

# Supporting Students with Developmental Coordination Disorder (DCD)

Practical Classroom Strategies for Educators

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The background features abstract, flowing curved lines in shades of green and blue. A thick green line curves from the top left towards the center. Another thick green line curves from the top right, forming a large, open shape on the right side of the image. A blue line follows a similar path, slightly offset from the green ones, creating a layered effect.

*Welcome!*

# Outline

- Welcome and introductions
- Overview of workshop objectives
- Brief introduction to DCD
- Identify common presentation of DCD
- Common concerns in the classroom
- Break
- Possible strategies and how to implement them

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# Workshop Objectives


1. Identify the key signs of DCD and understand its impact on a child's learning, play, and daily participation in school settings.
2. Implement practical classroom strategies to support students with DCD in building skills, confidence, and independence.

# Main reference



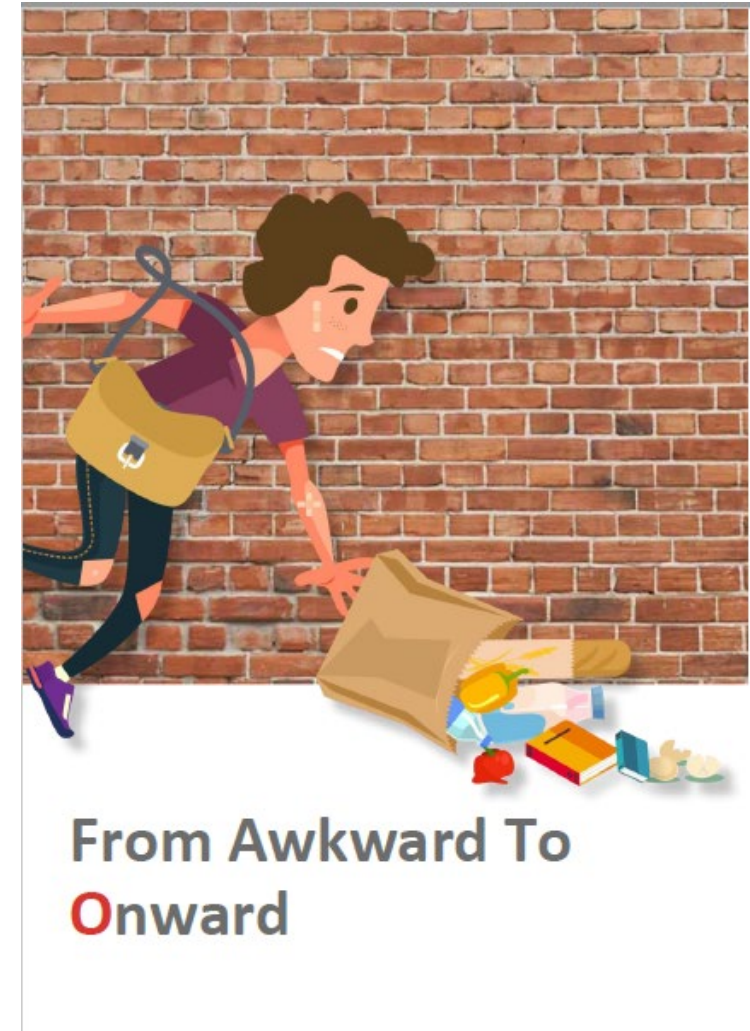
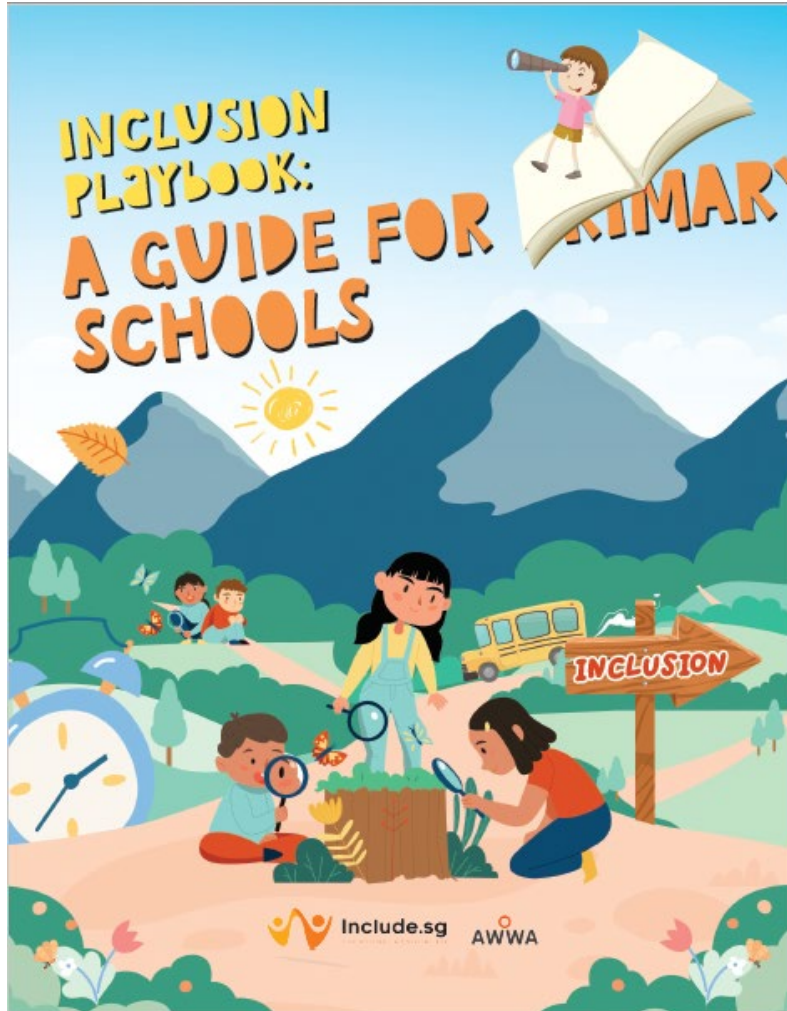
EACD Recommendations |  **Open Access** |    

