

**Developmental Coordination Disorder (DCD):
Leaflet for Educational Psychologists working
with school-aged children**



This leaflet was produced through a consensus process led by Movement Matters and involving relevant stakeholders and organisations from across the UK.

What is DCD?

Developmental Coordination Disorder (DCD), also known as Dyspraxia in the UK, is a common disorder affecting fine or gross motor coordination in children and adults. This lifelong condition is formally recognised by international organisations including the World Health Organisation. DCD is distinct from other motor disorders such as cerebral palsy and stroke and occurs across the range of intellectual abilities. Individuals may vary in how their difficulties present. These may also change over time depending on environmental demands and life experience.

An individual's coordination difficulties may affect participation and functioning of everyday life skills in education, work and employment.

Children may present with difficulties with self-care, writing, typing, riding a bike and play as well as other educational and recreational activities. In adulthood many of these difficulties will continue, and there may be difficulty in learning new skills at home, in education and work, such as driving a car and DIY.

There may be a range of co-occurring difficulties which can also have serious negative impacts on daily life. These include social and emotional difficulties as well as problems with time management, planning and personal organisation. These difficulties may also affect an adult's education or employment opportunities and experiences.

How would the condition affect the child at primary/secondary school?

The child may generally appear awkward and have difficulties with some or all of the following:

- PE and school sport – especially team games where ball skills are required
- Self-care e.g. dressing before/after PE
- Handwriting – speed and legibility, copying off the board at the same rate as other children
- Use of IT – keyboarding, mouse etc
- Using tools and equipment in the classroom, science lab and workshop e.g. scissors, rulers, saws, burners.
- Learning new motor tasks.

Some children may also experience:

- Difficulties with general organisation and planning, including completing assignments in class or at home
- Social difficulties e.g. difficulty in making and keeping friendships, working in groups
- Emotional difficulties e.g. low self-esteem, being withdrawn, anxious.

DCD may exist with other conditions (such as ADHD, Autism Spectrum Disorder, Dyslexia and Specific Language Impairment). In such cases, the child may have a complex profile and a range of difficulties.

How would the condition affect the young person in further/higher education?

Please see our separate leaflet.

When and how is DCD identified?

In the early years parents and teachers may have noticed coordination difficulties or delays in motor development compared to other children of a similar age. However, formal identification would not typically occur before 5 years of age.

A diagnosis of DCD is made when there are significant motor difficulties that are not due to a visual impairment, neurological disorder or other medical condition. The first step in making a diagnosis should involve history taking and a physical examination by a medical practitioner (GP and/or paediatrician) to

differentiate the motor behaviour of children with DCD from other motor disorders such as cerebral palsy, muscular dystrophy, global developmental delay or tumours.

Where appropriate, referral on to a relevant health or Allied Health Professional (usually an occupational and/or physiotherapist) should be made for further evaluation of the child's motor performance via standardized parent questionnaires and motor tests. A final diagnosis should be based on multiple sources of information including that from the parent, teacher, and relevant health and allied health professionals.

How should I assess a child with DCD?

The nature of an assessment will depend on its purpose. To plan an appropriate support programme it is usually helpful to have a multi-professional assessment to fully assess the range of strengths and difficulties across motor and non-motor domains.

Diagnostic assessment: A diagnostic assessment should include an individually administered, standardized test of fine and gross motor skills to confirm that there is a significant movement difficulty. Information from the parent and/or teacher should also be gathered to confirm that the movement difficulties have a negative impact on everyday life skills and/or academic achievement.

Assessment of specific motor skills: Some motor skills are particularly relevant to the classroom context and it may be useful to examine these in some depth. Handwriting is the most obvious example and is a particular area of difficulty for most children with DCD. Aspects of comfort, legibility and speed should all be considered, as well as the child's self-perception of their writing performance. Children with DCD may also struggle to learn keyboarding skills, so an assessment may be useful prior to recommending any alternative technology for recording.

Assessment of cognitive skills and general intellectual ability: Although this is not relevant to the actual diagnosis of DCD, it may help to gain a profile of the child's strengths and limitations and the impact this may have on their learning.

DCD is sometimes accompanied by visuo-spatial difficulties, an area often included in tests of cognitive skills. However, be aware that motor difficulties may impact on tests involving drawing/writing or manipulative skills, particularly in timed tasks (e.g. puzzle assembly, block design) and consider this carefully in the interpretation of test scores.

Assessment of scholastic skills: Children with DCD may struggle with scholastic skills (including reading, writing and mathematics) for a variety of reasons. This may be related directly to their motor difficulties (often specifically to handwriting) and to the co-occurrence of other developmental disorders and psychological problems. Try to estimate the contribution of motor difficulties to scholastic performance to help inform subsequent intervention planning.

Assessment of other developmental disorders and psychological problems: DCD often co-occurs with other developmental disorders (including ADHD, Language disorders and Autism Spectrum Disorder), psychiatric disorders (depression, anxiety) and other social and/or psychological problems. You should be alert to this during your own assessment of the child and ensure that information/reports from health and educational professionals are considered alongside your own assessment. Where appropriate, you should refer on for further assessment by a relevant professional.

