

Introduction

I am going to be discussing Developmental co-ordination disorder, or DCD.

According to the **NHS (2023a)** many people in the UK use the term dyspraxia to refer to DCD, but the term dyspraxia is used less often by healthcare professionals, because the term dyspraxia can have several meanings.

I will be using the term DCD throughout this presentation.

I will start by defining what DCD is. According to **Brookes (2007)** it refers to the way that the brain works in a different and less precise way. The **University of Edinburgh (2021a)** states that everyone with DCD is different, but their fine motor and often their gross motor skills are impacted, and their ability to organise and remember information may also be impacted. **Klein et al. (2023)** states that DCD is a neurodevelopmental disorder, that is characterised by significant difficulty in learning motor skills and performing tasks. **Brookes (2007)** states that the organization of planned movement is impaired.

Children with DCD often have other conditions, such as speech and language problems, Autism, Dyslexia, or ADHD (**NHS, 2023d**) and the **University of Edinburgh (2021b)** states that children with DCD may have sensory processing differences, such as displaying sensory avoiding behaviours or sensory seeking behaviours.

According to the **University of Edinburgh (2021a)** Around 1 in 20 children has DCD. **Jurus et al. (2011)** state that approximately 6% of children aged 5-11 years have DCD.

According to **Gibbs et al. (2006)** boys are four times as likely to have DCD than girls.

What causes DCD?

The exact cause of DCD is not known, but a child's likelihood of developing DCD is increased if they are born prematurely, born with a low birth weight, have a family history of DCD, or if the mother drinks alcohol or uses illegal drugs during pregnancy (**NHS, 2023a,, Gibbs et al., 2006**).

What are the signs and symptoms of DCD?

The first indication of DCD is often apparent in infancy with delays in reaching developmental milestones, such as taking longer to sit, crawl or walk.

As children get older, they may develop more noticeable physical symptoms, such as having difficulty running, handling a ball, or writing (**NHS, 2023b**).

This is when DCD may first be suspected. Children may be described as 'clumsy' or 'awkward' (**Gibbs et al., 2006,, NHS, 2023b**).

DCD can negatively affect a child's social and emotional development (**Blank et al., 2019,, Farmer et al., 2017,, Klein et al., 2023**). It is essential for practitioners and parents to avoid terms that may cause a child to feel negatively about themselves. Children may also have difficulties beyond motor skill difficulties, such as speaking, staying focussed, following instructions, sitting still, or completing tasks (**University of Edinburgh, 2021a**).

Diagnosis of DCD

It is essential that DCD is diagnosed promptly to enable support to be provided as soon as possible. According to **Gibbs et al. (2006)** early intervention is more likely to improve the coordination and motor skills of children with DCD, and this improvement is more likely to be sustained.

Early help may prevent children from falling further behind their peers, thus having a positive impact on their self-esteem (**Gibbs et al., 2006**).

If a child displays signs of DCD it is essential for practitioners to discuss this with their parents and the setting's SENDCO and to seek parental consent to make a referral. Practitioners working with children must be mindful of the relevant legislation that they must adhere to, such as **The SEND Code of Practice (2015)**. This legislation states that professionals must consider the views of children and their parents, and early identification of needs and early intervention improve outcomes for children. Practitioners should also be aware that children with SEND may be more vulnerable to abuse, and less likely to report abuse (**NSPCC, 2022**).

The SEND code of Practice (2015) states that providers are required to have arrangements in place to identify and support children with SEND.

Practitioners must complete the Statutory Progress Check at age two, and highlight to parents any concerns about a child's progress. Reception teachers must also complete the Early Years Foundation Stage Profile to assess a child's level of development against the Early Learning Goals, and share this with parents and Year 1 teachers to plan for the child's future learning (**Early Years Statutory Framework, 2025**).