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

Rainer Blank, Anna L Barnett, John Cairney, Dido Green, Amanda Kirby, Helene Polatajko, Sara Rosenblum, Bouwien Smits-Engelsman, David Sugden, Peter Wilson, Sabine Vinçon 

First published: 22 January 2019 | <https://doi.org/10.1111/dmcn.14132> | Citations: 575

# Other resources – include.sg, AWWA



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# What is DCD?

- Neurodevelopmental disorder, primary issues with motor coordination
- DSM-5 criteria
  - acquisition and execution of motor skills and related coordination are below what is expected based on age
  - the deficits of motor skill and coordination significantly interfere with daily life in the domains of self-care, scholastics, work, leisure, and play
  - the symptoms began in childhood, and
  - the deficits cannot be better explained by any other condition
- Affects daily participation in school and play


# What it may look like...

- Motor skill and coordination
  - May have taken longer to walk, ride a bicycle, write, kick a ball
  - May also have learned the skill but struggle to do the task in a coordinated way
- Interfere with daily life
  - May avoid team sports in fear or embarrassment because of the lack of coordination



# How Common is DCD?

- 5–6% of school-aged children, prevalence in males about 3-5 times higher than in females
- Often under-recognized and misunderstood
- Should be properly diagnosed by a paediatrician
  - Parent report, medical history, developmental history
  - Information from others e.g. teachers, therapists, psychologists
- Common to have a co-occurring disorder
  - ASD, ADHD, sometimes speech concerns, psychosocial concerns (e.g. disruptive, emotional, anxious)



What about adolescents  
and adults?

## How developmental coordination disorder affects daily life: The adolescent perspective

Fouzia Khairati <sup>a,1</sup>, Natalie Stewart <sup>a,1</sup>, Jill G. Zwicker <sup>a,b,c,\*</sup>

