Children with autism spectrum disorders have altered postural control strategies and standing balance performance: Implications for training

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Background:
Motor control deficits in children with autism spectrum disorders (ASD) have been widely acknowledged. However, no study has specifically examined the postural control strategies in these children thus far.

Objectives:
To compare the postural control strategies and standing balance performance of children with and without ASD.

Method:
Twenty-nine children with ASD and without developmental coordination disorder (mean age ± SD = 6.8 ± 1.1 years; 25 boys and 4 girls) and 94 children with typical motor development (mean age ± SD = 6.8 ± 1.2 years; 71 boys and 23 girls) participated in the study voluntarily.

Postural control strategies and standing balance performance were evaluated with the sensory organization test (SOT) of a computerized dynamic posturography machine.

Results:
Results revealed that the ASD group had significantly lower SOT condition 4 ($p = 0.003$) and condition 6 ($p = 0.007$) strategy scores and SOT composite equilibrium score ($p = 0.007$) than the control group, by 4.0%, 5.2% and 11.1%, respectively.

Conclusion:
Children with ASD over relied on hip strategy to maintain postural stability in sensory challenging environments. Their overall standing balance performance was inferior to their typically-developing peers.

Therefore, postural control training should be factored into rehabilitation treatments or school physical education programmes for children with ASD.

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Key references: