

## **Physical Therapy in Autism Spectrum Disorders**

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The CDC estimated a 1% worldwide prevalence for autism spectrum disorders (ASD). In the United States, 1 out of 88 kids is diagnosed with ASD (according to data from a survey conducted in 2008). Autism spectrum disorders are characterized by diminished social interaction skills, stereotypic engagement in repetitive tasks, lengthy visual engagement with a target, refusal to deviate from set rituals and diminished spontaneity in expressing emotions. In addition to behavioral difficulties, reduced motor abilities are also reported.

In a recent review, Bhat, Landa and Galloway examined evidence to show that children who are at risk for ASD had deficient motor capabilities. Movements like non-uniform gait, variable stride length when walking, and underperformance in aiming tasks are evident in children who are diagnosed with ASD. Cognitive impairment is also evident in these kids. There is evidence to show that children who do not suffer from a cognitive lag but yet underperform on tasks that require physical balance and coordination of limbs may be later diagnosed as suffering from ASD.

Impaired motor coordination may also be assessed in the early years. Retrospective analyses of home videos of kids diagnosed with ASD in later years demonstrate that delayed motor skills may be judged in the first two years of childhood. Delayed development of gross motor skills like walking at the age of 24 months or more can be a sign of ASD. Likewise, delayed development of fine motor skills in the early years can also point towards the existence of ASD. In order to address the issue, early interventions with physical therapy have been recommended. Koenig, Buckley-Reen and Garg have assessed the impact of a early yoga training program in schoolkids with ASD. In their study, kids with ASD were trained in yoga in a classroom-based program (Get Ready To Learn Yoga or GRTL) on a daily basis for 16 weeks. A control group of kids with ASD was allowed to complete a normal school morning routine. These researchers report that at the end of 16 weeks, children in the GRTL yoga program showed reduced maladjustive behaviors as compared to those in the control group. Behavioral patterns were assessed by teachers with the aid of the Aberrant Behavior Checklist. These results indicate that classroom based physical therapy interventions may help to reduce behavioral deficiencies in kids suffering from ASD.

In another study, exercises from a martial arts technique called Kata were taught to children aged 5 to 16 diagnosed with ASD. Thirty children with ASD were selected and divided equally into control and intervention groups. Kids in the intervention group were trained in Kata

techniques for 56 sessions spanning 14 weeks. Stereotypic behavior was assessed prior to and post-intervention. The results showed that the intervention group showed a reduction in stereotypic behaviors. An interesting find from this study is that the effects of martial arts training persisted even after a hiatus of 30 days during which no practice sessions were conducted.

Individuals suffering from ASD learn better from demonstrative techniques than from conceptual or instructive learning methods. Therefore, group therapy sessions where the participants are asked to learn by observing the actions of a leader are more likely to succeed in children suffering from ASD. It may be useful to integrate group activities such as dance training, yoga, or elementary martial arts training in the curricula of early learning institutions to improve motor and behavioral functions in children with ASD.

### **References**

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