

Using the Cognitive Orientation to Daily Occupational Performance Approach™ (CO-OP) for children on the autism spectrum

CliniKids CO-OP Research Team

Briohny Dempsey OT, Jess Reynolds PhD & Marie Rodatz Clinical Lead OT





I'd like to acknowledge that we are on Nyoongar Wadjuk Boodjar and wish to pay my respects to their Elders past, present and emerging and for their generosity and wisdom in our work here at the Telethon Kids Institute.

About us

- **CliniKids** is **Telethon Kids Institute's** first team integrating research with a clinical service. At the heart of our innovative model are children with developmental delay and/or autism spectrum disorder and their families.
 - Jess Reynolds (PhD) – Project Manager
 - Briohny Dempsey (OT) – Clinical Research Assessor
 - Marie Rodatz (OT) – CliniKids Clinical Lead of Occupational Therapy

About you

- Where are you currently working/studying?
- What population of children do you work with?
- Have you heard of the CO-OP approach before? If yes, what is your current experience of the intervention?
 - i.e. - I haven't heard of the CO-OP approach before
 - I have heard of it/ know quite a bit about the approach, but haven't done the training
 - I have done the training/ using this regularly in my practice

Agenda

- ☐ What is CO-OP?
- ☐ Current evidence supporting CO-OP
- ☐ CO-OP in practice
- ☐ Research protocol for current study for children with autism



What is CO-OP?

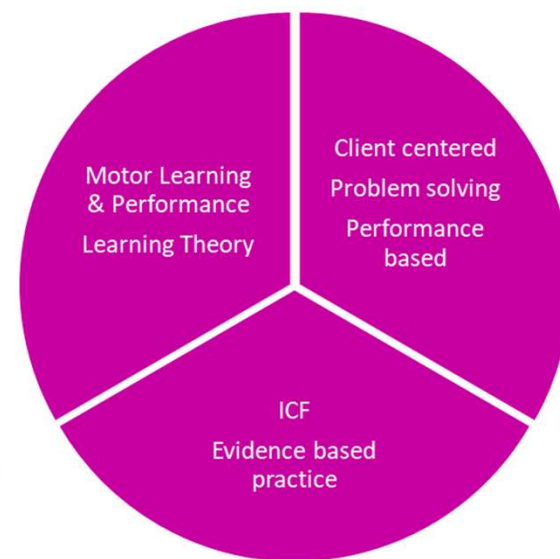


Background

- In the 1990s it was found that intervention approaches for children with developmental coordination disorder (DCD) were relatively ineffective.
- Polatajko and colleagues developed the Cognitive Orientation to daily Occupational Performance Approach™ (CO-OP) for children with DCD using theories grounded in Learning and Problem Solving, Motor Learning and Motor Control, Child-Centred and Cognitive Strategy Use.
- They published the protocol for CO-OP in 2001 and it has since been used in research for other populations experiencing motor difficulties.

What is CO-OP?

- Client centered, performance based, problem solving approach that enables skill acquisition through a process of strategy use and guided discovery.
- Verbal problem-solving intervention
- Top-Down Approach
- Occupation is the goal and the intervention
- About thinking and about learning
- Been shown to enhance neuroplasticity as it is explicit, task specific and goal driven
- Practice should involve active learning, problem solving and be frequent, intense and variable
- Enables clients to contribute meaningfully to their treatment



Goal of CO-OP

The overall goal of CO-OP is that clients develop the metacognitive skill of using a systematic, strategic approach to problem solving performance problems.

- Skill acquisition
- Cognitive Strategy use
- Generalization
- Transferable



6 Key features to deliver CO-OP

1. **Session Structure**
2. **Child Chosen Goals**
3. **Dynamic Performance Analysis**
4. **Cognitive Strategies**
5. **Enabling Principles**
6. **Parent/Caregiver Involvement**

CO-OP Prerequisites for Success

- Sufficient cognitive and language skills
- Identify and set goals
- Respond and attend to CO-OP therapist
- Have the potential to perform the task
- Motivation to learn the skills

Trifecta of CO-OP

- Dynamic Performance Analysis: Finding the performance problem

*Need to consider the **child**, **task** and **environment** and to distinguish between breakdowns and differences.*