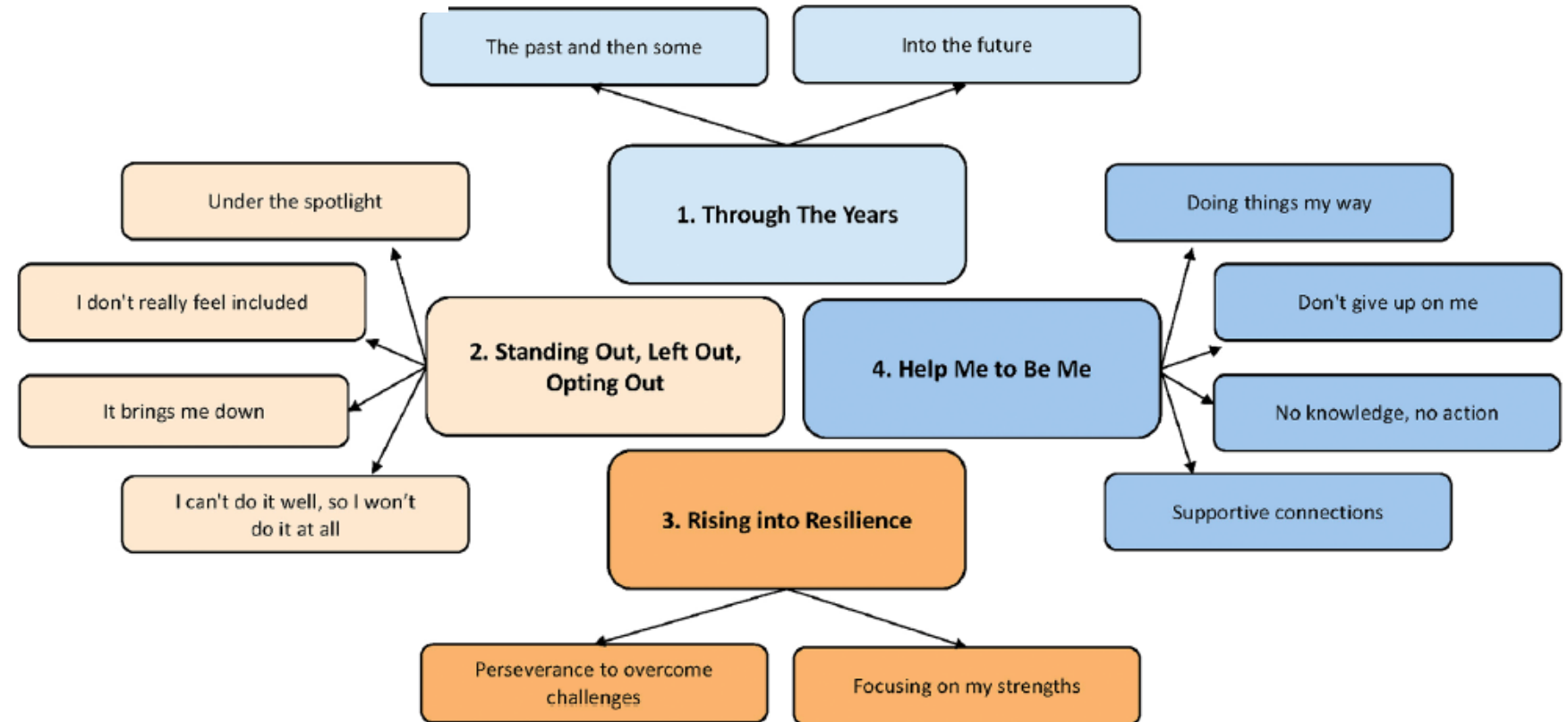


Fig. 1. Identified themes and sub-themes.

# Recommendations (adolescents)

- Access to services especially within the school setting
- Service is not adequate if only focused on the motor aspects
- Need to consider the cognitive, social emotional and mental health challenges
- Services also need to be adaptable to the changing contexts and expectations
  - Eg preparing for post-secondary education, learning to drive, gaining employment
- Supportive environment eg noncompetitive during PE, alternative modes to demonstrate knowledge (scribe, oral presentation, use of technology)

RESEARCH ARTICLE



## **“It feels as though I need to exert more effort than others”: the experience of daily participation of young adults with developmental coordination disorder (DCD) – a qualitative study**

Shahar Zaguri-Vittenberg, Naomi Weintraub and Miri Tal-Saban

School of Occupational Therapy, Hebrew University, Jerusalem, Israel

- Everyday activities – sometimes took more time, more effort, needed a quiet environment or external support
- Reduced sense of control – stressful and possible sense of burden on others
- Strategies – altering task, adapting environment, finding activities that match their skills,

