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Recognizing and Referring Children with Developmental Coordination Disorder

Role of the Physical Therapist

Physical therapists assess young children with motor difficulties and/or delays by observing movement skills and asking critical key questions about their motor abilities and development. They do so in order to differentiate between patterns of motor behaviour that are characteristic of different conditions, a differentiation that guides the therapist in selecting a course of intervention.

Recently, increased attention is being given to the motor difficulties of children who used to be labeled “clumsy” or “physically awkward” but who would now be recognized as having Developmental Coordination Disorder (DCD: APA, 2000). In the past, these children received little attention from physical therapists because many believed that they would overcome their difficulties with time. It is now being realized that their motor in-coordination significantly impacts their physical, social and emotional well-being.

It is important for physical therapists to learn to differentiate the motor behaviour of children with DCD from other movement disorders in order to enable early identification and appropriate intervention. Children referred in the early years with motor difficulties or delays may have disorders such as cerebral palsy, muscular dystrophy, global developmental delay or developmental coordination disorder. Some key questions may help you focus on differentiating between each of these patterns of motor behaviour.

In a young child, you might ask: Is there evidence of increased or fluctuating tone? Observed alterations in muscle tone might be suggestive of a condition such as cerebral palsy. Are the delays global rather than just a motor delay, a situation in which global developmental delay might be suspected? With a preschool or schoolaged child, questions might centre around the history of the in-coordination. Have the difficulties been present from an early age? Are the motor concerns appearing to worsen over time? Has there been a loss of previously acquired skills? If so, this might be suggestive of a condition like muscular dystrophy.

If a child does not show the above signs but demonstrates uncoordinated movements and motor abilities below those expected for their age, they may have Developmental Coordination Disorder (DCD). This paper will help you recognize children at risk for DCD and recognize the need to intervene and to refer the child to other service providers for further evaluation.

Recognizing Children with Developmental Coordination Disorder (DCD)

Described by those around them as being clumsy, children presenting with the characteristics of DCD are often referred to as “motor delayed.” You might hear or observe that these children have difficulty with *skipping, hopping, jumping, and balancing*. *Handwriting, printing, copying, cutting* and other fine motor tasks also present challenges. Children with DCD usually also have difficulty with *zippers, snaps, buttons, tying shoelaces, throwing and catching balls, learning to ride a bicycle*. *Organizational skills* might be less well developed than their peers. *Motor skills require effort* so children with DCD are often slow to complete tasks at school and may appear inattentive. Children with DCD usually begin to withdraw from and avoid motor and sports activities at an early age. They often seem verbally advanced but immature socially and might have behavioural or emotional problems.

Definition:

Developmental Coordination Disorder is a “marked impairment in the development of motor coordination... only if this impairment significantly interferes with academic achievement or activities of daily living.” Developmental Coordination Disorder may exist in isolation OR may co-occur with other conditions such as learning disabilities or attention deficit disorder.

Diagnostic Criteria:

- | | |
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| <p>A) Performance in daily activities that require motor coordination is substantially below that expected, given the person’s chronological age and measured intelligence. This may be manifested by marked delays in achieving motor milestones (e.g., walking, crawling, sitting), dropping things, “clumsiness”, poor performance in sports, or poor handwriting.</p> | <p>C) The disturbance is not due to a general medical condition (e.g., cerebral palsy, hemiplegia, or muscular dystrophy) and does not meet criteria for Pervasive Developmental Disorder.</p> |
| <p>B) The disturbance in Criterion A significantly interferes with academic achievement or activities of daily living.</p> | <p>D) If mental retardation is present, motor difficulties are in excess of those usually associated with it.</p> |

Note: Criteria C and D require the involvement of a family practitioner or developmental pediatrician to rule out other explanations for the clumsiness. In the province of Ontario, only a medical doctor or a psychologist is permitted to make this diagnosis.

(APA Diagnostic and Statistical Manual, 2000; pp. 56-58)

Prevalence: 5-6% of the school-aged population, more commonly identified in boys

For more information on this topic:

Missiuna, C., Rivard, L. & Bartlett, D. (2003). Early identification and risk management of children with developmental coordination disorder. *Pediatric Physical Therapy*, 15, 32-38.