- Guided Discovery: Doing it together

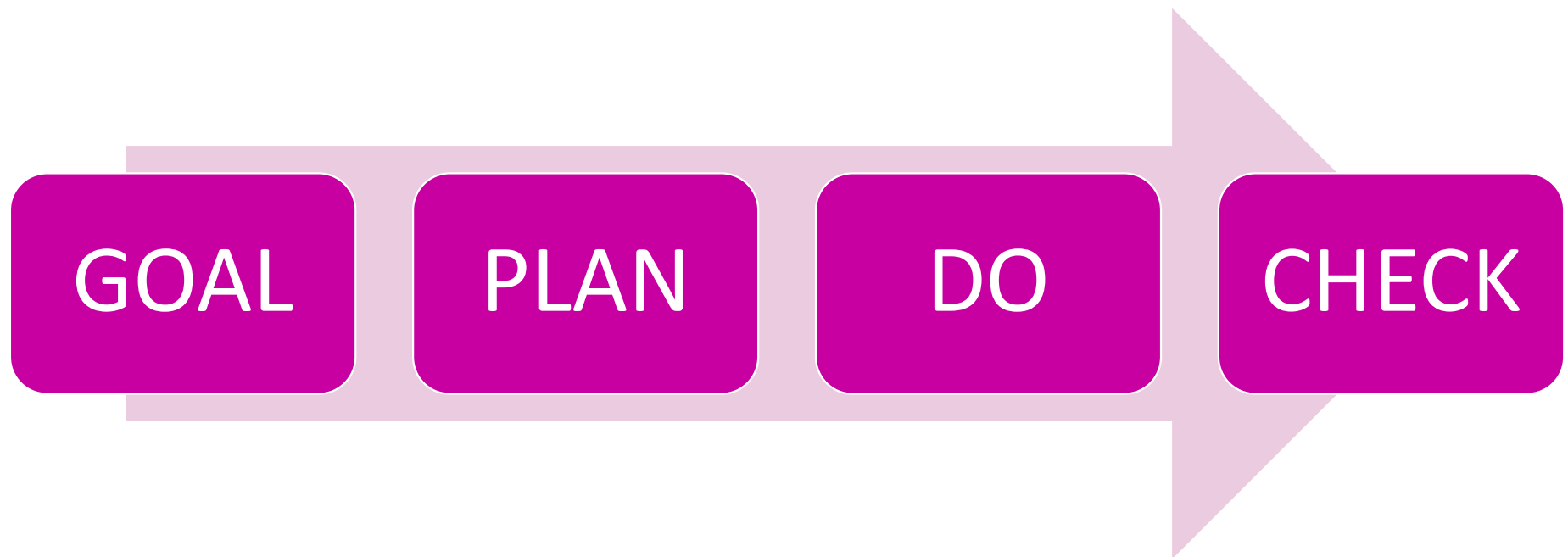
Coaching not Directing

- Cognitive Strategy Use: Finding the solution

Goal, Plan, Do, Check



CO-OP



GOAL-PLAN-DO-CHECK

GOAL – What you want to do

PLAN – How to do it

DO – Do the plan

CHECK – Did you do the plan? Did it work?



Captain
GOAL PLAN DO CHECK!

