About Dyspraxia/DCD – Likely the Most Under-diagnosed Neurodevelopmental Condition in the DSM

Paulene H. Kamps (Ph.D)

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<u>1 CE Credit, Instructional Level: Intermediate</u> <u>1 Contact Hour (New York Board of Psychology)</u>

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Meet The Presenter

• A registered psychologist, scientist-practitioner, certified teacher & author, Dr. Kamps also has a multi-disciplinary background. It was only after completing her graduate education that she discovered her interest in the topic of DCD & learned about the many ways DCD affects human functioning. To learn more about her career highlights, visit: www.drkamps.ca





Disclosures/Conflicts of Interest

 I have no formal disclosures or conflicts of interest to disclose

 Yet, with a long-standing interest in DCD, decades of clinical efforts & my desire that colleagues learn about DCD, I have been judged as having a COI in DCD...



DEVELOPMENTAL MEDICINE & CHILD NEUROLOGY

EACD RECOMMENDATIONS



International clinical practice recommendations on the definition, diagnosis, assessment, intervention, and psychosocial aspects of developmental coordination disorder

RAINER BLANK^{1,2} | ANNA L BARNETT³ | JOHN CAIRNEY^{4,5} | DIDO GREEN⁶ | AMANDA KIRBY⁷ | HELENE POLATAJKO⁸ | SARA ROSENBLUM⁹ | BOUWIEN SMITS-ENGELSMAN¹⁰ | DAVID SUGDEN¹¹ | PETER WILSON¹² | SABINE VINCON¹

1 Clinic for Child Neurology and Social Pediatrics, Child Centre Maultrom, Maultrom, 2 Heidklorg University, Heidklorg, Germany, 3 Department of Psychology, Health & Professional Development, Odord Brookes University, Odord, UK. 4 Faculty of Kinesiology and Physical Education, University of Toronto, Toronto, ON; 5 Department of Family Medicine, McMarater University, Hamilton, ON, Canada. 6 Department of Rehabilitation, School of Phathan and Welfaes, Jörköping University, Jörköping, Sweden. 7 Dyscovery Centre, University of South Wales, Newport, UK. 8 Department of Occupational Science and Occupational Therapy, Rehabilitation Sciences Institute, University of Toronto, Toronto, ON, Canada. 9 Department of Occupational Science and Occupational Therapy, Rehabilitation Sciences Institute, University of Toronto, Toronto, ON, Canada. 9 Laboratory of Complex Human Activity and Participation, Department of Occupational Therapy, Rehabilitation Sciences Institute, University of Toronto, Toronto, ON, Canada. 9 Laboratory of Complex Human Activity and Participation, Department of Occupational Therapy, Rehabilitation Sciences Institute, University of Toronto, Toronto, ON, Canada. 9 Laboratory of Complex Human Activity and Participation, Department of Occupational Therapy, University of Haifa, Haifa, Israel. 10 Department of Health and Rehabilitation Services, University of Laboratory, University, 12 School of Special Neede, Education, University of Laboratory, UNIVERSI Laboratory, University of Laboratory, University, Juniversity of Laboratory, University, Juniversity of Laboratory, University, Juniversity, Junive

Correspondence to Sabine Vincon, Clinic for Child Neurology and Social Pediatrics, Child Centre Maulbronn, Knittlinger Steige 21, 75433 Maulbronn, Germany. E-mail: s.vincon@kize.de

A pocket version of these guidelines is available as Appendix S1 (https://onlinelibrary.wiley.com/doi/full/10.1111/dmcn.14132#support-information-section)

AUTHORS

Coordinators Rainer Blank (Germany), Sabine Vinçon (Germany)

International representatives

Mechanisms

Peter Wilson (Australia), David Sugden (UK), Jane Clark (USA), Bert Steenbergen (the Netherlands), Bouwien Smits-Engelsman (South Africa, the Netherlands), Karen Caeyenberghs (Australia)

Assessments

Rainer Blank (Germany), Sabine Vinçon (Germany), Sara Rosenblum (Israel), Reint Geuze (the Netherlands), Sheila Henderson (UK), Oskar Jenni (Switzerland), Lívia C Magalhães (Brazil), Stefania Zoia (Italy)

Interventions

Bouwien Smits-Engelsman (South Africa, the Netherlands), Helene Polatajko (Canada), Sabine Vinçon (Germany), Motohide Miyahara (New Zealand; served in the intervention group until May 2016), Peter Wilson (Australia)

Psychosocial issues Dido Green (UK), John Cairney (Canada), Paulene Kamps (Canada), Sabine Vinçon (Germany)

Adolescents and adults Anna L Barnett (UK), Amanda Kirby (UK), Hilde van Waelvelde (Belgium), Naomi Weintraub (Israel)

INTERNATIONAL SOCIETY European Academy of Childhood Disability (EACD)

