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An Analysis of the Sensory and Motor Contributions to Postural Control: An Occupational Therapy Pediatric Case Report

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OBJECTIVE: Understanding the primary causative factors underlying a problem is essential to Occupational Therapy interventions. Using computerized posturography and sensory based motor protocols this case discussion presents a child, J.P., with sensory processing problems that impact the child's occupations and participation in everyday skills. J.P.'s problems are discussed from a sensory processing and integration framework, as well as, from a motor and musculoskeletal framework that focuses on his classification as a child with Developmental Coordination Disorder.

METHOD: A retrospective chart analysis of J.P.'s assessment data and ongoing intervention is presented over a one year period.

RESULTS: Upon, initial evaluation using sensory and visual perceptual tests, J.P.'s evaluation results indicated that he had visual perceptual and motor coordination deficits, treated by sensory challenges that required adaptive behaviors. The second evaluation determined J.P.'s lack of motor proficiency by using assessments of motor planning and posture, including Computerized Dynamic Posturography (CDP). The CDP revealed that J.P. used immature adaptive strategies to maintain postural control. There were no indicators that JP had problems with sensory contributions to motor problems.

CONCLUSION: This case demonstrates the significance of understanding the multiple determinants of postural control in order to plan interventions accordingly. In the case of JP the primary indicators of his balance problems were motor delays in regards to time needed to regain balance and immature balance strategies. Future research needs to consider the multiple determinants of balance, as well as, consider how to best intervene given the multiple determinants of balance on postural control.

KEY WORDS: Developmental Coordination Disorder, postural control, motor control, motor skills, motor coordination, Computerized Dynamic Posturography, Sensory Organization Test