CliniKiDS
Research into Practice

TELETHON
KIDS
INSTITUTE

Current evidence supporting CO-OP



CO-OP & Adaptations

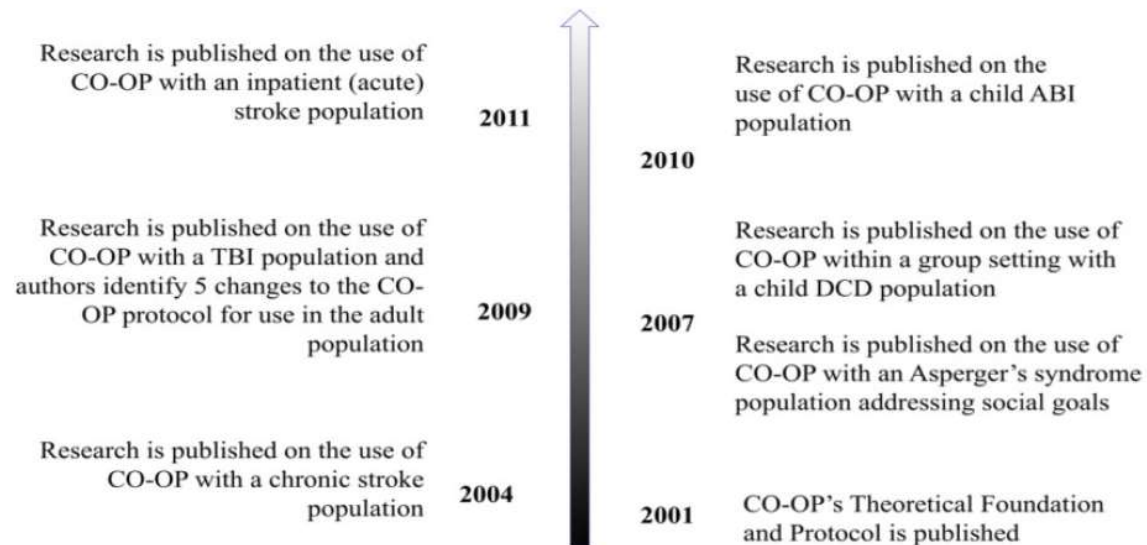
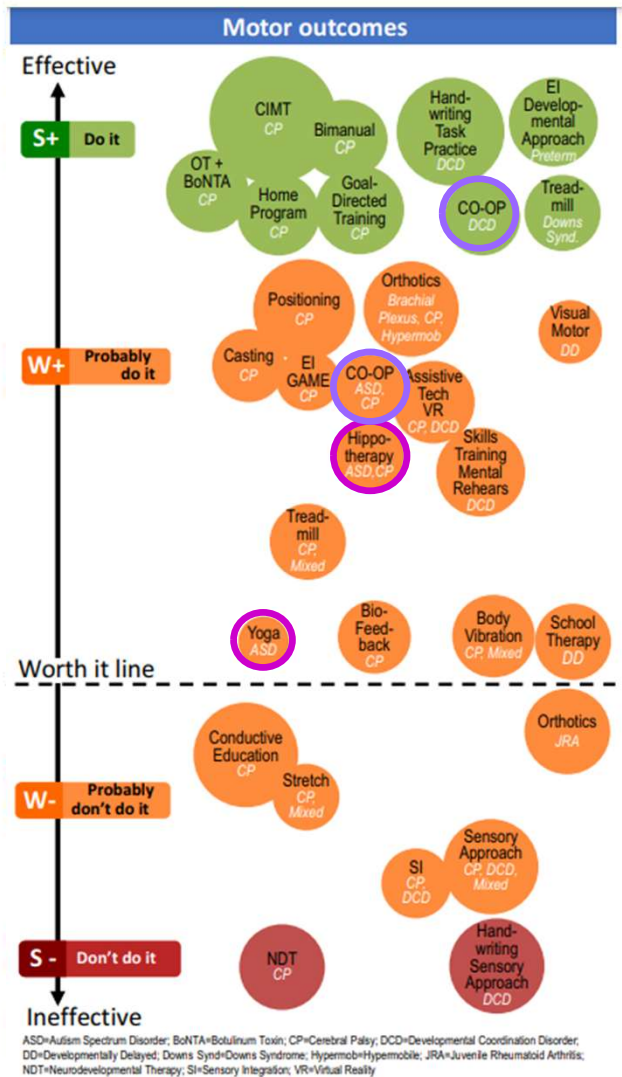


Figure 2. Timeline of significant CO-OP Approach publications.



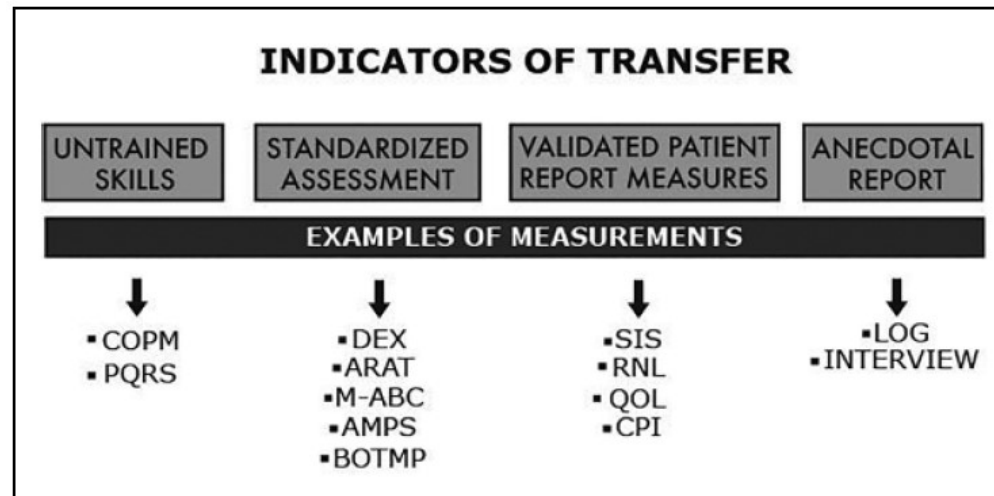
(figure from Novak & Honan 2019)