Learning Objectives

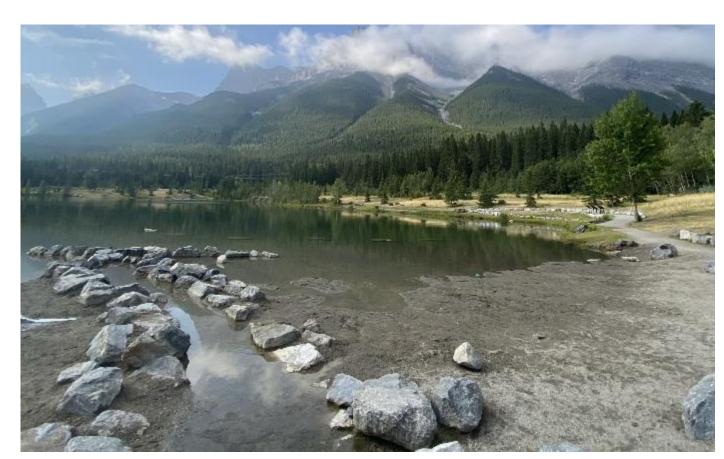
- 1. Identify ways in which dyspraxia & DCD are similar & how they differ
- 2. Explain three facts & historical trends that are associated with DCD
- 3. Demonstrate how licensed health service providers can be on the look-out for DCD



- Ever grateful to my Creator God, I live, worship, work & play in Alberta's
- Treaty 7 land with our
- Siksika/Blackfoot
- Kainai/Blood
- Piikani/Peigan
- Stoney Nakoda
- Tsuut'ina/Sarcee
- & Metis Nations







- Thank-you Catherine R. & David P. for this opportunity; grateful for attendees; first, a brief review of my background & training
- 3 formats purposefully used to address different learning styles textual, pictorial & acoustical
- Images self-generated, free via Pixabay or historical items

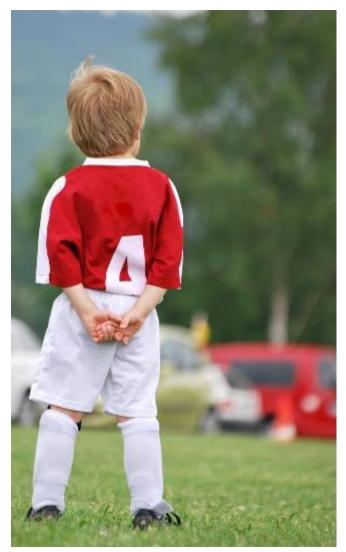




- Early childhood experiences shaped interests
- When in Grade 3

 I saw connections
 between motor &
 social skills. But
 why?







 Multidisciplinary training has offered me unique perspective in career



 Consider myself as an 'un-sports' psychologist

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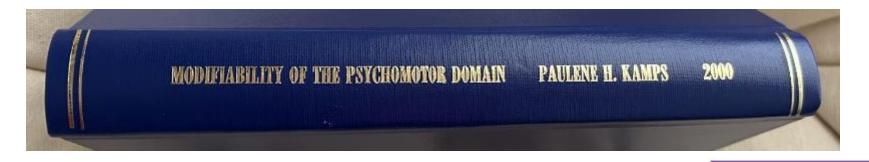
CRHSP

Canadian Register of

Health Service Psychologists



 My introduction to Benjamin Bloom, & the blend of studies in Physical Education, Education, Kinesiology, Educational Psychology & Community Rehabilitation set the stage for my work in DCD

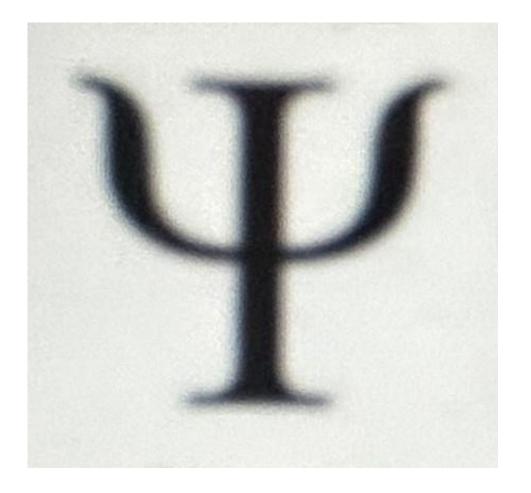




Raising Awareness of Developmental Coordination Disorder (DCD) & Learning about the Outcomes of DCD

Paulene Kamps Ph.D., R. Psych., C. Teach., DCD Advisor & Advocate

- We all learn about, observe & analyze one's behaviour & mental processes
- Collective goal is to better understand
 & support struggling individuals
- Our diagnosis directs treatment





- Because a neurodevelopmental condition, focus is primarily on children/youth
- Yet, topic of DCD also affects teens/adults
- I also advise about, advocate for, want to educate others about & desire to support anyone ISRA-DCD daily dealing with DCD...