When a referral is made, the child will be seen by a specialist paediatrician, who will examine the child's medical history, particularly their birth and the mother's pregnancy, and consider if the child's mental ability is within typical range for their age, to discount other potential conditions. A paediatric physiotherapist will then assess the child's physical capabilities through a 'norm-referenced assessment of their motor skills'. The assessment often used is called the 'Movement ABC' (**NHS 2023c**).

According to **NHS Wales (2025)**, the Movement Assessment Battery for Children requires a child to perform a series of motor tasks, which either test manual dexterity, aiming and catching, or balance. This generates a score, that will indicate the level of motor difficulty that the child faces.

If the child's motor skills are significantly below the level expected for their age, and this significantly affects their ability to carry out day-day activities, a diagnosis of DCD will be made (**NHS, 2023c**).

Barriers faced by children with DCD

Children with DCD can face many potential barriers to their learning and development. It is vital that these barriers are recognised, so that practitioners, parents and other professionals involved with the child can mitigate for the barriers and ensure that the child is enabled to achieve the best possible outcomes as they are entitled to do so (**SEND code of Practice , 2015**). The **UNCRC Article 23** makes clear the rights of children with a Special Educational Need or Disability.

A significant barrier is with the recognition and diagnosis of DCD.

DCD is often referred to as dyspraxia, leading to some confusion about the condition. Also, diagnosis of DCD can be problematic. As with identifying any special educational need, the role of parents and/or practitioners is crucial. Adults must have the experience and knowledge of child development to recognise that a child is not displaying typical development for their age, and be aware of DCD, in order for this to be investigated.

Once DCD is suspected, parents may be reluctant to consent to a referral for specialist help because of a lack of understanding or the potential stigma of having a child with SEND.

According to **Licari et al. (2021)** children with DCD often face an extensive wait for a diagnosis and for therapy. **Klein et al. (2023)** agrees that parents can struggle to access support.

Once support is sought, another potential barrier is that although the Movement ABC is the most common assessment used by the NHS, **Crawford et al. (2001)** discuss how there are several different tests that professionals may use to identify DCD in children, and that there is not a single agreed test. This means that DCD may not be diagnosed consistently.

Another difficulty with the process of diagnosis is that a definite diagnosis of DCD is not usually possible before a child is aged 5 (**NHS, 2023c**).

If a child with DCD has not been diagnosed with DCD, then they may not be receiving the support that they need. According to the **NHS (2023b)** children with DCD may have difficulties with poor attention, struggle with organisational skills and have difficulty following instructions. Children may be wrongly assumed to have other conditions or labelled negatively, which may affect their mental health and well-being. Research by Jarus et al. (2011) found that children with DCD tended to choose activities that were quieter and more socially isolated. This could be because they felt rejected by others or because they segregated themselves because of feelings of inadequacy or sensory processing differences. **Brown (2021)** discusses the effect of the words used to describe students, and concludes that professionals should refer to the child first, before their disability.

Physical barriers may also affect a child with DCD.

Gibbs et al. (2006) state that children with DCD can have difficulty in all aspects of daily living.

Children may find it hard to feed themselves, get dressed independently, manage their own personal care, and playground activities can be tricky, such as having difficulty with throwing, catching or kicking a ball. As well as jumping, climbing, or even running (**NHS, 2023b**).

Children with DCD can also find academic life more challenging. Holding a pencil, forming letters and numbers, cutting with scissors, painting, removing and replacing lids from pens and glue sticks, and copying from the board, can all pose a challenge for a child with DCD, who has motor skills difficulties.

Continually finding tasks more difficult than their peers, and producing drawings or writing that is less precise and looks immature in comparison to their peers can have a detrimental effect on a child's self esteem. It is important that practitioners implement strategies to support children with DCD.

Strategies to support children with DCD

Engelsman and Verbecque (2021) state that "the ultimate goal in intervention in children with DCD is to lessen the impact of the disorder on well-being and daily functioning."