Who has it shown to be effective for?

- DCD
- Autism
- ADHD
- CP
- TBI
- Stroke

Transfer

- Prior learning of one skill influencing new learning or performance
- Key component of COOP - problem solving element of CO-OP



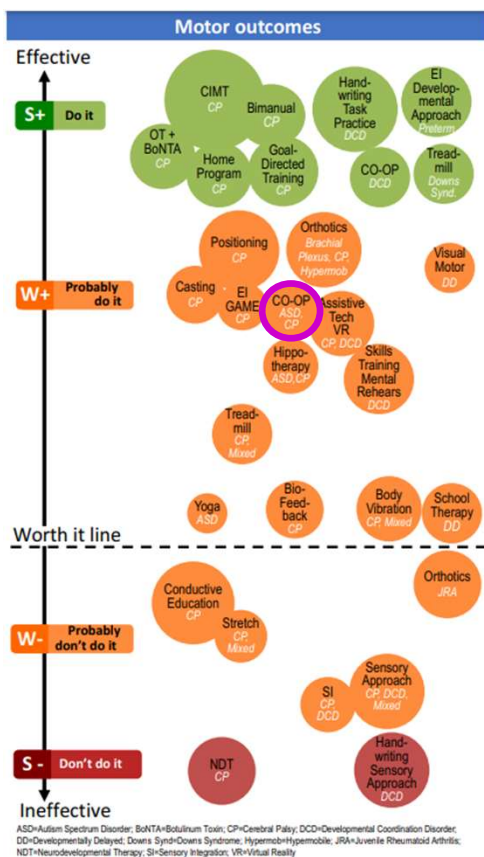
(figure from Houldin et al., 2018)

CliniKiDS

Research into Practice

TELETHON
KIDS
INSTITUTE

CO-OP for children on the autism spectrum



(figure from Novak & Honan 2019)

- Limited research
- Mostly case studies
- Several publications present information on the same participants

CO-OP for children on the autism spectrum

Authors	Year	Participants	Outcomes
Rodger, Springfield & Polatajko ** Same children	2007	N=2, Autism (Asperger's Syndrome), 9 (M) and 11 (F) years	Assisted skill acquisition Generalized strategies Transfer
Rodger, Ireland & Vun ++ Same children	2008	N=2, Autism (Asperger's Syndrome), 10-12 years (M) – social and organizational goals	Improvements to COPM – performance and satisfaction, PQRS, SSRS social skills Transfer
Rodger & Brandenburg ** Same children	2009	N=2, Autism (Asperger's Syndrome), 9 (M) and 11 (F) years – Motor goals	Improvements COPM, VABS, PQRS
Rodger, Pham & Mitchell ** Same children	2009	N=2, Autism (Asperger's Syndrome), 9 (M) and 11 (F) years – exploring children's use of CO-OP	
Phelan, Steinke & Mandich	2009	N=2, Autism (Asperger's Syndrome), 9 years, 10 years – motor goals	Improvement COPM, PQRS
Rodger & Vishram ++ Same children	2010	N=2, Autism (Asperger's Syndrome), 10-12 years (M) – social and organizational goals	Improvements to COPM, PQRS
Tomcheck, Koenig, Arbesman & Lieberman	2015	N=1, Autism, 17 years (M) – morning routine	
Skowronski & Engsberg	2017	N=1- CO-OP blended with VR – guideline development	Improved motor performance (not measured)
Wilson, Mandich, Magalhaes & Gain	2018	N=10, Autism, 15-21 years (M); CO-OP + concept mapping (Summer camp, group delivery, 6hrs/day, 4 weeks)	Develop occupational competence, relate better to others; improved sense of belonging; apply CO-OP approach;

CO-OP in practice



What does it look like?

