Developmental Coordination Disorder – Professor Amanda Kirby

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- A through differential diagnosis of other physical and mental conditions
- A comprehensive guide to assessment with short video and practical examples
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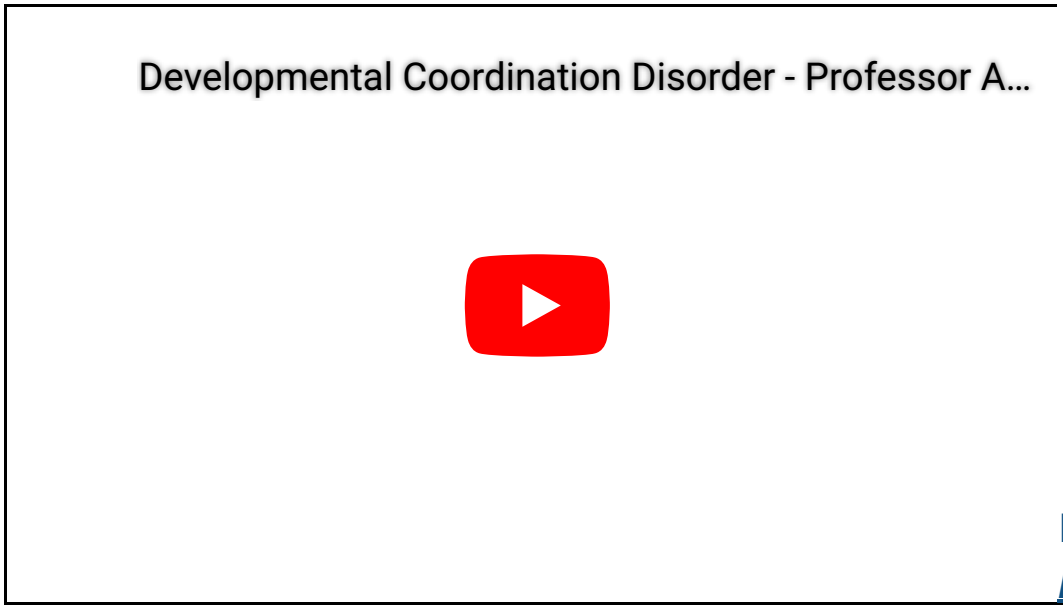

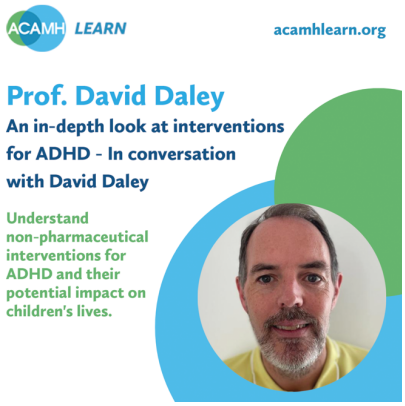

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Professor Amanda Kirby

I am unusual as I wear several hats as a medic, academic, entrepreneur, and parent/grandparent of a neurodivergent family. Passionate about improving the lives of people who are neurodivergent- in all settings. I am the CEO of a fast-expanding computer educational and work-based profiling company (www.doitprofiler.com)which has developed an innovative computerized assessment platform for schools, colleges, justice, employability and

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apprenticeship sectors. It's being used nationally and internationally to help maximize strengths and provide person-centered solutions delivered across organizations. I am an emeritus professor at the University of South Wales. I am keen to ensure that individuals in the workplace who are neurodivergent can maximise their talents while getting appropriate support. I have championed the government Disability Confident campaign and was the first company in Wales to become a Disability Confident Leader. I have delivered extensive training and consultancy to help support organizations to implement and embed change. I have lectured across the world to more than 50,000 teachers, health professionals and parents. I am also currently a trustee of the ADHD Foundation. patron of the Dyspraxia Association in New Zealand, and Medical Advisor to the Dyspraxia Foundation in the UK . In the past 15 years I have published extensively in the field of Developmental Disorders/Neurodiversity and have 8 books including 2 very practical books on 'How to succeed'-one for Further and Higher Education one for employment for neurodiverse people (including those with Dyslexia, DCD (Dyspraxia), ADHD,and ASD) to help at home, in education or in work.

Transcript

Hello, I'm going to talk to you about dyspraxia and developmental coordination disorder. My name is Professor Amanda Kirby and the reason why I'm interested this is personal as well as professional. My middle son got diagnosed with dyspraxia at three years of age and at that stage, 30 years ago, there was very little known about DCD. I went exploring and looking around about it and ended up really finding out a lot more during that time, and when he was very young,

actionable insights.

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people thought you grew out of DCD and so it was a childhood disorder. So what I'm going to do during this talk is going to take you through the slides, describe to you what dyspraxia and DCD is, and then really give you the historical perspective, but then if you're thinking about an assessment and screening, what are the key things for you to think about. And during the last 30 years, I've written lots about DCD and I'm going to give you some links and resources at the end of this as well. So let's start off, let's take one day; what doesn't require movement? If you get up this morning till you go to bed at night, if you think about it, virtually everything requires some movement, whether it's getting up and brushing your hair or cleaning your teeth, getting yourself dressed, putting your shoelaces on, if you're wearing shoelaces, having breakfast, packing your bag, going to work, everything; walking. So you can see that a movement difficulty would be quite pervasive for the child or for the adult, so I'm going to explain a little bit more about what DCD is.

First key message really is there are five C's of developmental coordination disorder. Clumsy; this was a term that was used sort of pejoratively in the 1970s and 1980s, but it gives you a feel that it's a child who's got difficulties with their coordination. Common; I'm going to give you the prevalence. Chronic; it continues into adulthood. It doesn't just grow out when you get to 16, it co-occurs, and I give you the references around that and what co-occurs with it. And consequences; that actually the impact of DCD is not just on motor development and motor functioning, but it has a wider impact for the young person or the adult.

So individuals may present in lots of different ways, and that can go from having quite mild difficulties that don't impact very much on a day to day functioning, to really

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quite severe. But what's important, it is common. In a population study done with the [inaudible 00:02:43] study, we showed that 1.8% of children had, was severe in the population and about 3% had moderate coordination difficulties. Until relatively recently we thought in most studies globally, the genders around two to one. But increasingly we're seeing with a number of other developmental disorders that maybe we've been looking through more of a male lens and looking at the types of challenges that actually males have, rather than the types of challenges that females present with and they may be different, but we still see there's more boys than there are girls.

What's interesting and confusing is the change in terminology over the last, well, 50, 60, 70 years, and in the 1940s, the term minimal brain dysfunction was used. I'm going to describe this a bit more in a moment. Then in the 1960s, we started seeing some work done calling DCD or dyspraxia, minimum cerebral palsy, it was thought to be not as severe as cerebral palsy. And sometimes it's really quite difficult to delineate a child who has DCD or who has cerebral palsy.

In the 1960s then we started saying, having more descriptive terms; perceptual motor dysfunction, visual motor difficulties. And then we started seeing this term from Illingworth, who was a pediatrician in the 1970s, the clumsy child syndrome, recognizing there were a group of children that seemed to have coordination difficulties. I found in one book in the 70s, a term called Motor Moron's, not a term that we'd use today.

Then later in the 70s, we started seeing an association with the term dyspraxia and this came from the brain injury literature around acquired apraxia and they thought this was brain injury and Developmental was born with this. And then we started using the term

developmental dyspraxia and then dyspraxia came into parlance. This has caused some confusion and that's why in international movements, we've moved much more to using the term developmental co-ordination disorder as opposed to dyspraxia, because actually not all children who have DCD have praksis or planning difficulties, and it's used in a very specific way. Some children do, but not all.

So the overarching term for children with motor difficulty is the international term that's used, the most correct one, where all the research has been done is actually DCD. So we should move as clinicians to be using the appropriate term. Otherwise it's like calling ADHD something else and having inconsistencies. And we've seen DCD in the DSM four, DSM five and the ICD 11.

In the DSM five criteria, let me go through the main criteria. A; the acquisition and execution of coordinated motor skills is substantially below that expected for the individual's chronological age and opportunity for skill, learning and use. Difficulties are manifested as clumsiness, there's that term, again. Dropping or bumping into objects, as well as slowness and inaccuracy of performance of motor skills, slow and inaccurate, catching an object, using scissors, handwriting, riding a bike or participating sports. These are examples. The motor skills in A; significantly and persistently interfere with activities of everyday living appropriate to age. That's really important.

Just because you are a bit clumsy doesn't mean that it necessarily interferes with your activities of everyday living. It's that impact which is going to be important when you're diagnosing DCD.

It impacts on academic school, productivity, pre-vocational and vocational activities, leisure and play. So

its the impact on everyday functioning that gives you the diagnosis. The onset of symptoms is in the early developmental period; it's not acquired, it is developmental. You're born with it. The motor skills deficits are not better explained by intellectual disability or visual impairment, not attributable to any neurological conditions affecting movements such as cerebral palsy. So you can't have DCD and cerebral palsy, you can't have DCD and muscular dystrophy or a degenerative disorder, and I'm going to come back to that a bit later.

In the last few years, we had a consensus statement in the UK and we decided that what we needed was a DCD descriptor, something that was sort of less magical, easier for parents to understand; and this is the one that's being used on NHS boards and we're trying to use it as consistently across the [place 00:07:20] . So I want you to see if you can use this really for consistency. Developmental co-ordination disorder, also known as dyspraxia in the UK, is a common disorder affecting movement and coordination in children, young people and adults, that's really important. Distinct from other motor disorders, it occurs across the range of intellectual abilities, it is a lifelong condition and it's been recognised by international organisations.

The persons coordination difficulties affect functioning in everyday activities, including the classroom, at work and the leisure activities. And that was really important when we put this together, that it reflected that we will see children, adolescents and adults with DCD. They don't grow out of it. Differences in how the person learns new skills at home and work and in leisure activities, and there may be difficulties, they vary in their presentation and these may change over time. And that's really important because it's dependent on the

environmental demands – so if you don't have to write, you could use a keyboard, that's change your environment. Life experience; we have some people who have done ballet since a very young age and their balance is better. But actually, if you look at the other areas, they've still got DCD, it's just they practice particular areas, and the support provided.

Although motor difficulties persist throughout life, non-motor difficulties may become more prominent as expectations go up and demands change over time. There are a range of co-occurrence non-motor deficits, which can have substantial adverse effect on work and daily life; social, emotional time management, planning and person organisation. That's really important because if you looked at the research 10 to 15 years ago, we were really focusing on motor predominantly, and in the past 15 or so years we've really recognised the impact, the non-motor elements that have an impact on day to day functioning and also the consequences of having motor and non-motor, the impact on that person's self-esteem, wellbeing, mental health. I'll come back to that.

Positively, with appropriate recognition, reasonable adjustments and support, people with DCD can have very successful lives and I think that's important as clinicians that we pass that information on. Now, just going back a little bit before we move on, this clomping, so what actually happened? We really went through a period, a stage where we thought actually we often see children who are co-occurring, we see a group of children that seem to have a pattern of soft signs, developmental soft signs, and we've tried to clump them together. Then a lot of the research was looking in silos, so we're looking at DCD and ADHD and ASD separately, and we weren't looking over the shoulders of

our researchers. And now we've come back to really saying, co-occurrence is the rule rather than the exception.

So you can see over the years we've tried in different ways. We've had minimal brain dysfunction, minor neurological dysfunction, deficits of attention, motor control and perception. You can see these are mixtures of different developmental disorders, atypical brain development, and actually, [GILBERG 00:10:32] has come back in with essence as well. So that that's another combination where we're seeing a group of children who seem to be capable in some ways but have some challenges in some areas, but they're not intellectually disabled in the sense of having a more flat profile. But each child will be different.

So we recently in the last couple of years, we've had an international consensus looking at clinical practice recommendations for DCD. This is open source, you'll be able to get access to this if you want to read more. And what was important this time that we actually looked at adults as well as children. It was the first time that we had adult guidelines as part of children, and I was part of developing the adult guidelines. I was very interested in adults from a very early stage, and this was a presentation from a poster I did back in 1999. So it takes a long time for things to be moved forward and understood because I was starting to see children and adolescents growing up and I was starting to see that their motor difficulties didn't necessarily disappear. I'm going to cover the different ages.

So what we do know from the research from [Anna Barnet 00:11:43] and others and myself, is that about 60 to 70% of individuals continue to have some but varied difficulties or challenges into adulthood. But again, it depends on environmental demands and it depends on

support. Context you're in. If you don't need to write any more, you've got a computer, then you might not have writing difficulties because you've got a way around it. Lots of research around that.

So the approach that most researchers and clinicians are taking in this field is really to take the international classification of Disability and Health, World Health Organization approach and really thinking about impairment. What's that look like? The limitations on activity and the restrictions in participation and really thinking about also environmental factors that might be having an effect on the context for that individual and personal factors that might be happening here and now as well. So who's around? Where do they live? What's available for them? What services are there? What intervention have they had? So this is really important. So this is a dynamic approach because it will change over time with that person, where they are and the context.

So what's really important is to think about what's co-occurring. Comorbidity is one term that's used, but the one that's used much more frequently these days is co-occurrence. They're simply happening together, but they may not be causally related. And I think that's really important.

So we've seen lots of research over the last few years around co-occurrence with patterns, with developmental coordination disorder. The dyscalculia or maths with dyslexia, with ADH; lots of research. I did some back in the 2008 Autism Spectrum Disorder, developmental language disorder as well and 70% of children, the DLD will have motor difficulties. I did a review exercise last year looking at the overlap with DCD and looking at the references around this and showing high levels of co-occurrence across

developmental disorders.
The light blue goes to how many papers so it's varied and so where it was clinical or population data and the [inaudible 00:13:49] for the minimum dark blue to the maximum light blue, so you can see overlap, not only just with DCD but with other developmental disorders, is the rule rather than the exception and Bonnie Kaplan, who did a lot of work in DCD in the 1990s, that was her quote, and she was really ahead of her time. The other thing is that when we start looking at developmental disorders, not just DCD but other developmental disorders, we also see an increased prevalence of anxiety disorders, depression, personality disorders, substance misuse, [inaudible 00:14:19] disorders, not only with DCD, but with the others as well, and there is some evidence of that. Less so I think with substance misuse, with DCD. But we do see the association with epilepsy and joint high [inaudible 00:14:33] syndrome, being more overweight, especially females, and obesity and sleep disorders. So there is a psychological and physical impact of having DCD which is really important to consider.
So what we're seeing is with all developmental disorders, this is dimensional, not categorical, that this view of seeing things in these very tight groups is really we're now moving over to a more neurodiversity, looking here at a neuro divergent population and that each individual will have their own pattern of strengths and challenges. So, what do we need to do? We need to start to consider the differential diagnosis of DCD if you're thinking of screening and assessing for DCD. We need to be thinking about other medical conditions, such as cerebral palsy or muscular dystrophy, or if there's substantial visual impairments as well.
We need to think about other neurodevelopmental

disorders that may be occurring or may actually be the alternative diagnosis. So, for instance, it could be ADHD that a child can't focus and attend, and so what's happening is they're not able to have a sufficient practice with their motor components of learning, and that's the major part. But usually we're seeing DCD overlapping with ADHD quite often. So we've got to think about, is it instead of or is it as well? Is there a social condition such as deprivation or cultural constraints? And what we've got to see is when we look at that DSM five, it also says with appropriate opportunities. So has a child not learnt to ride a bike because they've never had an opportunity to learn to ride a bike? Are they slower learning with a pen or with cutlery because they haven't been using cutlery or using a pen?

But what you do see then is in school, when they've had adequate time for intervention in school, adequate opportunity, those children just catch up. Acquired motor difficulties we have to rule out as well, such as traumatic brain injury, Huntington's [inaudible 00:16:37] M.S. stroke or brain tumors or [inaudible 00:16:39].

So we've really got to rule out before we can rule in. So this is really important and I suppose it is difficult to differentiate whether there's causation as well. So we've got the differential diagnosis in childhood and we've also got the differential diagnosis in adulthood. As a child, we need to think of conditions like BECs. BECs is Benign Epilepsy of Childhood with central temporal spikes, it's the most common, [inaudible 00:17:09] childhood epilepsy, and it's nocturnal epilepsy. It's also been called rolandic epilepsy. Also joint hypermobility syndrome. This can be seen – and often we see it more in females then males. But actually often children are misdiagnosed as having DCD when in fact they have

joint hypermobility syndrome. It used to be called [inaudible 00:17:29] Syndrome Type 4, or heads hypermobility [inaudible 00:17:33] syndrome, it's sometimes called as well.
We need to think of that differential diagnosis of cerebral palsy, muscular dystrophy, neurofibromatosis one. I've seen cases of children who've come through the door and been missed as having DCD when actually they have cafe au lait spots on neuro and neuromas, and actually have NF one. So we need to be able to look and see and address a child to be sure that we're not missing that. CVAs, Klinefelter's syndrome, as well as thinking about common genetic conditions like X, X, Y, Termez. We need to be thinking about those as well in our differential diagnosis, as well as foetal alcohol syndrome and Fragile X and Williams. As an adult, we need to be thinking about acquired as well, so motor conditions that actually start in adulthood. You could actually, though, of course, have DCD in childhood and then have multiple sclerosis in adulthood. Cerebral tumour, Parkinson's, genetic conditions such as Huntington's chorea, CVA [inaudible 00:18:35] . So this is really going to be important as well as [inaudible 00:18:39] type of ability syndrome, which may be missed in childhood and I've seen quite a number of adults that have been missed or misdiagnosed in younger age.
Always think about when you're thinking of seeing a young person or an adult, think about the red flags. Not usually do children or adults have pain. Most of them don't have a deterioration or loss in functioning, it's just been constant and it started in childhood. Gait disturbance, we've got to think about something else. A symmetry of tonal movement, we've got to be thinking about CVA or cerebral palsy. Visual disturbance, and you can get neuromas from MF1 in the eyes as well. And

cafè au lait spots, a history of genetic disorders such as Klinefelter's or Huntington's chorea will be really important.

Extreme prematurity, because we know we see more children with DCD who have extreme prematurity, there's an association, greater risk of DCD with extreme prematurity. And I said before a disturbance and focus of concentration, so these are red flags which are important to note. I'm particularly interested in joint hypermobility syndrome and what we sometimes see is children who have hyper mobile joints, you can see hyperextension of the elbows, you often have flat feet, bruising, stretchy skin as well, so stretchy skin as well. And we often see those children, often if they're doing right handed, they have a right hand hook because what they're trying to do is stabilize their joints and fix to get movements. They have small controlled handwriting. It's important to consider JHS.

In girls, which I'm particularly interested about those that have been missed, we think that they may have been masking their gross motor difficulties because of gender stereotypes. Girls can avoid sport. They don't need to be as good at sport so that if they have gross motor skills difficulties, they can – and that's the predominant picture – they are more likely to be missed because they can avoid it. They can do that if they've got that skill and they can avoid the motor skills. And gender stereotypes means greater expectation on girls to write neatly. So if they have predominantly fine motor difficulties, then they do get identified. But they're often thought of as dyslexic rather than having DCD. So there's a trailing awareness issue as well as about identification.

So when do we identify children with movement difficulties?

Well, late walkers, well, let's even start earlier than that. Crawlers and non-crawlers. So some children who are non-crawlers will have some DCD, but not all non-crawlers have DCD. Some late walkers have DCD, but not all late walkers have DCD. A late talker – well, we're seeing that from work from Canada. Parents also have DCD, he's a bit like me. Sometimes parents say that, good idea to ask; who's he like in the family, or she like, in the family?

At school you might be picking up those symptoms. When they arrive at school and all the other children are learning handwriting, now, the child seems to be not able to do that, to draw a picture, to play ball games, to do peg games or puzzles. Not being able to climb on a climbing frame or someone's been on a training course and spots some signs. So it's a bit like you go on a course like this and you're seeing everybody everywhere with DCD or they already have another diagnosis. So they've already been diagnosed with one, so you start to think about what else is going on. Or in some cases have the opportunity for screening happens.

But there are some key things that are important; early identification, because actually some children may not have DCD, they just may be late bloomers. They have developmental delay rather than developmental disorder, and given the opportunity and a bit of catch up, then they catch up and they are fine. We also know from tests like the movement ABC Test, which is a standardized test, is that they're very unreliable in the under fives, and we really need two points of measure. So we understand that a child might have DCD, but we're reluctant to give a diagnosis unless we've got two time points. We can see this is consistent because the standardized tests are not very reliable in the young age. So what sort of challenges do children, young people

and adults have with DCD? As we talked about, motor, non-motor and the impact and in the early days, as I said, we focus much more on motor and less on the non-motor and the impact. When we're looking at motor, we're thinking about posture, the way the child is sitting, standing, walking, planning. So being able to use equipment to be able to plan your movements appropriately. Fine motor, small movements, gross motor, big movements.

So it could be walking along a wall. You can be handwriting, cutting, using scissors, playing ball games, riding a bike. So fine motor, gross motor and balance. Those are the motor ones. Non-motor around organization, social interaction, and the impact is around bullying, anxiety, depression, weight gain, self-esteem. So you see that pattern. But what we probably see sometimes is this negative involvement cycle. I can't do throwing a ball, I don't do playing a ball. I avoid playing the ball and then I don't do any exercise and I won't put weight gain on. And then I'm avoiding socially because I don't want to go in because all the other children don't want to play with me and I can't do it, so I don't do it. And so we go round in circles.

John Cairney from Canada really muted the environmental stress hypothesis and really has been working over the last few years at looking at the different components and seeing the interplay between them, and I think this is important. There isn't; this causes that, sometimes it's quite difficult to tease apart the interactivity that you haven't mastered something. So we know the children with DCD find it harder to master motor skills. So if you're trying to at a very young age, start to climb on a climbing frame and you're finding that difficult to do, you feel hesitant and anxious, and what we see that even in the under fours,

we see higher rates of anxiety. Then you avoid it, you don't have mastery, you're not engaging with the other children, so you have less opportunity to engage because the other children are going out to play games you don't want to play. They're having social interaction, verbal interaction, they're learning peer engagement. And so this has an impact on social competence as well. You can see that all these things interact.

So what we see with the outcomes of the child is the resources, the opportunity for the child to explore their motor environment, the manner in which it's presented, so we're giving them tools and tasks they can't interact with, they're going to disengage and the environment in which the activity occurs, all of those components will affect outcomes.

Presentation in the early years with Developmental Coordination Disorder is that we sometimes see, as I said, the late walker, son didn't crawl, slower to learning to ride a bike; this is a multi-action, this is problem multitasking. You're having to balance, you're having to look, you're having to pedal, you're having to steer. And anywhere where there is this multitasking, this is much harder for the young person to learn. Then they disengage because all the other children learn to ride a bike and they can't. Difficulties dressing and feeding, doing things like using cutlery, being able to do buttons, up laces, avoiding climbing and exploring the playground, and then as a consequence there is less social interaction.

In primary school, if you're thinking about identification, the sort of difficulties if you're seeing a primary school child, is around handwriting. You see untidy open handwriting without spaces, with not consistent forms, difficulty playing ball skills, catching, throwing, kicking a

ball. Dressing, changing, use of cutlery, being a messy eater, spilling things, difficulty pouring, fine motor tasks, using pencil, scissors, rulers. So when all the other children in the class have got their penmanship certificate, these children may not get it. Lower self-esteem and confidence, not surprisingly, and harder to make and maintain friends. While the other children are playing the playground, they're not chosen to be played with. Poor organisation of work, they lose clothes, they lose the possessions, they leave things behind. So this has an impact on how others view them as well. So this is a child who is trying to do a standardized test. So what he's trying to do is hop on the mats and he's not able to do so and he should be able to do that, he should be able to hop the mats, so even at an age of 10 or 11, he's still got difficulties, or really operating more like a six, or seven year old.

When you look at children's handwriting, you might see this hook or hypermobility or hyperextensibility, difficulty with cutlery. You might see that child with really low posture slumped over the chair, finding it hard to remain upright. In secondary school we see with children handwriting at speed, we're not just doing handwriting practice, we're going fast and we need to take notes. So clarity and spacing will be hard, poor organization of their self and work. Spatial awareness of others, leaning over them, sloping if you're sitting next to somebody on the desk. So they're knocking into the other children, bumping into things, moving around the classroom is difficult for them. Playing those team games is hard. So not just playing ball games, but you're now playing football and netball and basketball and finding it hard to play those games because now you're interacting with others and your spatial awareness is poor and your ball skills are poor, and you've got to

predict where the ball's coming from and where it's going and what you're aiming for and you can see, real problem.
Weight gain, slower changing in school for shoes, shoelaces, slower to change for P.E., fine motor tasks using compasses, rulers, scissors, in science they're starting to do those tasks, which they might find much harder to do. CDT in craft design and technology would be harder. Self-esteem, confidence, going down socially, more isolated. This is probably the worst time for children wit DCD in their secondary school age, where emotionally they're younger, but maybe intellectually they're not.
They're socially more isolated and as they are children, their peer group are going up having lots of interactions. These kids are being left behind and there is a gap between the two. In adults the motor difficulties. Yep, learning to drive, that's a true motor difficulty and it's a multi-tasking. So you're trying to – it's not just the team games, ball games and activities, but learning to drive a car. So you're having to control where you're going, steering, gears, your feet working. You can see similar to like riding a bike in terms but a bit more dangerous. Handwriting, still a problem. Learning new motor skills, so you might be doing tasks like DIY tasks, you might be doing things in your jobs and learning a novel motor skill will be harder to do so, and what you start to see is avoidance tactics as well.
The non-motor, this is where we go through the – in the beginning I said that the non-motors might become more prevalent; you see this more in the adults because that's your demands on you as an adult, go up, and the support. You don't have your mum going with you to school, so the support structure, the special educational needs support, you're not taking that with you when

you go into the workplace necessarily. So you've got executive function difficulties, we've seen planning, managing money, planning ahead, emotional responses to motor problems leading to higher anxiety, high levels, much higher levels of state and trait anxiety and symptoms of depression.

So this is really important if you're thinking from psychiatric disorders is actually you might be having children, young people and adults coming through as the predominant symptoms are anxiety and depression, and needing to consider DCD as the differential diagnosis. And we see high levels of anxiety and depression in this group. And when you're thinking that it's about 5% that's about one million adults in the UK. More likely to spend leisure time alone and they have lower global self-esteem.

So the non-motot elements really have an impact on everyday functioning in adolescence and adulthood, and the impact related to poor motor functioning is reduced level of physical activity. We're seeing higher BMI and higher rates of obesity, lower endurance, flexibility and strength. You're seeing that cardiovascular, physical impact, more metabolic indices. We haven't got long, long term data to see if there's a higher risk of, say, diabetes in this group yet. We need to do that. But it's likely that we're going to see physical impacts, poor general health, as we showed you. Fatigue is a big problem and adults really complain of being – having to consciously, subconsciously, manage their motor difficulties. And so sometimes you might be having adults coming through the door with chronic fatigue syndrome and it's not being considered that DCD might be in the mix. And Anna Barnet's work on sleep, showing increased sleep problems, seeing circadian rhythm problems we're seeing with ADHD as well,

challenges with close relationships, difficulty gaining and sustaining employment and more likely to be living at home because they're needing high levels of support. So when you're diagnosing DCD, there are some key things that we need to think of. First, listening to the parental concerns, taking that history. Your history is going to be the most important thing for making a diagnosis, listening out for red flags that suggest delay or disorder, using screening tools and some activities and watching out for the signs and symptoms which are characteristic of DCD. 90% of the diagnosis is going to be history here. It's taking that history, thinking about the differential diagnosis.

I've got links. We did a training program with a Canadian group, can [inaudible 00:32:55] and we've got a British version and there is a link to this and it gives you resources as well. So the things you can do, even if you're in a clinical setting with very little in terms of standardised equipment to be able to look and think about whether this child might have DCD and that might be just having a pen and paper and a ball in your drawer.

So there are things you can look at developmentally of what the expectation you would be able to see at these different ages and I think this is really useful. So really, think about when you're taking the history, is thinking about limitations and restrictions and impairment, because that meets the DSM five criteria. So that's really important. Take the history about the contextual factors. Think about environmental factors. What are the constraints? Have they had opportunity? What are the personal factors?

Is there a family history? Are there other children? Has a parent got DCD or other developmental disorders as well?

There are screening tools for – in all the different ages, there is the Early Years movement checklist, the movement A.B.C. checklist, the Elías movement checklist is obviously the early years. Movement A.B.C. checklist and DCDQ I use in school age children and I developed the adult DCD screening tool, which is for 16 plus.

These can be used and quick and easy to use, to give you an idea and are standardised. In an assessment, you need to think about a neurological assessment to really think about that differential diagnosis so we don't miss conditions like cerebral palsy, or there's acquired, and I have seen some adults. I saw some, one adult who had a cerebella tumor, so it's important to be alert. And a child with neurofibromatosis. So consider those other co-occuring conditions and assess for these too. More than one diagnosis can be given so you can have DCD plus ADHD, plus ASD, plus dyslexia plus Tourette syndrome, and actually that's quite often the picture.

So think about the ecology. So this is from [Bronfenbrenner 00:34:53] really thinking about the ecology of that individual, the person in the context of their family, what opportunity they've had for intervention and support and identification, and really think about from a self-esteem perspective as well. What does that child or adult think about themselves? What's around in terms of identification? What services are around as well? This is the DCD module for [inaudible 00:35:20] and we have a British version, a UK version of this DCD module. It's still live and it's still available.

Movementmattersuk.org is a website where we have put up the international guidelines and we've got videos and resources that you can access. It's got links to materials and it's also got the European guidelines in full

for you as well.
We've got a number of little videos in there really discussing aspects of DCD in childhood and adulthood with interviews with various people who have worked in this field now and in the past. We've also got information and letters and information we can use for GPs and other allied health professionals if you need to seek more information. Please go to that, we are regularly updating it. And that's the end of the webinar.

Discussion

Gerwyn Henderson 30 July 2021 10:33

A wonderful explanation and insight into this often misunderstood area.

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Dan 28 December 2021 07:58

It's fascinating and helpful to read this. I believe I have DCD but have never been officially diagnosed. I'm 66 years old and first heard of the disorder a few years ago when I Googled "difficulty learning to ride a bike." DCD came up and I couldn't believe my eyes. I had a difficult time riding a tricycle when I was young, and had a very hard time learning to tie my shoes. I was very poor at sports — was uncoordinated/clumsy and had hypermobile joints. I couldn't ride a two wheel bike until I was

almost a teenager. I'm sure it had an impact on my social development. I felt extremely self-conscious. I compensated as best as I could but still have issues.
I felt very alone and alienated as a child when I was struggling with these experiences. At least now I have a framework and context for what I went through. I wish I could communicate with other adults that have been through this.

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