

## **Supporting social emotional development and learning for children and youth with Developmental Coordination Disorder (DCD).**

Developmental coordination disorder (DCD) is classified as a neurodevelopmental disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM 5), published by the American Psychiatric Association. It is characterized by a marked impairment of motor coordination that affects a child's academic achievement and/or activities of daily living, significantly. It is thought to affect five to six percent of school aged children.

Early childhood is a time of motor explosion. Infants develop mobility and control starting with their big muscles, moving from the core to the smaller muscles in the arms and hands. They become able to coordinate their bodies to reach, grasp accurately and to manipulate, orientate and use objects and tools. The acquisition of motor skills contributes significantly to a child's development of self-awareness. Children begin to distinguish their likes and dislikes, they recognize their own physical achievements and they identify emotions related to physical activities. Self-awareness is a critical foundation of social-emotional development.

During infancy and early childhood, the effort and, at times, frustration of attempting to accomplish motor tasks may lead to a child's reluctance to participate in some activities. Young children with DCD may explore their environments less actively, they may avoid the kinds of motor activity that aid the acquisition of developmental milestones and they can become passive and sedentary observers.

Children with DCD are not generally diagnosed until the school years. They tend to experience difficulty on gross motor measures and generally perform poorly on measures of fine motor skills when compared to their typically developing peers. Although DCD is thought of as a motor disorder there is a

growing body of research that shows that motor difficulties have an impact on a child's social emotional development. In 2012 Zwicker, Harris and Klassen conducted a systematic review of studies that assessed domains of quality of life affected by DCD. The study used retrospective recall to consider the impact of coordination difficulties in the adolescent years. They found that DCD had a significant impact on psychological and social domains on a measure that assessed quality of life<sup>i</sup>. The adolescent years are a particularly vulnerable time for those with DCD. Parents of children with DCD often worry about their children's mental health and wellbeing in addition to having concerns about their motor skills.

Young children develop their "body map" by modelling the actions of caregivers and repeating actions over and over again. They quickly assimilate the information to make a whole picture of what they look like, how big they are, how they manoeuvre their bodies through space and the effort they need to exert to move their bodies, their limbs as well as objects.

DCD can affect the self-awareness of children. Children with DCD tend not to learn from observation alone and they are not consistent in their motor output. They often tire from the effort of coordinating their actions and since they may experience less pleasure from movement, they are likely to do less. Caregivers can help children develop a map of themselves by acting as a guide during sensory motor play. Because children with DCD do not tend to learn through observation, family members can guide their thoughts and feelings through reflective self-talk. Helping them organize incoming sensory information supports children with DCD.

Physical activity is protective for mental health and can act as a safeguard against anxiety and depression. However children with DCD show significantly less preference for recreational pursuits such as sports and other physical skill-based activities than do their peers without DCD<sup>ii</sup> They often avoid physical activities and spend significantly less time than their peers, engaged in team sports<sup>iii</sup>.

Encouraging children and youth to pursue an active lifestyle through motivating activities that strengthen feelings of competence is recommended as a preventative measure. Generally children with DCD perform more



effectively when they have identified and articulated a specific goal they would like to achieve, for example, to ride a bike, to tie shoe laces, to shoot a basketball. Families can help children set realistic goals and they can praise their efforts rather than the outcome. This reframing is an important preventative measure. Particularly as in a study by Missiuna et al. 2008, adolescent and young adults with DCD reported that they perceived parental frustration and disappointment in them when they were younger.<sup>iv</sup>

The Cognitive Orientation to Daily Occupational Performance (COOP) approach is an individualised cognitive approach that supports learning, memorising, recalling and problem solving during the phase of skill acquisition. Cognitive strategies include the use of visual cues to support motor output, the use of self-talk to guide posture and movement and the use of self-evaluation to provide feedback and feed forward. Family members can support young people with DCD by using these principles when coaching them through routines, activities of daily living and novel motor tasks.

Involvement in social-physical activities mediates between coordination difficulties and life satisfaction.<sup>v</sup> Dynamic sports that require constant adjustments, complex rotary movements and feedback such as football, hockey, and basketball can prove challenging, frustrating and tiring for young people with DCD. However, sports or recreational activities that accentuate structure, symmetrical movements, reduced crossing of the midline and spatial predictability such as swimming, skiing, skating, running and cycling are more accessible and beneficial to children with DCD.

For most people, participation in physical activities leads to greater feelings of competence and autonomy. This is certainly true of children with DCD.

Encouraging young people with DCD to participate in appropriate physical activities can enhance the quality of their lives, contribute to fitness, provide fun and lead to social contact and friendship.



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<sup>i</sup> Zwicker, J.G, Harris,S.R., Klassen, A.F. (2012) Quality of life domains affected in children with developmental coordination disorder: a systematic reviewcch\_1379 1..19J.

<sup>ii</sup> Engel-Yeger & Hanna Kasis (2010) The relationship between Developmental Co-ordination Disorders, child's perceived self-efficacy and preference to participate in daily activities

<sup>iii</sup> Cocks, N., Barton, B. & Donnelly, M. Christiansen 2000; Persisting motor control problems in 11-to 12-year-old boys previously diagnosed with deficits in attention,motor control and perception (DAMP). Developmental Medicine and Child Neurology, 42, 4-7.

Poulsen, A. A., Ziviani, J. M., Cuskelly, M. & Smith, R. (2007b) Boys with developmental coordination disorder: loneliness and team sports participation. American Journal of Occupational Therapy, 61, 451-462.

<sup>iv</sup> Missiuna, C., Moll, S., King, G., Stewart, D. & MacDonald, K. (2008) Life experiences of young adults who have coordination difficulties. Canadian Journal of Occupational Therapy, 75, 157-166

<sup>v</sup> Poulsen, Ziviani, and Cuskelly (2006) General self-concept and life satisfaction for boys with differing levels of physical coordination: the role of goal orientations and leisure participation. Hum Mov Sci. 2006 Dec;25(6):839-60. Epub 2006 Jul 21.



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