Approximately 12 sessions

First session:

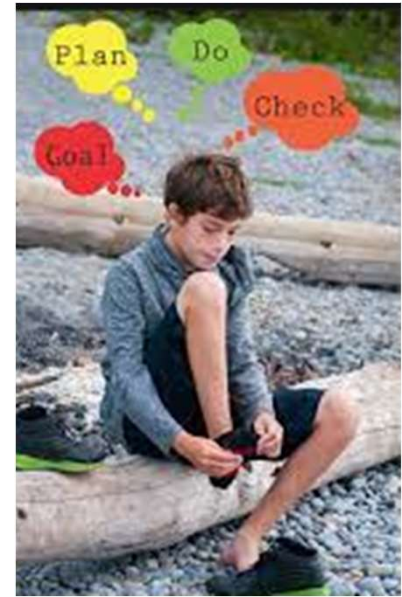
- Establish what CO-OP is with family/client
- Discuss parent involvement
- Set 3 goals using COPM, Daily Activity Log, Paediatric Activity Card Sort (PACS) or Perceived Efficacy and Goal Setting System (PEGS)
- Rate current importance, performance and satisfaction for each goal (pre-measurement)
- Demonstration of skills
- Rate Baseline performance of these skills using the Performance Quality Rating Scale (PQRS)



CO-OP Approach

Second Session:

- Introduce Goal Plan Do Check (GPDC)
- Introduce the puppet Captain Goal Plan Do Check
- Demonstrate Goal Plan Do Check with a familiar task

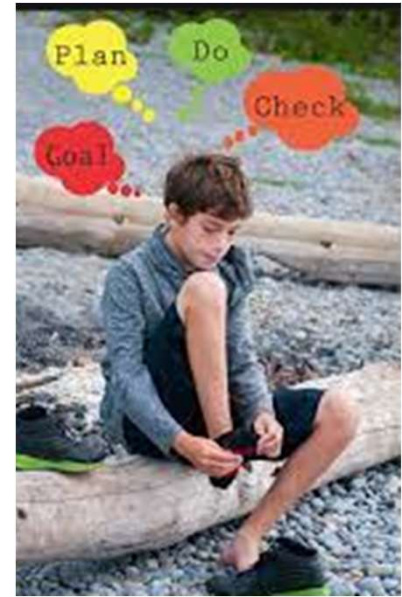


Video Goal Plan Do Check

CO-OP Approach

Sessions 3 – 11:

- Review each goal for 10- 15 minutes
- Cognitive Strategy Use (GPDC)
- Dynamic Performance Analysis (DPA)
- Guided Discovery e.g. focus on one thing at a time and “ask, don’t tell”



CO-OP Approach

- Last Session
 - Re-rate current importance, performance and satisfaction for each goal (post-measurement)
- Follow up session optional
- Parent involvement
- Independence, transfer and generalization

Case Study

- 7-year-old boy
- Loves science, space, microscope, books, enjoys learning about marine life and going to the aquarium, building things and moving around
- Attends Year 2 in a mainstream school
- Diagnosed with ASD and ADHD



Goal: Write “S” the right way around

Evaluating the acceptability and efficacy of Cognitive Orientation to daily Occupational Performance Approach™ (CO-OP) therapy for children on the autism spectrum

Dr Jess Reynolds, Dr Melissa Licari, Gemma Upson, Dr Elspeth Froude, Marie Rodatz, Briohny Dempsey