Assessment for intervention planning: Information should be gathered from multiple sources including health and education professionals, parents, learning support assistants and the child/young person as well as from standardized tests and questionnaires.

EPs will know that it is important to be suitably qualified and trained to administer and interpret any standardised test used, this is particularly important for diagnostic assessments.

What tools should I use to examine motor behaviour*?

Current guidelines should be consulted for recommended tools and these should be selected according to the purpose of your assessment. Ensure that standardized tests are based on relevant normative data (recently published and appropriate for the UK population) and that there is evidence for good validity and reliability. The language content of the test should be considered, particularly for children who have Communication Difficulties, Hearing Impairment or EAL (English as an Additional Language). Also make sure that you are

suitably qualified and trained to carry out the assessment. European and UK guidelines published in 2012 recommend a range of tools for use in the assessment of DCD. At present, these include the following:

For the assessment of general motor competence:

Movement ABC-2 Test (Henderson, Sugden & Barnett, 2007)

Bruininks-Osteretsky Test of Motor Proficiency-2 (BOT-2; Bruininks & Bruininks, 2005)

For the assessment of everyday movement skills by the parent and/or teacher.

The DCD-Q-R (Wilson, Crawford, Green, Roberts, Aylott & Kaplan (2009)

Movement ABC-2 Checklist (Henderson, Sugden & Barnett, 2007)

For an assessment of child's self perceptions:

The Perceived Efficacy and Goal Setting System (PEGS; Missiuna, Pollock, & Law, 2004).

The Children's Self-Perceptions of Adequacy in and Predilection for Physical Activity (CSAPPA; Hay, 1992)

For the assessment of handwriting:

Detailed Assessment of Speed of Handwriting (DASH; Barnett, Henderson, Scheib & Schulz, 2007;

DASH17+; Barnett, Henderson, Scheib & Schulz, 2010)

What support can be offered for a child with DCD?

- A supportive environment where all school staff understand how DCD can affect the child's skills across the curriculum e.g. handwriting, general tool use, PE, sport, science, art & design and technology
- Adaptations made to the environment, clothing and materials, where appropriate (e.g. suitable desks, elasticated clothing, pencil grips)
- Structured teaching of specific skills (e.g. keyboarding)
- Specialist intervention from educational and/or health professionals, where appropriate
- Support, training and coaching for parents in ways of helping their child.

What principles should I consider when planning intervention?

If you work in a service setting, you should agree referral, assessment and intervention pathways with your team and other agencies.

You should work together with the child, parent(s), teacher(s) and other relevant professionals to identify appropriate goals for intervention, also drawing on information from your assessment of the child's strengths and limitations.

Intervention should focus on supporting the child's learning and encouraging him/her to participate in activities. The type, level and extent of intervention required will vary depending on the range and severity of the motor and non-motor difficulties experienced by the child with DCD. At the lowest level, minor adaptations in the home and/or school environment will be sufficient and you should provide advice about this to parents and teachers. At a higher level, a more structured learning environment may be required.

You should follow the general principles recommended in the most recent European and UK guidelines.

These include:

- Focusing on functional tasks of everyday living e.g. helping to wash paint brushes rather than meaningless hand exercises
- Using multiple and short sessions as 'little and often' is best for learning e.g. five minutes handwriting practice every day rather than one long session per week. Practice should be integrated into everyday life tasks and situations
- Setting up a variety of practice situations - e.g. different activities for fine motor skills: one handed tasks such as constructing jigsaws, picking up pegs; two-handed activities such as using scissors, handwriting, threading
- Encouraging the use of cognitive strategies such as goal setting, self monitoring, problem-solving activities e.g. encourage the child to think about what aspects of the task they need to focus on to achieve success
- Breaking down tasks into smaller units to be learned; ensure that the child knows what they are working towards and what the end goal looks like e.g. the different components in learning to bat in a game of rounders

- Using movement for other goals, moving to learn as in cooperative games for social skills – to encourage socially appropriate opportunities for movement.

You can *encourage participation* in activities by changing the context in which the child is performing. This moves the focus from limitations just within the child towards consideration of how the environmental circumstances and context can be modified such that the child can participate.

- Adjust the demands of the task realigning them to the skill level of the child e.g. talk to the teacher about differentiation in PE lessons
- Grade activities so that they gradually increase in difficulty e.g. at first the child may catch a large ball with two hands then gradually reduce the size of the ball or increase the distance
- Where support is available (e.g. from a teaching assistant), encourage progress by gradually reducing the level of support as the child becomes more confident and starts to succeed
- Give the child choice of activities, recognising that this may require a greater range than we typically see e.g. dance or martial arts may be preferable to team games
- Encourage partner work with a friend who is empathetic yet challenging
- Praise the child for effort as well as achievement
- Celebrate successes – when the child is successful attribute this to his/her hard work and effort.

Where can I go for further information?

www.movementmatters.org.uk

* Please refer to our separate leaflet for the assessment of young people in further/higher education.

References

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