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Occupational Therapy  
Speech Therapy

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## Developmental Coordination Disorder Disorder or One End of the Normal Spectrum?



Bonnie Hacker, OT  
Founder / Director

Although evidence indicates that developmental coordination disorder (DCD) is an actual disorder, in a 2009 newsletter, Dr. Raghu Lingam states that some believe DCD to be nothing more than one end of the normal spectrum of motor coordination.<sup>1</sup> Developmental coordination disorder describes a condition wherein children struggle with motor coordination difficulties that interfere with academic achievement or activities of daily living (in the absence of IQ deficits or other medical conditions that affect coordination).<sup>2</sup> In general, children who score in the 15<sup>th</sup> percentile on a coordination screening questionnaire can be considered at risk of motor problems. For an official diagnosis, the Leeds Consensus Statement (2006) states that a child must be below the 5<sup>th</sup> percentile on an individually administered coordination test and have significant functional impairment in activities of daily living or academic achievement. Teachers can expect that, on average, one child in each class of 30 would meet the criteria for developmental coordination disorder.



Developmental Coordination Disorder affects academics and socialization, and it persists into adolescence and adulthood.

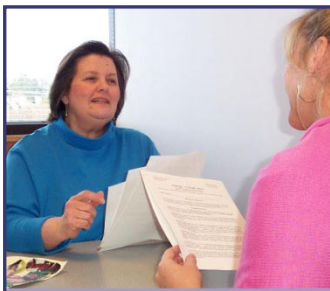
As Dr. Lingam points out, DCD is an officially defined, long-recognized disorder that should be taken seriously. The well-documented, associated difficulties support the recognition of DCD as a disorder rather than a grade of normal. DCD shows strong correlation with difficulties with attention (including ADD/ADHD), social interaction, and language. Known risk factors include lower gestational age and low birth weight - with possible genetic implications.<sup>3</sup> **DCD persists into adulthood and correlates with higher rates of psychosocial morbidity, school failure, anxiety, depression, obesity, criminal offenses, and substance abuse.**<sup>4,5</sup> Even in preschool years, monitoring motor skill milestones can identify DCD.

### By Three Years

- Climbs well
- Walks up and down stairs, alternating feet
- Kicks ball
- Runs easily
- Pedals a tricycle
- Bends over easily without falling
- Builds a tower of more than eight blocks
- Holds a pencil in writing position
- Draws a circle and a cross

### By Four Years

- Hops and stands on one foot up to five seconds
- Gallops
- Throws balls over and under handed
- Catches a bounced ball most of the time
- Climbs readily on playground equipment
- Draws squares
- Draws a person with four to six body parts
- Uses scissors to cut out simple shapes



Bonnie Hacker, OT brings nearly three decades of experience in pediatric therapy.

To date, pediatric therapy stands as the main treatment with documented success in DCD.<sup>6-9</sup> Sensory integration therapy and cognitive/problem solving approaches can create sustainable gains in motor development that generalize into everyday activity improvements.<sup>10-14</sup> Occupational therapy can serve to improve targeted motor skills, educate parents, teach coping and training techniques, and address issues of self-esteem. Emerge - A Child's Place offers expert pediatric occupational and speech therapy for children struggling with delayed coordination disorder, dyspraxia, ADHD, and related disorders.

**Please tell parents about Emmerge - A Child's Place  
Believing in a Child's Potential to Flourish**

## References

1. Lingam R, Edin C, Missiuna C, et al. Developmental coordination disorder: a physician's guide to assessment and diagnosis. *Pediatric Development and Behavior Online Newsletter* (www.dbpeds.org). Fall 2009.
2. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders 4<sup>th</sup> Edition*. American Psychiatric Association. 2000.
3. Lingam R, Hunt L, Golding J, et al. Prevalence of developmental coordination disorder using the SDMV at 7 years of age: a UK population-based study. *Pediatrics*. April 2009; 123 (4): e693-700.
4. Rasmussen P, Gillberg C. Natural outcome of ADHD with developmental coordination disorder? Unraveling the enigma. *Arch Dis Child*. 2007 Jun; 92(6): 534-9.
5. Rasmussen P, Gillberg C. Natural outcome of ADHD with developmental coordination disorder at age 22 years: a controlled, longitudinal, community-based study. *J Am Acad Child Adolesc Psychiatry*. 2000; 39: 1424-1431.
6. Hamilton S. Evaluation of Clumsiness in Children. *Am Fam Phys* 2002, 66(8): 1435-40.
7. Barnhart R, Davenport M, Epps S, et al. Developmental Coordination Disorder. *Phys Ther*. August 2003; 83 (8): 722-731.
8. Mandich AD, Polatajko HJ, Macnab JJ, et al. Treatment of children with Developmental Coordination Disorder: what is the evidence? *Phys Occup Ther Pdiatr* 2001; 20: 51-68.
9. Mandich A, Polatajko H, Macnab J, et al. Treatment of children with developmental coordination disorder: what is the evidence? *Physical and Occupational Therapy in Pediatrics*. 2001; 20: 51-68.
10. Shoemaker M, Hijlkema M, Kalverboer A. Physiotherapy for clumsy children: an evaluation study. *Dev Med Child Neurol*. 1994; 36: 143-155.
11. Sigmundsson H, Pedersen AV, Whiting HT, et al. We can cure your child's clumsiness! A review of intervention methods. *Scand J Rehabil Med* 1998; 30: 101-6.
12. Humphries T, Wright M, Snider L, et al. Comparison of the effectiveness of sensory integrative therapy and perceptual-motor training in treating children with learning disabilities. *J Dev Behav Pdiatr* 1992; 13: 31-40.
13. Wilson P, Thomas P, Maruff P. Motor imagery training ameliorates motor clumsiness in children. *J Child Neurol*. 2002; 17: 491-498.
14. Miller L, Polatajko H, Missiuna C, et al. A pilot trial of a cognitive treatment for children with developmental coordination disorder. *Hum Mov Sci*. 2001; 20 (1-2): 183-210.