Department of
Education

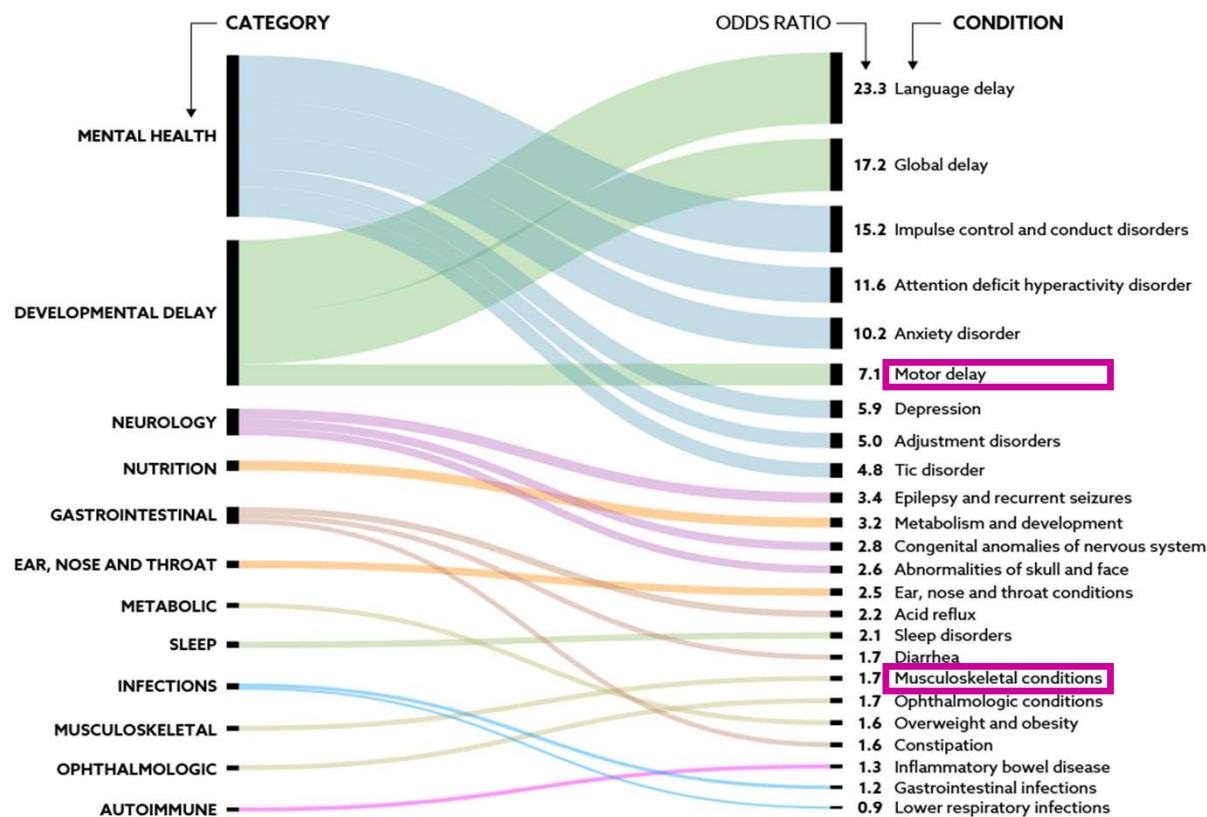
Motor Development



- Early delays in motor development are often one of the first signs an infant is on a pathway for altered neurodevelopment
- General motor difficulties are not currently considered within the diagnostic framework of autism spectrum disorder

