axle rotational devices with individualized movement protocols and use of cognitive motor training platforms determined by results from testing has revolutionized therapy for brain disorders and brain injuries in the USA.

Email: markus@cbp-centers.com

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