# Adults with DCD

- Motor skills (balance, agility, hand skills)
- Executive functions (planning and organising tasks; remembering instructions; managing behaviour; focusing attention)
- Mental health (increased rates of anxiety and depression; low self-esteem and quality of life)
- Physical health (increased rates of obesity; lower physical fitness)
- Driving
- Organisation of everyday activities (managing money, planning ahead, finding belongings, navigating, being on time)
- Independent living, employment, work performance

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# DCD at home, school and play

# At home, DCD can impact on...

## **Meal times**

- Frequent spills
- Chewing with mouth open
- Difficulty sitting still and staying seated
- Poor use of cutlery
- Difficulty using fork and spoon together
- Difficulty opening packages

## **Dressing**

- Slow
- Disorganised
- Clothes may be twisted or on backwards
- Shoes on wrong feet
- Struggle with fasteners (buttons etc)
- May prefer to go without socks



# At school, DCD can affect...

## **Sitting still and writing**

- May be slouching over
- Hold head in hands, lean on others or lean on table
- Write slowly or messily
- May avoid or refuse writing task or cutting task
- May press very hard, or too lightly

## **Organisation**

- Messy desk
- Can't find items in the bag
- Forget to bring items
- Can't organise writing on the page
- If there are several steps in the task, may struggle to follow

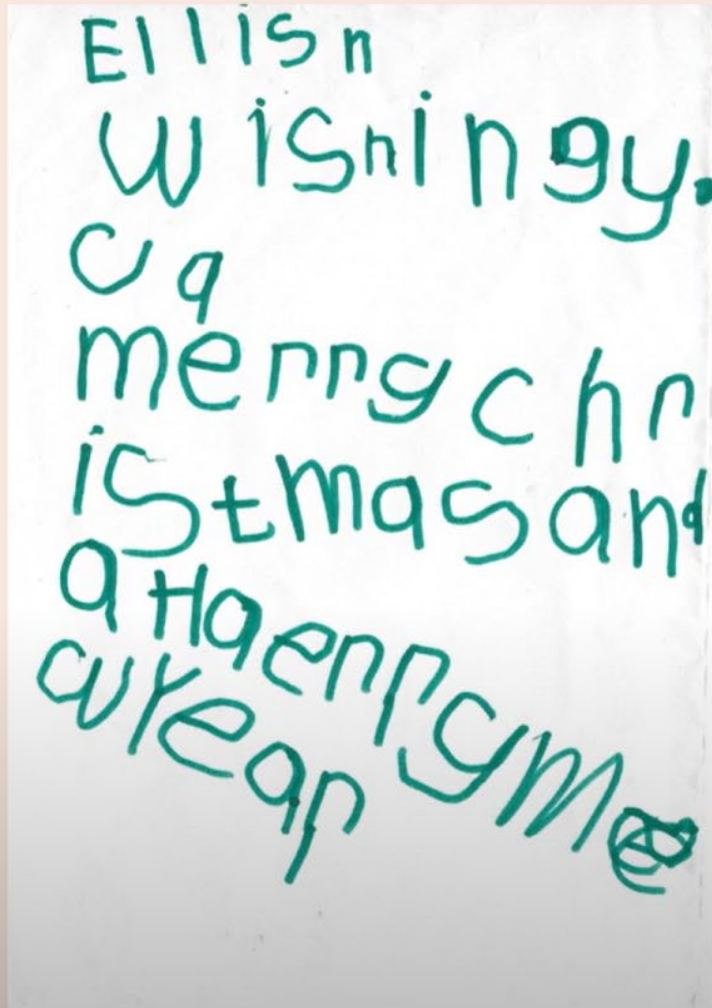
This is a writing sample from a typical Grade One student:

The quick brown fox jumps  
over the lazy dog. The quick  
brown fox

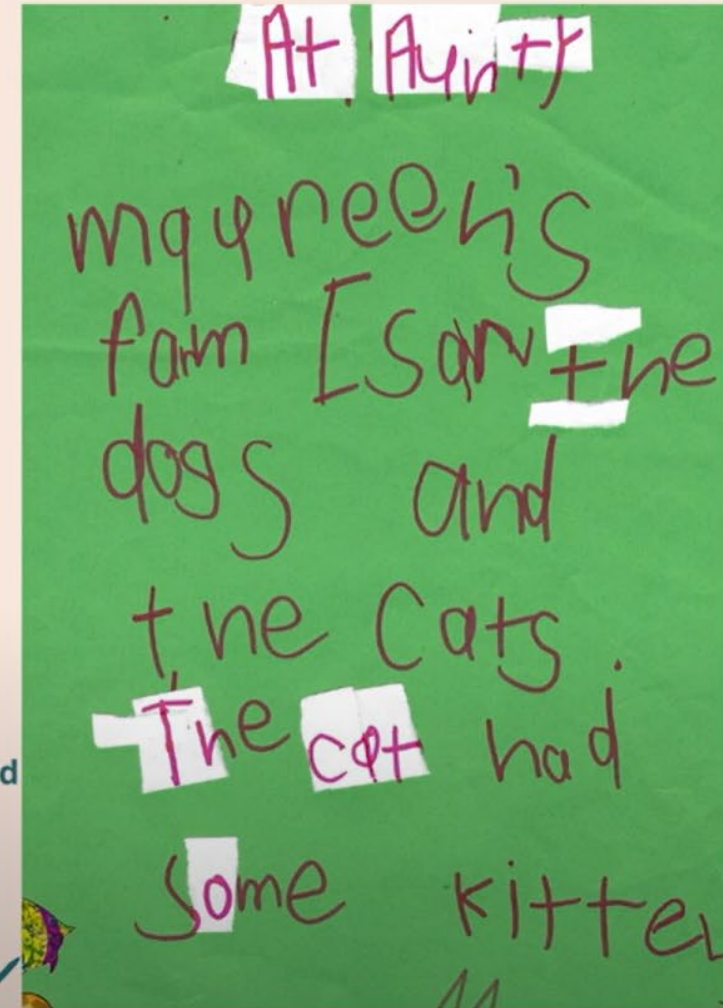
This is a writing sample from a Grade One student with DCD. Notice the poor organization, spacing and legibility:

L u c a s L u c a s  
Grade 1  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
the quick brown fox  
jumped over the lazy dog.  
The quick brown fox  
jumped over the lazy dog.

## Handwriting Pictures




The first picture is my handwriting aged five, year one.



The second picture is my handwriting aged seven, year three.


## Handwriting Pictures

and are just getting  
our things and heading  
up to the Koru lounge  
we are here and are  
just chilling but our  
flight is canceled to  
12:20 which is a real  
pain so now we  
have to wait for  
another half hour.  
VZ one three six please  
board now so we go  
to 78 and we are on  
the plane now we  
on 5:40 we arrive at  
the Auckland airport  
so cold I wish that



The third picture is my handwriting aged  
thirteen, year seven.

The fourth picture is my handwriting now  
as an adult.



This is my handwriting now  
as an adult.

# At play, DCD can affect...

## **Sports**

- May play with it is not competitive
- May try out sports but give up after a while
- Difficulty with ball games
- Difficulty with team sports
- Fatigue quickly

## **Leisure**

- Prefer sedentary activity
- Prefer to watch rather than play
- Prefer to interact with adults (chat) than peers
- May have poorer social skills

Video source:  
Canchild  
Leila Sagalla

# Children with DCD are often also...



CREATIVE!



THINK OUTSIDE  
THE BOX



ENTHUSIASTIC



SELF AWARE



SENSITIVE



KIND



RESILIENT



*Break*

# Framework for strategies

- CanChild ([www.canchild.ca](http://www.canchild.ca))
- Resources
  - Printed resources
  - Links
  - Online workshop

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# Framework for strategies - MATCH

- Modify the Task
- Alter your Expectations
- Teach Strategies
- Change the Environment
- Help by Understanding

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# Modify the Task

- Size and weight of the tools used
  - Eg change size and weight of ball for PE
- Time allowed for completing the task
- Structure of the task
  - Eg provide breakdown of steps
  - Eg provide checklist for task
- Use of technology
  - To write or to type (see canchild for resource)