Strategies to support children with DCD include:

- **The task -oriented approach**, where specific activities that cause difficulty are identified and strategies are then implemented to help.
- **The body-function or process-oriented approach**, where activities that are aimed at improving general motor skills are undertaken.
- **Alternative therapies**, such as supplements of fatty acids, vitamin E, or methylphenidate.

According to the findings of **Smits-Engelsman et al. (2012)**, there is strong evidence to recommend the task-oriented approach, with little evidence to support the process-oriented approach or alternative therapies, so I will be exploring the potential benefits of the task-oriented approach. This approach is backed up by **NHS Guidance (NHS, 2023d)**, although **Engelsman and Verbecque (2021)** also agree, they go on to argue the need for high quality intervention trials and evaluation of the long-term effects of activity-oriented interventions. The need for further research is echoed by **Nikechi et al. (2016)** and **Shoemaker and Smits-Engelsman (2015)** who also agree that the task-oriented approach is preferable.

What does this actually mean in practise?

An example may be that a child has difficulty with a particular movement or action. The practitioner should try to simplify the action or break down the movement into segments, to practice each part individually, with the practitioner offering guidance, support and encouragement. Once the child has mastered each part, the sequence can gradually be brought together.

Adapting tasks to a child's skill level will lead to positive engagement (Engelsman and Verbecque, 2021).

A practitioner could also modify equipment, for example; offering a marker to write with, that requires the child to apply less pressure than a pencil, or a pencil grip to help the child to grip the pencil in a more effective way.

Adapting activities, such as making words with magnets rather than having to write them if this is difficult, or allowing children to use technology to record their work can enable participation.

Keyboard skills can be important, particularly if the child will use technology for exams later on.

Conclusion

Early recognition, diagnosis and intervention is essential for children with DCD to receive the support that they need and are entitled to. Inclusive practitioners should recognise each child as unique (EYFS Statutory Framework, 2025) and enable them to achieve the best possible outcomes (SEND Code of Practice, 2015).

DCD can be difficult to recognise and the process of diagnosis can be tenuous, but with the right support, children with DCD can be the very best that they can be.

Share poem by Katharine Jones, age 9, who has DCD.

Thank you for listening, does anyone have any questions?

Reference List**References**

- Blank R., Barnett A. L., Cairney J., Green D., Kirby A., Polatajko H., Rosenblum S., Smits-Engelsman B., Sugden D., Wilson P., Vinçon S. (2019). International clinical practice recommendations on the definition, diagnosis, assessment, intervention, and psychosocial aspects of developmental coordination disorder. *Developmental Medicine & Child Neurology*, 61(3), 242–285. Available at: <https://doi.org/10.1111/dmcn.14132> (Accessed: 5 May 2025).
- Brookes, G. (2007) *Dyspraxia*. 2nd ed. London ; Continuum.
- Brown, L. (2021) Identity-First Language. Available at: <https://autisticadvocacy.org/about-asan/identity-first-language/> (Accessed: 6 May 2025).
- Crawford, S.G., Wilson, B.N. Dewey, D. (2001) 'Identifying Developmental Coordination Disorder: Consistency Between Tests', *Physical & Occupational Therapy in Pediatrics*, 20(2-3), pp. 29-50. Doi: 10.1080/J006v20n02_03. (Accessed: 5 May 2025).
- Department for Education (2015) *Special educational needs and disability code of practice: 0 to 25 years*. Available at: https://assets.publishing.service.gov.uk/media/5a7dcb85ed915d2ac884d995/SEND_Code_of_Practice_January_2015.pdf (Accessed: 14 April 2025).
- Department for Education (2024) *Early years foundation stage statutory framework*. Available at: https://assets.publishing.service.gov.uk/media/670fa42a30536cb92748328f/EYFS_statutory_framework_for_group_and_school_-_based_providers.pdf (Accessed: 31 March 2025).
- Farmer, M., Echenne, B., Drouin, R., Bentourkia, M. (2017) Insights in developmental coordination disorder. *Current Pediatric Reviews*, 13(2), 111-119. Available at: <https://doi.org/10.2174/15733963136661726113550> (Accessed: 5 May 2025).
- Gibbs, J., Appleton, J., Appleton, R. (2006) *Dyspraxia or developmental coordination disorder? Unravelling the enigma*. Available at: <https://pmc.ncbi.nlm.nih.gov/articles/PMC2066137/pdf/534.pdf> (Accessed: 5 May 2025).
- Jarus, T., Lourie-Gelberg, Y., Engel-Yeger, B., Bart, O. (2011) Participation Patterns of school-aged children with and without DCD. Available at: <https://doi.org/10.1016/j.ridd.2011.01.033> (Accessed: 5 May 2025).
- Katharine Jones (2010) *Dyspraxia, Dyslexia, Dyscalculia & Dysgraphia Support (UK)*. Available at: <https://www.facebook.com/pages/Developmental-Coordination-Disorder-Dyspraxia-Dyslexia-Support/346864778734790> (Accessed: 31 March 2025).
- Klein, E.S., Licari, M., Barbie, S., Zwicker, J.G. (2023) *Success or Failure? Are we meeting the needs of children with Developmental Coordination Disorder?* Available at: <https://journals.sagepub.com/doi/epub/10.1177/00084174231197618> (Accessed: 5 May 2025).
- Licari, M., Alvares, G.A., Bernie, C., Elliott, C., Evans, K.L., McIntyre, S., Pillar, S.V., Reynolds, J.E., Reid, S.S., Spittle, A.J., Whitehouse, A.J.O., Zwicker, J.G., Williams, J. (2021) The unmet clinical

needs of children with developmental coordination disorder. Available at: <https://www.nature.com/articles/s41390-021-01373-1> (Accessed: 10 May 2025).

NHS (2023a) *Overview Developmental Co-ordination disorder (dyspraxia) in children*. Available at: <https://www.nhs.uk/conditions/developmental-coordination-disorder-dyspraxia/> (Accessed: 28 April 2025).

NHS (2023b) *Symptoms Developmental Co-ordination disorder (dyspraxia) in children*. Available at: <https://www.nhs.uk/conditions/developmental-coordination-disorder-dyspraxia/symptoms/> (Accessed: 28 April 2025).

NHS (2023c) *Diagnosis Developmental Co-ordination disorder (dyspraxia) in children*. Available at: <https://www.nhs.uk/conditions/developmental-coordination-disorder-dyspraxia/diagnosis/> (Accessed: 28 April 2025).

NHS (2023d) *Treatment Developmental Co-ordination disorder (dyspraxia) in children*. Available at: <https://www.nhs.uk/conditions/developmental-coordination-disorder-dyspraxia/treatment/> (Accessed: 28 April 2025).

NHS Wales (2025) *Movement ABC*. Available at: <https://bcuhb.nhs.wales/services/hospital-services/occupational-therapy/childrens-occupational-therapy/assessments/movement-abc/> (Accessed: 3 May 2025).

Nkechi, O., Ossom Williamson, P., Cacola, P. (2016) *Effectiveness of interventions for children with developmental coordination disorder in physical therapy contexts: A systematic literature review and meta-analysis*. Available at: https://mavmatrix.uta.edu/cgi/viewcontent.cgi?article=1154&&context=utalibraries_publications&sei-redir=1&referer=https%253A%252F%252Fscholar.google.co.uk%252Fscholar%253Fq%253Dalternative%252Btherapies%252Bfor%252Bdcd%2526hl%253Den%2526as_sdt%253D0%2526as_vis%253D1%2526oi%253Dscholar#search=%22alternative%20therapies%20dcd%22 (Accessed: 4 May 2025).