Characteristic Features of Children with Developmental Coordination Disorder:

- Clumsiness and/or incoordination
- Handwriting / printing / copying difficulties
- Difficulty finishing academic tasks on time
- Requires extra effort and attention when tasks have a motor component
- Difficulty with activities of daily living (e.g., dressing, feeding, grooming)
- Difficulty with sports and on the playground (last to “get picked” for teams)
- Difficulty learning new motor skills
- Difficulty with, or reduced interest in, physical activities

If you suspect that a child is demonstrating the characteristics of DCD, you might want to ask parents about other developmental concerns (fine motor, self-care, leisure). It will be important to inquire whether or not there are difficulties at home or at school. Is your child having trouble with buttons, using eating utensils or tying shoelaces? Are fine motor activities such as printing and cutting difficult for your child? Does your child have to exert a lot of effort to complete motor tasks? Does your child participate in organized sports or other physical activity?

A child with DCD is usually seen by a physical therapist due to low tone or gross motor concerns: you will want to conduct further assessment and might provide intervention for these difficulties. It is probable, however, that a child with DCD will also experience delays in fine motor and/or self-care skill acquisition that may not have been identified. If your observations and parental report are consistent with the characteristics outlined above, you might consider making a referral to an occupational therapist (see page 4 for parent information).

You should also consider encouraging the family to have the child seen by their physician. It is important that a medical practitioner rule out other conditions that might explain the motor incoordination. Also, since DCD often coexists with other developmental conditions (expressive and receptive language difficulties, attention deficit disorder), the primary care physician should be investigating these further and making appropriate referrals to other service providers.

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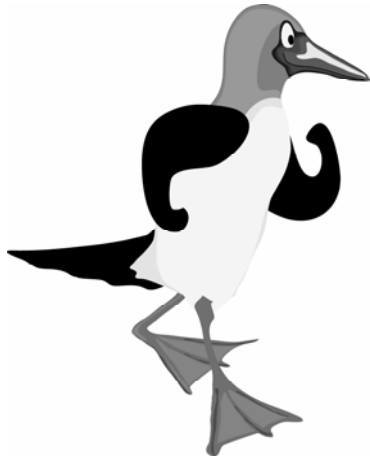
Cheryl Missiuna, PhD, OTReg(Ont)
Associate Professor and Investigator
missiuna@mcmaster.ca

Lisa Rivard, B.Sc., M.Sc., PT
Project Coordinator
lrivard@mcmaster.ca

**School of Rehabilitation Science and *CanChild*
McMaster University, Hamilton, Ontario**



canchild@mcmaster.ca
(905) 525-9140, ext. 27850



When Your Child is Having Motor Difficulties.....

Children can have motor difficulties in the early years for a number of reasons. Some children have trouble coordinating their movements to run, skip or jump. They might experience frustration at learning to ride a tricycle or to catch a ball. Others might have difficulty managing stairs and might avoid playing on playground equipment or participating in childhood motor games.

You may have some concerns about your child's ability to participate in motor activities. Your child has now been seen by a physical therapist and his/her motor skills have been assessed. Your physical therapist thinks that there is a reason for your child to also be seen by an occupational therapist. Occupational therapists, like physical therapists work with children who have coordination problems or organizational difficulties that can impact on their ability to perform well at school, at home and on the playground. Some children who have these types of problems have developmental coordination disorder and may also benefit from working with an occupational therapist on self-care or early academic tasks.

What can an occupational therapist do?

An occupational therapist will:

- Provide a thorough assessment of your child's developmental skills
- Determine how different aspects of your child's daily life are affected
- Teach your child ways of thinking his/her way through learning new tasks
- Provide adapted equipment and materials to improve task performance
- Help you and your child to set appropriate expectations
- Modify environmental factors to maximize participation
- Guide you in your selection of leisure activities for success
- Help you, your child and others to maximize his/her strengths

How do I find an occupational therapist in my area?

Your child's physical therapist can help you find and make a referral to an occupational therapist.

It may also be a good idea for your child to be seen by your family physician. Your doctor will be able to assist the physical and occupational therapists in determining the possible reasons for your child's motor difficulties. You can find more information about developmental coordination disorder at:



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