

# Standing Balance in Children with Developmental Coordination Disorder: A Meta-analysis

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**Background and Purpose:** The purposes of the study were to examine the standing balance and the role of visual information for maintaining standing balance in children with developmental coordination disorder (DCD) based on a method of meta-analysis. **Methods:** An extensive literature search with the key words of DCD, clumsy children, development dyspraxia, minimal brain dysfunction, and physical awkward was undergone on a number of electronic databases including Medline, PsycInfo, PubMed, and ProQuest Digital Dissertations (PQDD). To be included in this meta-analysis, a study needed to: (1) be a comparison study with a group of participants with DCD and a control group; (2) include quantitative measures of balance performance; (3) provide sufficient information to be able to calculate effect size. A correlation coefficient  $r$ -indicator was used to represent the effect size of the difference in standing balance between children with and without DCD. **Results:** Literature search resulted in nine studies. The effect size  $r$  of static balance and dynamic balance was 0.32 and 0.38, respectively. The effect size  $r$  of balance performance with visual input and without visual input were 0.30 and 0.35, resulting in the effect size of visual input,  $r = 0.05$ . **Conclusion:** The results indicate that the balance performance of children with DCD was poorer than that of children without DCD and the effect size was moderate. The effect of visual input on standing balance is not different in children with DCD from children without DCD. Future studies are suggested to investigate the role of other sensory inputs or the function of sensory organization for maintaining standing balance in children with DCD. (FJPT 2006;31(1):1-7)

**Key Words:** Developmental coordination disorder, Standing balance, Movement ABC, Clumsiness, Visual information

According to the 4th edition of the diagnostic statistic manual of mental disorders,<sup>1</sup> developmental coordination disorder (DCD) refers to a developmental disorder characterized with a significantly lower motor ability than expectation with

chronological age and intellectual ability. Children with DCD may present motor difficulties in one or more of the following aspects: 1) fine motor skills, such as drawing or handwriting, 2) gross motor skills, such as running, jumping or the stairs

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