NSPCC (2022) *Safeguarding children with special educational needs and disabilities (SEND)*. Available at: <https://learning.nspcc.org.uk/safeguarding-child-protection-schools/safeguarding-children-with-special-educational-needs-and-disabilities-send> (Accessed: 15 April 2025).

Shoemaker, M.M., Smits-Engelsman, B.C.M. (2015) *Is treating motor problems in DCD just a matter of practice and more practice?* Available at: <https://link.springer.com/content/pdf/10.1007/s40474-015-0045-7.pdf> (Accessed: 3 May 2025).

Smits-Engelsman, B.C.M., Blank, R., Van Der Kaay, A-C., Mosterd-Van Der Meijs, R., Vlugt-Van Den Brand, E., Polatajko, H.J., Wilson, P.H. (2012) *Efficacy of interventions to improve motor performance in children with developmental coordination disorder: a combined systematic review and meta-analysis*. Available at: https://d1wqtxts1xzle7.cloudfront.net/44037053/Efficacy_of_interventions_to_improve_mot20160323-11891-os6xmn-libre.pdf?1458754855=&response-content-disposition=inline%3B+filename%3DEfficacy_of_interventions_to_improve_mot.pdf&Expires=1746365137&Signature=C75GpKjouwebpQLi4QcXN98oYi39l09zQsb6dEI0nyng1cnE1ENfyIETzH0KJqUs~AVsuad-

https://pubchem.ncbi.nlm.nih.gov/compound/VBQU3dmES8XqyKSTjC8sQPkCacSa6PGE2nFcklBrWxANnrWQFdhmYkqdlI9R0hBR~Zh7EXb4vg_hBxL9zEsOrx~BYij23zDsoJeW5uLx-FpEUB6ZVMj5lq-SjPk48uK2vQYU7ApRLaodQEw4ZGHJaZMxjLVE3B-i1DfiAr9-omr~ZZh42jXX~NzhN6V8K7ukCquM3zu5kt9orXWnWZj5GipDp2C1Ra8c5rhNbHumj-jQnpwvZQILjh6fH11JvdW~7feqyaP9GfsZG6w__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA
(Accessed: 4 May 2025).

Smits-Engelsman,B., Verbecque,E. (2021) Pediatric care for children with developmental coordination disorder, can we do better? Available at:

<https://pdf.sciencedirectassets.com/314137/1-s2.0-S2319417022X00061/1-s2.0-S2319417021001086/main.pdf?X-Amz-Security->

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h=1e7cbbd024088b8d12cdfb557447d104ed7fbf7aaed22c97903659e6c61ada85&host=68042
c943591013ac2b2430a89b270f6af2c76d8dfd086a07176afe7c76c2c61&pii=S23194170210010
86&tid=s-pdf-2bbf9cb5-47dd-42b7-9acf-
af95ec2ce55f&sid=b34a584b13220646ef3b20d6dce4dc648ab8gxrbq&type=client&tsoh=d3d3
LnNjaWVuY2VkaxJlY3QuY29t&rh=d3d3LnNjaWVuY2VkaxJlY3QuY29t&ua=1d045e5d0e0853510
2&r=93af55d51cdf4eab&cc=gb (Accessed: 5 May 2025).

The University of Edinburgh (2021a) *Understanding the Strengths and Difficulties of Dyspraxia/DCD: A guide for parents*. Available at:

https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/epic_dcd_parents.pdf
(Accessed: 14 April 2025).

The University of Edinburgh (2021b) *The Epic Strategy booklet: A guide for teachers*. Available at: https://edwebcontent.ed.ac.uk/sites/default/files/atoms/files/epic_strategy_teachers.pdf (Accessed: 14 April 2025).

Unicef (1989) *The United Nations Convention on the Rights of the Child*. Available at: <https://www.unicef.org.uk/wp-content/uploads/2016/08/unicef-convention-rights-child-uncrc.pdf> (Accessed: 10 May 2025).