Case
Johnny is a six-year-old boy with a diagnosis of Autism Spectrum Disorder (ASD). His teacher reports that Johnny has difficulty sitting still, demonstrated by rocking and/or falling out of his chair, running in circles on the playground and chewing on his shirts. His parents are concerned by Johnny’s inability to sleep through the night, frequent tantrums especially during transitions, spinning behaviors and difficulty maintaining friendships. In the clinic, Johnny’s parents would like to know the evidence supporting sensory integration intervention in helping Johnny to regulate his arousal levels.

In Children with Autism Spectrum Disorder, what is the effect of sensory integration intervention on arousal level?

The purpose of this CAT is to find evidence-based research supporting the effectiveness of Sensory Integration (SI) intervention on the arousal level of children with ASD.

1. Ask: Research Question
   In children with autism spectrum disorder what is the effect of sensory integration intervention on arousal level compared to standard occupational therapy practice?

2a. Acquire: Search Terms
   Patient/Client group: Children with ASD
   Intervention: Sensory Integration Intervention
   Comparison: Standard Occupational Therapy Practice
   Outcome(s): Arousal Level

2b. Acquire: Selected Articles
   Bagatell et al. (2010): Single subject design to assess the effectiveness of therapy ball chairs on in-seat behavior and social engagement in 6 boys with ASD who are in an intensive instructional (kinder/1st grade) program.
   Pfeiffer et al. (2011): Randomized Control Trial that examined the effectiveness of SI therapy on 37 children with ASD.
   May-Benson et al. (2010): A systematic review of 27 studies that examined the effectiveness of using an SI intervention approach for children with difficulties processing and integrating sensory information.

3a. Appraise: Study Quality
   Bagatell et al. (2010): Inconclusive: Small sample size, participant selection was based on diagnosis rather than sensory patterns, and the study was not able to control for environmental barriers.
   Pfeiffer et al. (2011): Suggestive: Small sample size, no homogenous sample, lack of sensitivity in some of the measurement tools (SPM and QNST-II).
   May-Benson et al. (2010): Suggestive: One of the only systematic reviews to cover an extensive amount of studies regarding SI intervention. Limitations include small sample sizes, inconsistent implementation of SI intervention techniques, and a weak study design of the systematic review.

3b. Appraise: Study Results
   These studies suggest that SI is an effective approach for children with ASD who have difficulties processing sensory information. The results imply that it can help improve sensorimotor skills, motor planning, socialization, attention, behavioral regulation, reading, fine motor skills and other individual goals. Additionally, using an SI approach can help to decrease autistic mannerisms. One sensory strategy that the studies suggest is effective for students who seek vestibular input is therapy balls used as chairs. While much of the research found supported SI therapy for children with ASD, most of the studies used a small sample size, participant selection based on diagnosis rather than sensory patterns, and inconsistent implementation of SI intervention techniques, making it difficult to generalize results. More research is needed in order to solidify findings and distinguish SI intervention’s effects from standard practice.

4. Apply: Conclusions for Practice
   For Johnny there is a minimal risk in implementing SI intervention. It may yield positive outcomes on his attention, behavioral regulation and individualized goals, but his progress should be documented to see if SI works for him. Furthermore, SI can be incorporated into current practice because of its beneficial potential and lack of adverse effects.

References

Reviewers:
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? Unclear: Further research is needed to determine if SI intervention is effective for arousal level in children with ASD.