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# Alter your Expectations

- Consider the ultimate goal of the activity
  - Fun?
  - Participation?
  - Skill development?
- Be flexible and consider alternative ways to achieve the same goal
  - Eg spelling orally vs writing it down
  - Eg learning a skill vs doing it fast?
    - Can only do it fast when you know how to do it well

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# Teach strategies

- Important to try out strategies and REVIEW to determine if these work for this child! Not all strategies work for every child...
- Break down tasks into steps
  - Teach each step separately, ensure success in small steps
- If the child has strengths in verbal and thinking skills
  - Ask what do you think we need to do next? How will we know when we are done?
- Use visuals or technology if it helps the child
- Engage child in evaluating if the strategy works

# Change the Environment

- Noise
- Light
- Visual distractions
  - Focus corner in the room
- Number of people in the room
- Furniture
- Tools and equipment
  - Enlarge printouts, use worksheets to reduce writing
  - Checklists and visual cues

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# Help by understanding

- Read up more about DCD
- Try to understand why the child may display some behaviours
- Try out strategies
  - Talk to others to discuss how to implement strategy
  - Determine what success might look like
  - Set a time to tweak the strategy if needed
  - Determine whether to stick with the strategy or change
- Work with other stakeholders
  - Parents, health professionals, other teachers

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# How would it look like? How to apply?

- 8 years old, John, DCD, mainstream school
- **Handwriting:** John's writing is slow and difficult to read. He tires quickly during written tasks and often leaves work incomplete.
- **PE and Recess:** He avoids physical education and prefers to sit out during recess. When he participates, he appears uncoordinated and often gets teased by peers. His peers do not approach him to play at recess.
- **Organisation:** He frequently forgets materials, misplaces books, and struggles to pack his bag independently.
- **Classroom Participation:** He hesitates to raise his hand or volunteer for tasks requiring movement or writing, affecting his confidence.

# Options - Handwriting

- Modify the task
  - Reduced writing load (MCQ, blanks)
  - Possible keyboarding to input answers
- Alter expectations
  - Possible to try speech to text or oral answers
- Teach strategies
  - Self-talk to help with legibility e.g. Tall letters sit on the line
- Help by understanding
  - Teachers to learn and try out strategies



# Options – PE and recess

- Modify the task
  - Do last step only, then try last 2 steps
  - PE – may not play the full sport, but only part of it
    - T-ball rather than baseball/softball
- Change the environment
  - Recess – instead of others asking him to play, he chooses an activity that he can do and ask others to join
- Help by understanding
  - Need PE teacher to facilitate

# Options – Organisation

- Modify the task
  - Create checklists of things to bring (visual rather than verbal)
  - Create folders or separators inside the bag to help with organising
- Teach strategies
  - Develop routine of using checklist
- Help by understanding
  - May need parent to facilitate



# Questions and Answers

# Summary

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- Implement practical classroom strategies to support students with DCD in building skills, confidence, and independence.

# 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 and child neurology*, 61(3), 242–285. <https://doi.org/10.1111/dmcn.14132>
- Canchild.ca
- Zaguri-Vittenberg, S., Weintraub, N., & Tal-Saban, M. (2023). “It feels as though I need to exert more effort than others”: the experience of daily participation of young adults with developmental coordination disorder (DCD) – a qualitative study. *Disability and Rehabilitation*, 46(15), 3332–3341. <https://doi.org/10.1080/09638288.2023.2246376>

- Khairati, F., Stewart, N., & Zwicker, J. G. (2024). How developmental coordination disorder affects daily life: The adolescent perspective. *Research in Developmental Disabilities*, 144, 104640. doi:10.1016/j.ridd.2023.104640
- Klein, E. S., Cheung, C., Garces, A., Barbic, S., & Zwicker, J. G. (2024). Caregiver burden and mental health: Parent perspectives when raising a child with developmental coordination disorder. *Research in Developmental Disabilities*, 144, 104656. doi:10.1016/j.ridd.2023.104656

# Other resources

- [https://www.awwa.org.sg/source/uploads/2020/04/DCD-Booklet\\_Final-Version.pdf](https://www.awwa.org.sg/source/uploads/2020/04/DCD-Booklet_Final-Version.pdf)
- Include.sg



*Thank you!*