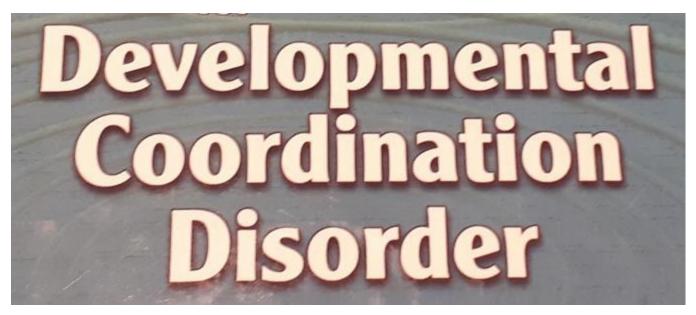


About Dyspraxia/DCD – Likely the Most Underdiagnosed Neurodevelopmental Condition in the DSM

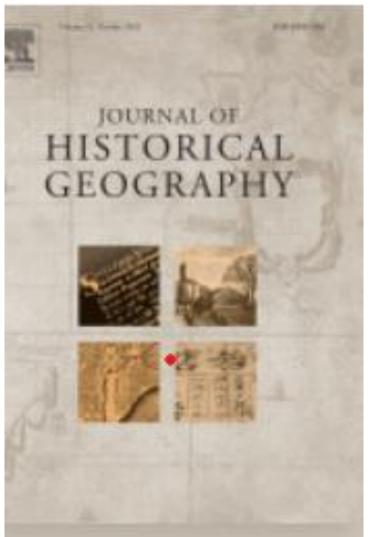
- Some facts associated with Dyspraxia/DCD
- Historical trends as per the APA, the WHO & others







- Greek physician, Galen (129–c.216 AD) referred to double left-handed persons who lacked agility, vigour & were not gymnastically composed or active
- Congenital apraxia/'clumsy' child reported by Dr. Samuel T. Orton in late 1920s





- Considering the clinical profile (high VC, low PR & PS, clumsy & with social difficulties), DCD was likely mislabeled by Dr. Byron Rourke as NVLD in the early 1980s to 2000s; OTs/PTs often used other terms
- Clumsy child syndrome
- Childhood dyspraxia
- *Sensory processing* disorder & so forth...
- Often still mis-labelled



SP RCPOS ister of Répertoire conadien psychologues offrant des services de sand Apraxia/DyspraxiaSensory Integrative DysfunctionAsperger SyndromeSpecific Language ImpairmentLanguage DisorderNonverbal Learning DisorderLearning DisabilitiesMotor Learning Disabilities

- Dyspraxia/DCD is very fascinating; blending:
- Physical-anatomical/cognitive functioning
- Issues associated with mobility/immobility
- Views of disability as per medical/social domains
- One's motions/emotions

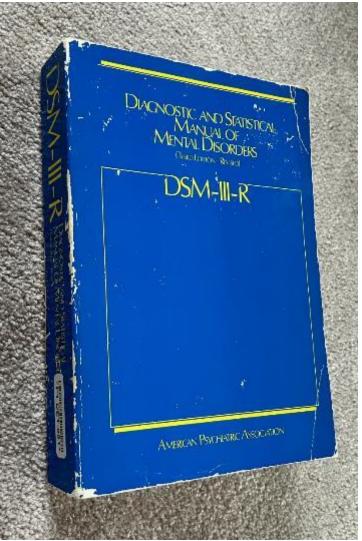








- In 1987, the APA first included DCD in DSM (pp. 48-49)
- Classified under Specific Developmental Disorders (Axis III) – 315.40
- 3 Criteria
- Prevalence rate as high as 6%
- Co-occurs with Artic, Exp/Recep Lang Disorders

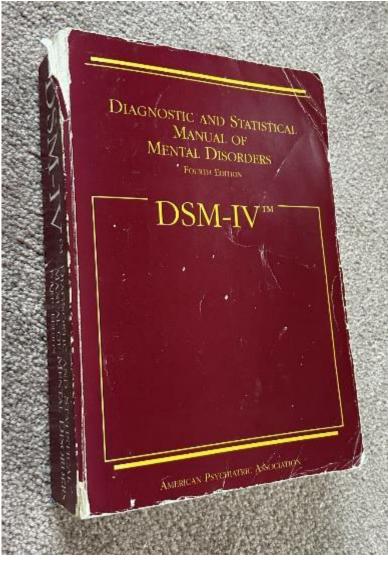




- In 1994, APA again included DCD (pg. 53-55) – 315.4
- Classified under Usually First Dx in Infancy, Childhood, or Adolescence
- 4 Criteria* Cannot co-occur with PDD
- Prevalence rate as high as 6%
- Co-occurs Phonol, Expr, or Mixed E/R

Lang & ADHD

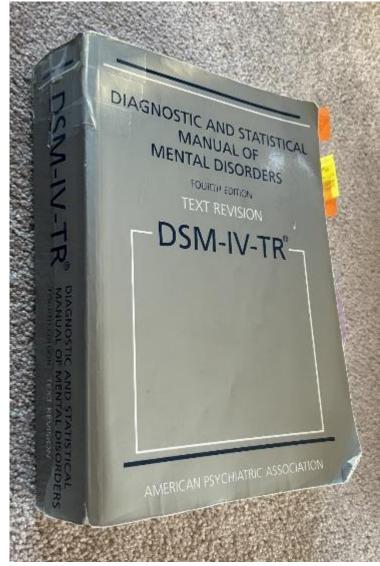




- In 2000, the APA again included DCD in DSM (pg. 56-58) – 315.4
- Classified under Usually First Dx in Infancy, Childhood, or Adolescence
- 4 Criteria* Cannot co-occur with PDD
- Prevalence rate as high as 6%
- Co-occurs Phonol, Expr, or Mixed E/R

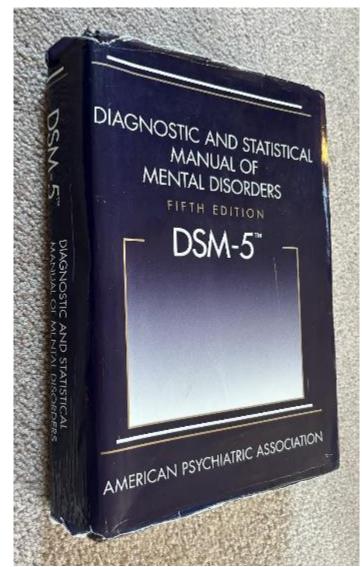
Lang, LDs & ADHD





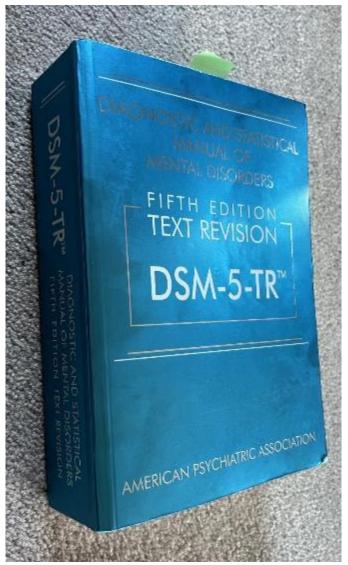
- In 2013, DCD was also listed in DSM (pg. 74-77) – 315.4 (F82)
- Classified under Neurodevelopmental Disorders (Look closely at motor impairment)
- Subtle changes made to 4 Criteria
- Prevalence rate 5 to 6% in aged 5-11
- Co-occurs: LDs, speech-language, ASD,* ADHD, & mood/disruptive/emotional





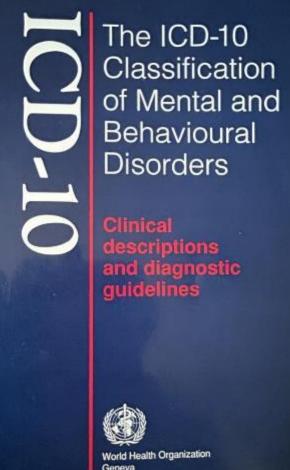
- In 2022, DCD again included in DSM (pg. 85-88) – (ICD Code only: F82)
- Still classified under Neurodevelopmental Disorders
- Still 4 Criteria
- Prevalence rate now at 7-8% in Canada
- Co-occurs: communication, LDs, ASD,* ADHD, & mood/disruptive/emotional





- Dyspraxia never listed in DSM or ICD
- Is 'informal' term like dyslexia, dyscalculia, dysgraphia, aphasia, used in GB & AUS
- At Leeds, GB in 1994: International group of researchers determined to use DCD over dyspraxia





- Rather than dyspraxia, even the WHO lists: F82: Specific Developmental Disorder of Motor Function (like DCD)
- Like the APA, the WHO places
 DCD/SDDMF
 after SLDs



2 Specific developmental disorder of motor function

The main feature of this disorder is a serious impairment in the development of motor coordination that is not solely explicable in terms of general intellectual retardation or of any specific congenital or acquired neurological disorder (other than the one that may be implicit in the coordination abnormality). It is usual for the motor clumsiness to be associated with some degree of impaired performance on visuo-spatial cognitive tasks.

- Dyspraxia (movement disorder) term often used for 'clumsy' children
- Youth/adults can acquire dyspraxia (movement issues) late in life
- In contrast, DCD is a formal & consistently used term; considered a credible mental

health condition

for 37 years already





DCD has a high SPR & it co-occurs with many conditions we know &
 Dx. Yet, DCD is rarely Dx. Why? DCD is seldom taught in grad school or offered as PD. No comprehensive published assessment tools for

front-line clinicians/psychologists

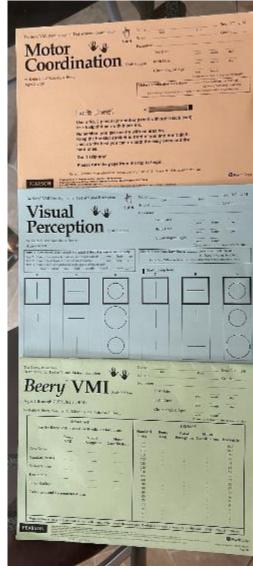
who CAN Dx DCD...



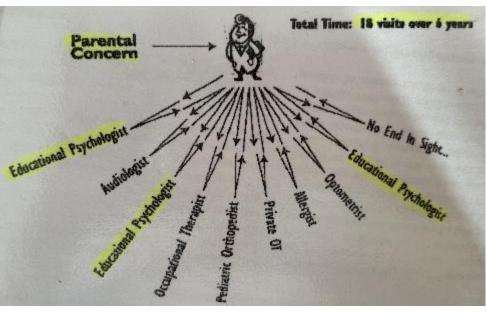


- Yes, some tests are available to psychologists
- Even though they should be involved, OTs & PTs are not supposed to Dx this mental health condition
- Instead, psychologists must rule-in & rule out various features in coordination with other professionals





• Why? Because people count on us. When assessing for DCD, apply basic understandings; & use a coordinated & very thorough approach







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 So too, via transystemutation, DCD's observable incoordination does move & morph across other systems & into other aspects of functioning

Chapter 11

in the classroom

Effects of transystemutation

The Process of Transystemutation

Chapter 10

My other findings and the process of transystemutation



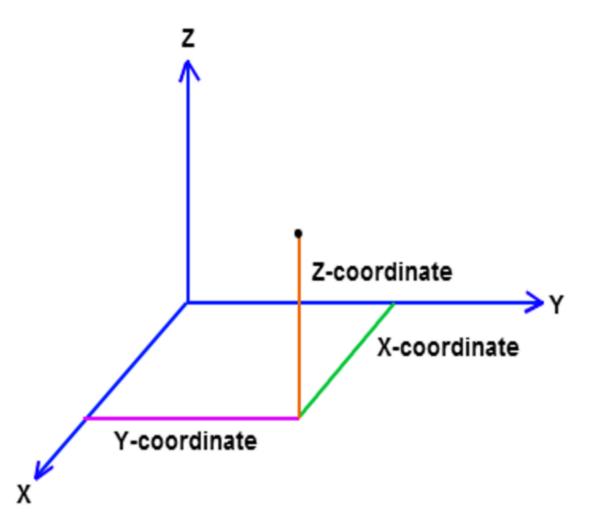
• Psychologists have likely heard about Piaget's sensori-motor stage (considered as the foundation for other aspects of development)







- Consistent, well-integratedcoordinated sensori-& perceptual-motor signals & functioning enables early social, communication & cognitive development
- If <mark>uncoordinated</mark>...





- Slow to acquire motor milestones
- General clumsiness
- Poor balance & posture
- Falling, stumbling & tripping
- Dropping & spilling things





- Slow to acquire clear & articulate speech
- Weak oral motor control

(lisps, slurs, stuttering, etc.)

• Uncoordinated rhythm of

breathing & speaking





- Wants to, but cannot keep up with peer-based play
- Delayed to learn bike riding
- Slow & inefficient in activities
 - of daily living
- Low muscle tone



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1. Had sufficient opportunities to learn, yet has problems acquiring &/or executing coordinated motor skills



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Psychologist







2. Incoordination causes problems at home (ADL), in school,

(academic performances and output), & during play





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Incoordination also affects one's vocational training
 &/or performance efforts during employment



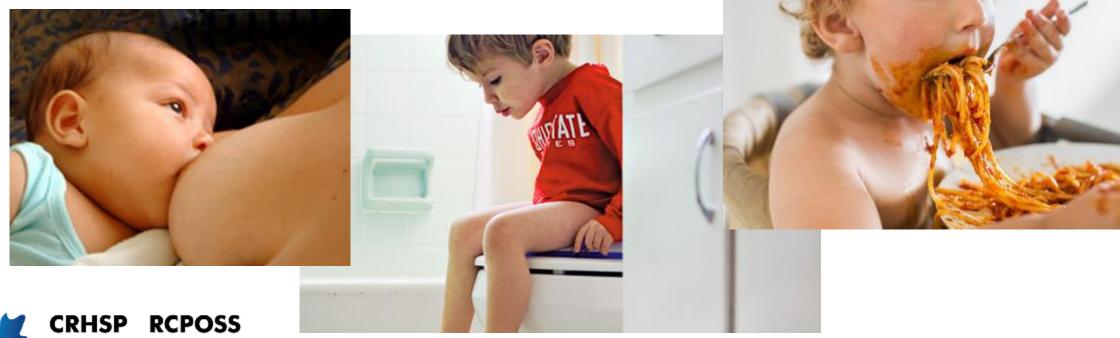






3. Incoordination must already be evidenced in one's early

developmental years



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4. Motor difficulties not due to visual impairment, medical/neurological

condition or intellectual developmental disorder









- Consequences of DCD: fatigue, incredible frustration
 - "I can't get my body to do what my mind wants"
- Academic under-

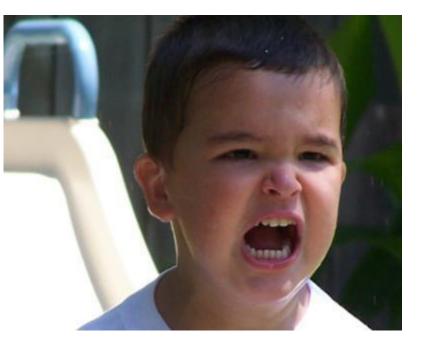
performance

 May be considered slow or 'lazy'









