

# LEEDS CONSENSUS STATEMENT (2006)



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## **Development Coordination Disorder as a Specific Learning Difficulty**

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# Leeds Consensus Statement (2006)

## ESRC Seminar Series Developmental Coordination Disorder LEEDS 2004-2005

### Background

In October 1994, the London (Ontario) Consensus statement was crafted which aimed to highlight the existence of Developmental Coordination Disorder (DCD) and to provide a more detailed picture of this common disorder than was provided in (DSM-III-R, 1987/DSM-IV, 1994). Furthermore, it was proposed that the Consensus should contribute to the standardisation of published research on DCD.

Clearly, the London Consensus was an important landmark in the history of research into DCD. In the intervening time, there has been a substantial increase in awareness of the disorder, as well as in research relating to it. The time is now ripe for a further consensus statement. What follows is a summary of a series of meetings organised by Professor David Sugden, with the financial support of the UK's Economic and Social Research Council as well as of The Dyscovery Centre, Wales. In the discussions raised by contributors to this series of meetings, it was agreed that DSM-IV-TR (2000) provides a useful basis on which to form a diagnosis of DCD, although a number of clarifications and amendments were proposed.

### Diagnosis-Criteria A and B

- Developmental coordination disorder (DCD) is evident when there is a marked impairment in the performance of motor skills. The marked impairment has a significant, negative impact on activities of daily living – such as dressing, feeding, riding a bicycle – and/or on academic achievement such as through poor handwriting skills. Core aspects of the disorder include difficulties with gross and/or fine motor skills, which may be apparent in locomotion, agility, manual dexterity, complex skills (e.g. ball games) and/or balance.
- The long-term prognosis of individuals with DCD is variable; a small proportion do appear to improve but more often adolescence and adulthood are characterised by continuing motor difficulties in addition to social and educational problems, medical and psychiatric consequences. The problems experienced are severe and persistent and exist despite appropriate movement learning experience. As a consequence of these difficulties, and without adequate support and/or specific intervention within the family, school and work environments, an individual with DCD will be placed at a significant disadvantage.

- DCD is an idiopathic condition. Its onset is apparent in the early years but would not typically be diagnosed before 5 years of age. It has a varying, but significant impact throughout the lifespan. The difficulties described here as DCD are recognised across culture, race, socio-economic status and gender.

### Diagnosis-Criterion C&D and Co-occurring conditions

- The following is an interpretation of DSM-IV's Criterion C & Criterion D reiterating DCD as a 'specific and separate' disorder which may (frequently) co-occur with other developmental disorders. There was agreement that the terms minimal brain dysfunction and atypical brain development were not helpful to diagnosis.
- *Criterion 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 a Pervasive Developmental Disorder" (p58). DCD does not imply aetiology but is a symptom-based diagnosis. One difficulty with the DSM-IV criteria for diagnosing DCD is the lack of clarity surrounding Criterion C. There are many medical conditions that have a lack of motor control as one 'symptom' among others and a known condition such as cerebral palsy, hemiplegia or muscular dystrophy should exclude a diagnosis of DCD.
- We consider it important to acknowledge that overall, the evidence suggests that DCD is a unique

and separate neurodevelopmental disorder which can, and often does, co-occur with one or more other neurodevelopmental disorders. Commonly, these include attention deficit hyperactivity disorder (ADHD), autistic spectrum disorder (ASD) and developmental dyslexia. It is inappropriate to exclude the possibility of a dual diagnosis of DCD and a Pervasive Developmental Disorder, and both should be given if appropriate.

*Criterion D* concerns the exclusion of individuals with "mental retardation" (p58) when making a diagnosis of DCD. Mental retardation is defined in DSM-IV as an IQ score below 70 (in the UK the term *learning difficulties* is used rather than *mental retardation*). DSM IV-TR (2000) states that if MR is present, the motor difficulties are in excess of those usually associated with it. Children with a measured, or presumed, IQ below 70 should not be given a diagnosis of DCD, as these children are known to have a higher risk of motor difficulties.

### The Assessment of Developmental Coordination Disorder

Assessment of DCD has a variety of purposes including identification, diagnosis and planning for intervention. It is recognised that the type of assessment undertaken will influence the intervention process and goals.

### DSM-IV-TR criteria

The group agreed to accept DSM-IV-TR (2000) as the most suitable set of diagnostic criteria currently

available. However, some concerns regarding the application of the criteria are presented below:

- *Criterion 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." (DSM-IV-TR, 2000 p. 58).

We recommend the use of an individually administered and culturally appropriate, norm referenced test of general motor competence to apply Criterion A. The cut off point for Criterion A should be applied to performance at or below the 5th percentile. (Observational checklists may be used as an initial screening tool.). It is recognised that the 5th percentile is arbitrary, and can be seen as both too high and too low. For example, if the usual statistics are employed, 2 standard deviations (approximately 2.5%) is the common marker. Conversely, 15% is a figure that is often used and, although we would recommend monitoring children within this figure, it is not practical to use as a defining percentage for the condition. Thus, we would recommend 5% as being both reasonable and part of custom and practice in both clinical and research settings.

- *Criterion B*. "The disturbance in criterion A significantly interferes with academic achievement or activities of daily living." (DSM-IV-TR, 2000 p. 58).

We consider that establishing a direct link between poor motor coordination and academic achievement is complex. However, the specific skill of handwriting is usually affected, and is known to adversely affect academic achievement and should therefore be assessed.

Assessment should reflect culturally relevant developmental norms relating to activities of daily living tasks and should include consideration of self-care, play, leisure and schoolwork (including handwriting, PE and tool use) and the views of the child, parents, teachers and relevant others.

- *Criterion 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 a Pervasive Developmental Disorder."

A conventional neurological examination should be conducted to rule out major neurological conditions (e.g. definite disorders of posture, tone, reflexes).

- *Criterion D*. If mental retardation is present, the motor difficulties are in excess of those usually associated with it."

Ideally, a measure of IQ should be made to establish the general level of intellectual ability. Where this is not feasible a teacher's opinion or other relevant data such as national tests are acceptable. As noted above, children with measured or presumed IQ below 70 should not be given a diagnosis of DCD. Differential diagnosis is primarily covered by the application of Criteria C and D above.

## Intervention

### Intervention approaches should:

- Contain activities that are **functional** and are based on those that are relevant to daily living and meaningful to the child, parents, teachers and others. These should be based on accurate assessment and aim to improve the child's motor functions plus other attributes such as self esteem and confidence.
- Involve the **child's wishes** as key parts of the intervention process. This will usually include identifying functional tasks, choosing priorities, establishing targets for success and engaging in monitoring their own progress.
- Involve a **number of individuals who can contribute** – parents, teachers, health professionals, coaches and other family members – to enhance generalization and application in the context of everyday life.
- Accommodate the **contextual life of the family** taking into account family circumstances such as routines, siblings, finance, etc.
- Be **evidence-based and grounded in theories** that are applicable to understanding children with DCD. These theories should take into account the nature of the learning process in the developing child, the structure of the task and the environmental conditions that support skill acquisition.

## References

American Psychiatric Association (1987) DSM-III-R Diagnostic and Statistical Manual of Mental Disorders. Washington DC.: American Psychiatric Association.

American Psychiatric Association (1994) DSM-IV Diagnostic and Statistical manual of Mental Disorders. Fourth Edition. Washington DC.: American Psychiatric Association.

American Psychiatric Association (2000) DSM-IV-TR. Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition. Text Revision. Washington, DC.: American Psychiatric Association.

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