- Consequences of DCD: reduced participation in sports/recreation
- Sedentary
- Limited friends
- Physical health concerns - risk of obesity





- Consequences of DCD: emotional dysregulation & low self-worth
- Is often bullied
- Social exclusion OR
- Social withdrawal
- for self-protection



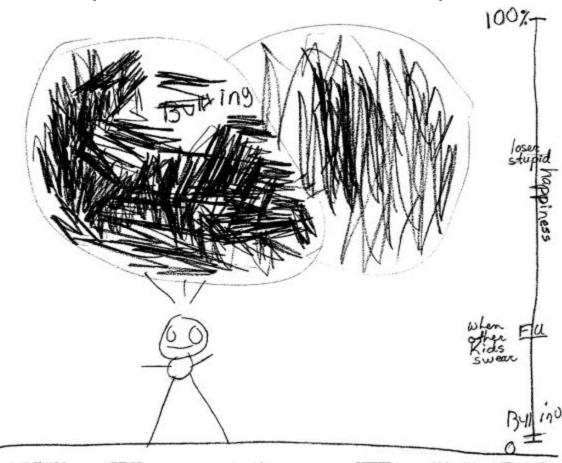




• Consequences of DCD: socially apart – yet confused about why...







• Consequences of DCD: psycho-social concerns, sadness &/or anger

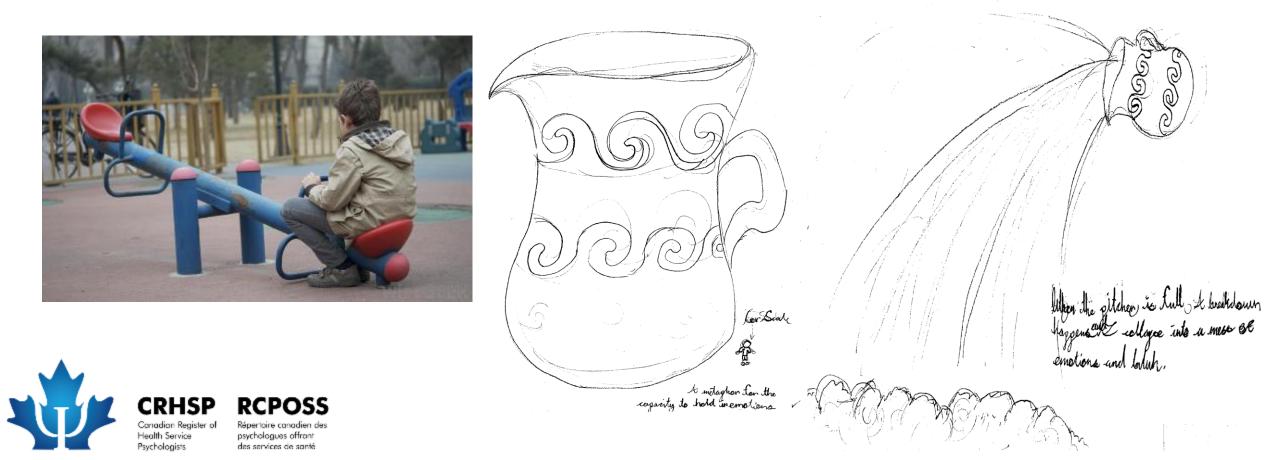






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• Consequences of DCD: well-aware, vulnerable, misjudged & very lonely



- Consequences of DCD: anxiety, depression & other serious issues
- Occupational deprivation/marginalization & related concerns over life







- Psychologists encouraged to watch for: unusual pencil grip, dislike of gym class, often alone at recess
- Cannot coordinate speed
 & neat penmanship,
 little to few friends, may

start missing school



Charter 8 test H The Volume of the cube is 2750.561m v



- Psychologists encouraged to watch for: sensory overwhelm, history of issues with oral, ocular, fine &/or gross motor skill performances
- May position eyes too
 - close to a book or struggle
 - to track when reading
- Weak processing speed



Because many aspects of DCD mimic ADHD,

IDD, SLDs & ASD, we must learn about DCD

& properly differentiate these conditions...



ASKING THE RIGHT QUESTIONS





• Are parents & professionals REALLY seeing the situation properly?









- Poor eye contact & socially alone classic autism vs self-protection?
- Trouble with transitions perhaps DCD's motor load overwhelms
- Rigid thinking a need for calm or justice because student is astute?
- Sensory sensitivities & DCD
- Motor immaturities & cramps?
- Clumsiness is NOT stereotypies



- Inattentive or, simply cannot coordinate multiple sensory signals or tasks at once
- Seems forgetful & disorganized
- Often appears distracted & unfocused
- Needs simple instructions at a time
- Often restless, fidgety & wiggly





- Outcomes of DCD accumulate
- Motor issues long forgotten...
- More psychological concerns

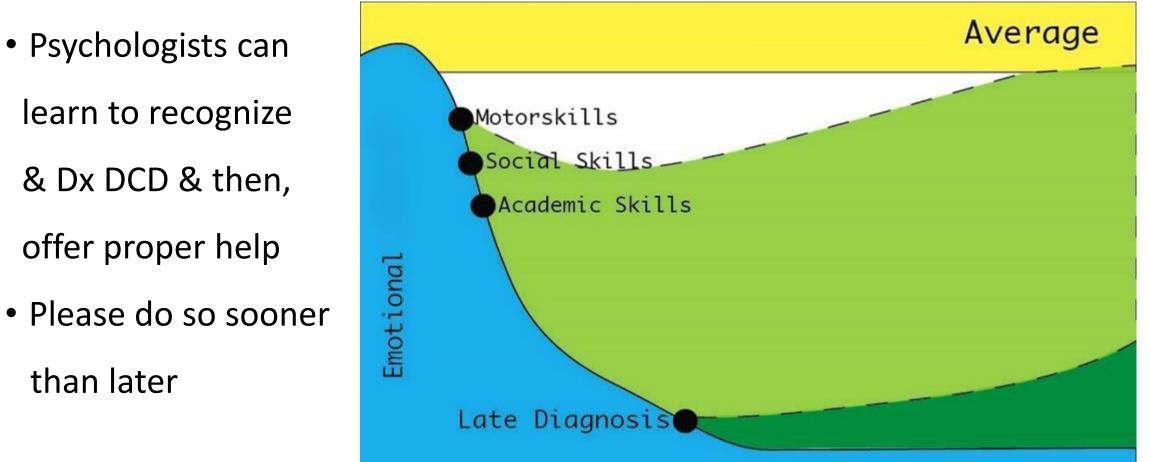
arise & become more serious

DCD may be trans-diagnostic link

between multiple conditions





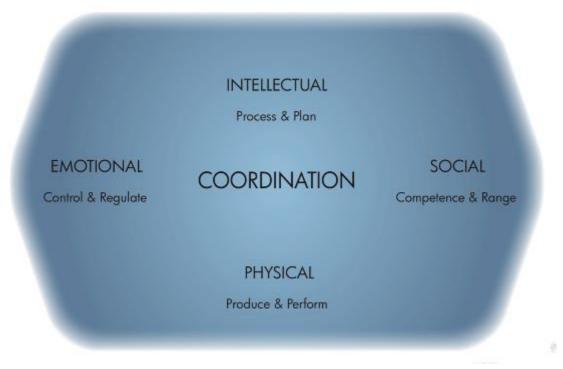




• Ethical guidelines require me to educate others about topics that relate to society. I cannot unknow DCD. Due to SPR & PR, I cannot be quiet...

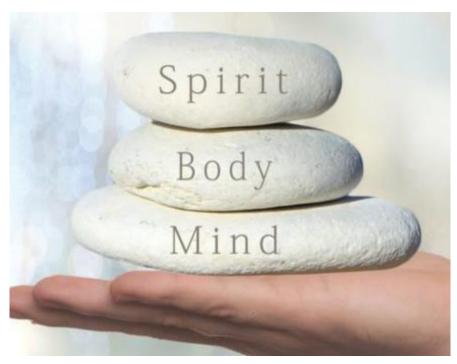


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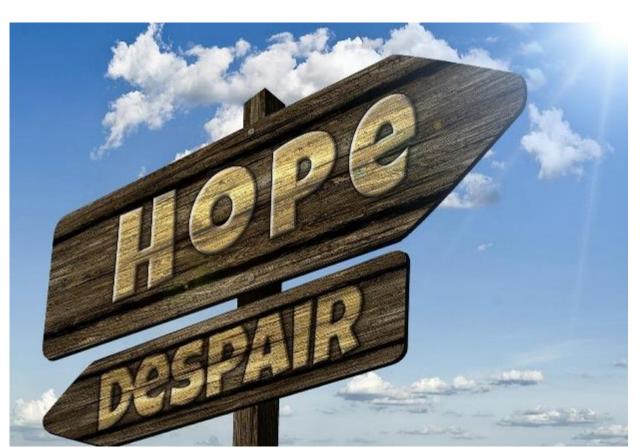


• Clinicians know that hope, new & changed lives are possible





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• Early problems can be found & then, via a coordinated approach, be properly addressed..





• We know the correct Dx

can truly help people













• Although APA considers DCD a 'motor disorder', because our mind is the COORDINATION center of our bodies, DCD should be viewed as an all-

encompassing condition that

results in disharmony between

body & mind – which affects all

aspects of one's daily functioning





• Rather than a 'motor' disorder, DCD is in fact, a disorder affecting one's

<mark>mental</mark> processes

• With the 7-8% prevalence rate,

we should all

learn about it





• Most are impressed by:





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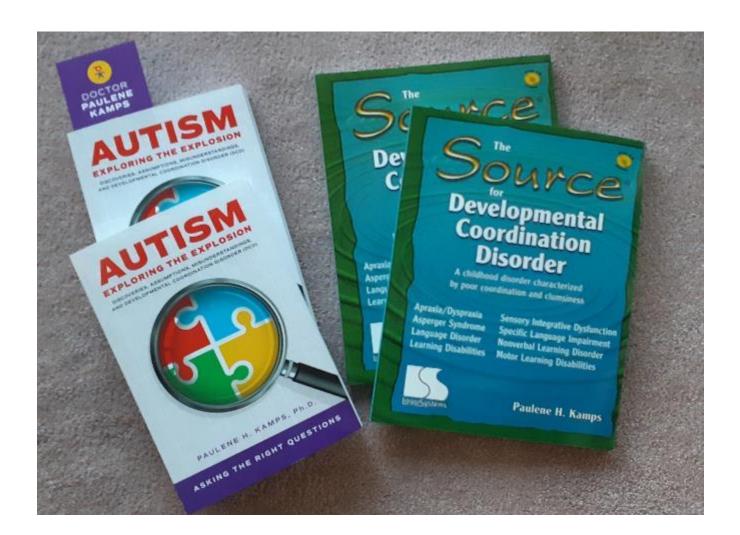




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Interested to Learn More?

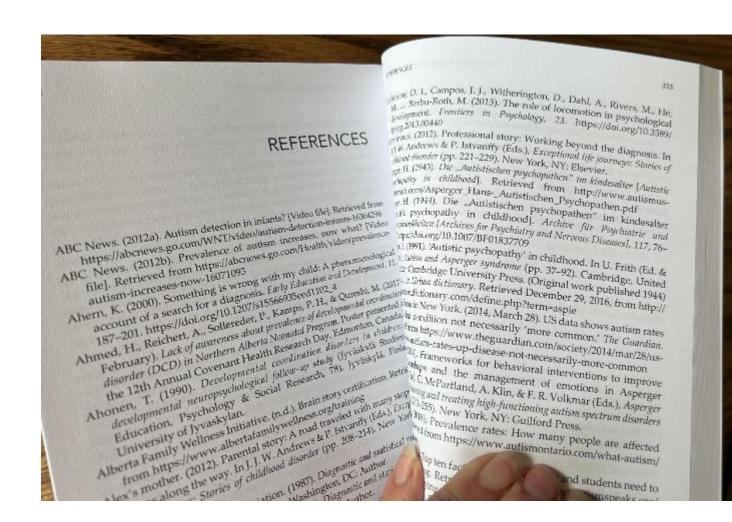
- I have authored two books (order via my website)
- Other info & free items on website: www.drkamps.ca





Read & listed over 100
 pages of references,
 appendices & endnotes
 about DCD & how DCD
 mimics & therefore, is
 being mistaken for ASD...





- Blank, R., Barnett, A., Cairney, J., Green, D., Kirby, A., Polatajko, H., Rosenblum, S., Smits-Engelsman, B., Sugden, D., Wilson. P., & Vinçon, S. (2019). European Academy of Childhood Disability (EACD): International clinical practice recommendations on the definition, diagnosis, assessment, intervention and psycho-social aspects of developmental coordination disorder (DCD), long version. *Developmental Medicine and Child Neurology*, *61*(3), 242–285. https://doi.org/ 10.1111/dmcn.14132
- Gaines, R., Missiuna, C. Egan, M., & McLean, J. (2008). Interprofessional care in the management of a chronic childhood condition: Developmental coordination disorder. *Journal of Professional Care, 22*(5), 552-555. https://doi.org/10.1080/13561820802039037



- Green, D., Baird, G., Sugden, D. (2006). A pilot study of psychopathology in developmental coordination disorder. *Child: Care, Health, and Development,* 32, 741-750. https://doi.org/10.1111/1469-7610.00054
- Missiuna, C., Moll, S., King, G., King, S., & Law, M. (2006). Missed and misunderstood: Children with coordination difficulties in the school system. *International Journal of Special Education*, 21(1). 53-67. Retrieved from https://wwwinternational sped.com/
- Zwicker, J. G., Suto, M., Harris, S. R., Vlasakova, N., & Missiuna, C. (2017). Developmental coordination disorder is more than a motor problem: Children describe the impact of daily struggles on their quality of life. *British Journal of Occupational Therapy, 81*, 65-73. https://doi.org/10.1177/0308022617735046



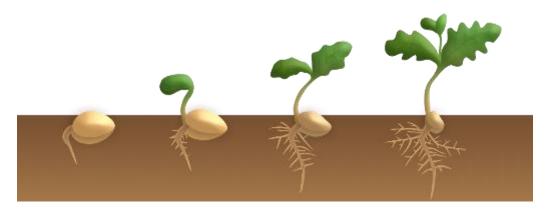
- If you only have time to read one reference, the following open access article relates directly to our work as psychologists:
- Meachon, E. J., Zemp, M., & Alpers, G. W. (2022).
 Developmental coordination disorder (DCD):



Relevance for clinical psychologists in Europe. Clinical Psychology in Europe. June 30; 4(2): e4165. doi: 10.32872/cpe.4165. PMID: 36397944; PMCID: PMC9667416 https://cpe.psychopen.eu/index.php/cpe/article/view/4165



Q&A





- We will now discuss questions that were submitted via the Q&A feature throughout the presentation.
- Due to time constraints, we will not be able to address every question asked.