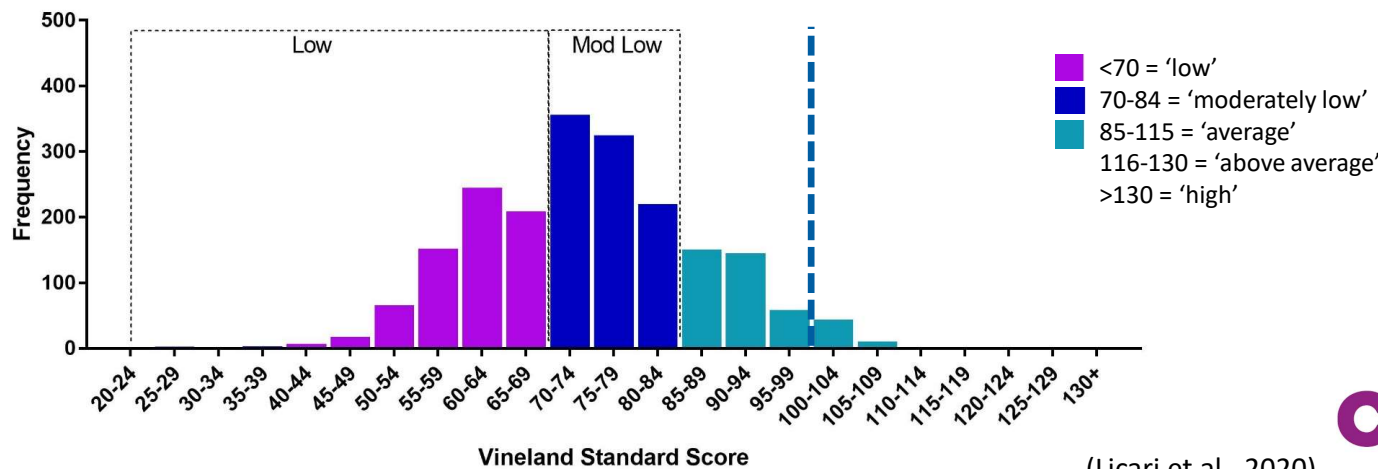


Co-occurring conditions



Rate of Motor Challenges

- 35.4% in the low range (≥ 2 SD) , 43.7% (≥ 1 SD) in the moderately low range
- 1.34% reported to have co-occurring motor condition by diagnosing clinicians



(Licari et al., 2020)

Aims

- The aim of this research is to establish the acceptability, feasibility, and efficacy of the CO-OP intervention program in children with autism aged 5-10 years:
 - Does the CO-OP program help children improve their chosen motor goals
 - Is the CO-OP intervention program acceptable to families and therapists?
 - Is CO-OP feasible to deliver?
- Secondary aims related to participation will also be measured

Study participants

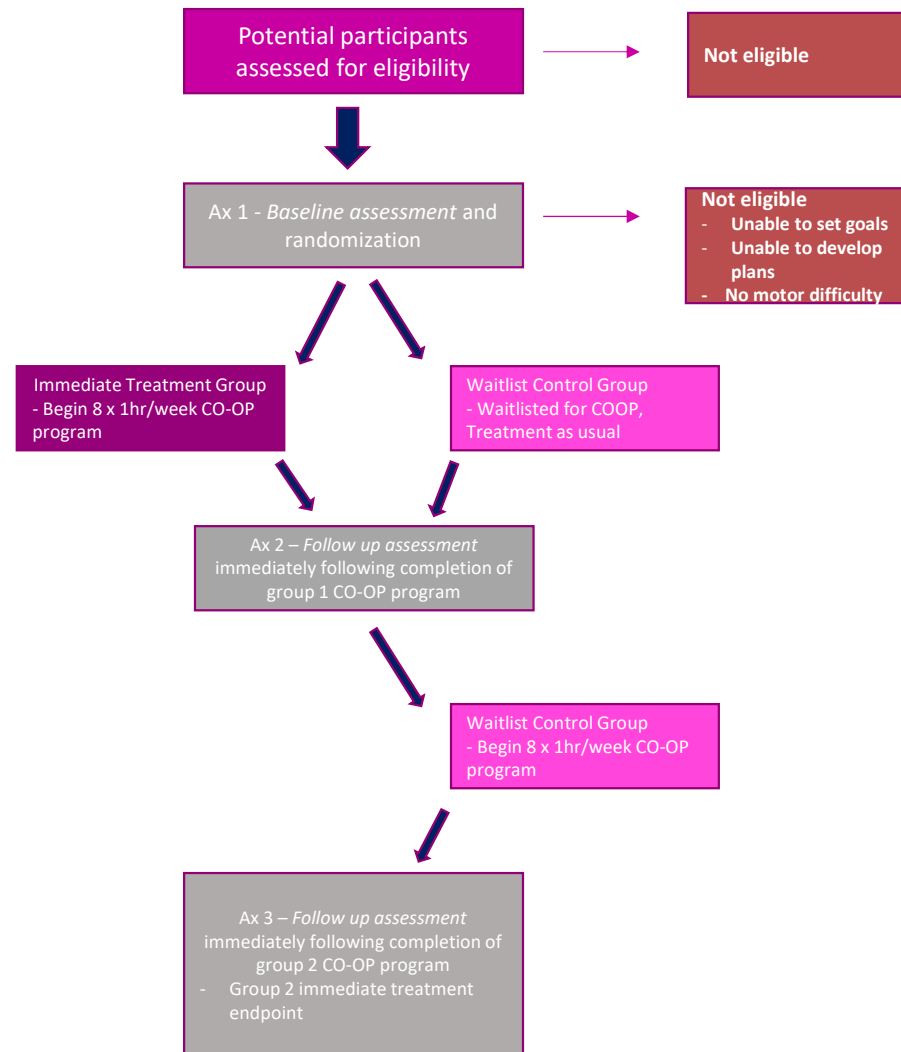
Inclusion criteria:

- a) Child aged 5-10 years
- b) A diagnosis of autism
- c) Motor difficulties, defined as:
≤16th percentile on the MABC-2
- d) Able to set own goals and as required by the CO-OP approach
- e) To the best of their knowledge, intending to remain in the Perth for the duration of the study

Exclusion criteria:

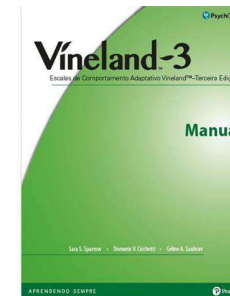
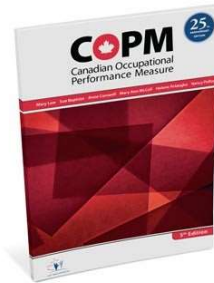
Participants will be excluded from the study if they meet the following characteristics:

- a) Intellectual disability that impacts capability to set own goals
- b) Inability to develop cognitive strategies and plans to achieve goals
- c) Have previously undertaken any form of CO-OP therapy



Baseline

- **Motor skills:**
 - MABC-2, DCD-Q
- **Goal setting:**
 - COPM
 - GAS
 - PQRS
- **Phenotypic profile:**
 - Family history questionnaire
 - SRS-2
 - Vineland-3
 - BRIEF-2
- **Participation:**
 - PEM-CY



CliniKiDS
Research into Practice

**TELETHON
KIDS
INSTITUTE**

CO-OP Therapy



- 8*1hr weekly sessions
- Working on three self-chosen motor-based goals
- GOAL-PLAN-DO-CHECK
- Home activities

Week ____

Goal 1: _____

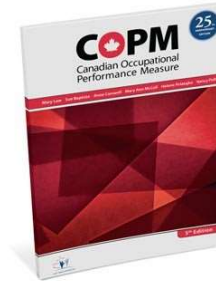
Plan: What will I do this week that will help me achieve my goal?

Practise 1		Practise 2		Practise 3		Practise 4	
DO: Did I do the plan?	CHECK: Did the plan work?	DO: Did I do the plan?	CHECK: Did the plan work?	DO: Did I do the plan?	CHECK: Did the plan work?	DO: Did I do the plan?	CHECK: Did the plan work?
Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

Ideas: _____

CO-OP Endpoint

- Goal progress (Efficacy):
 - COPM*
 - GAS
 - PQRS*
- Participation
 - PEM-CY**
- Acceptability:
 - Child, parent, clinician interview



CliniKiDS
Research into Practice

**TELETHON
KIDS
INSTITUTE**

Summary

Motor difficulties and CO-OP for children on the autism spectrum:

- Currently no gold standard evidence-based approach
- CO-OP may be effective
- Study progress and recruitment
 - **Recruiting for 2023!**

CO-OP Study



Do you have a child on the autism spectrum who has motor difficulties?

Cognitive Orientation to Occupational Performance (CO-OP) therapy encourages individuals to be involved in their own goal setting and to develop cognitive strategies to help them achieve tasks of everyday living such as handwriting or ball skills. This study is a randomised controlled trial that will assess the effectiveness of the CO-OP therapy for developing motor skills for children on the autism spectrum. This means you will be allocated to one of two conditions: (1) immediate individual CO-OP therapy; (2) waitlisted to receive CO-OP therapy.



What's involved?

The CO-OP program is a 10-week block, involving an initial goal setting session and movement assessment (both groups), eight weeks of one-hour CO-OP sessions (immediate CO-OP group), and a final session to assess outcomes (both groups). Waitlist participants will then commence CO-OP sessions.

There is no cost associated with this research.

Who can take part?

Children diagnosed with autism spectrum disorder:

- Aged between 5-10 years
- With motor difficulties (also assessed at the intake session)
- Without intellectual disability
- Can set own goals

For more information or to take part:

T | +61 8 6319 1266

E | clinikids.research@telethonkids.org.au

W | clinikids.org.au

CliniKIDS
Research into Practice

TELETHON
KIDS
INSTITUTE
Research into Practice

 **ACU**
AUSTRALIAN CATHOLIC UNIVERSITY


GOVERNMENT OF
WESTERN AUSTRALIA

Department of
Education

CliniKIDS
Research into Practice

TELETHON
KIDS
INSTITUTE



Do you have
a child on the
autism spectrum
who has motor
difficulties?

CO-OP Study



Cognitive Orientation to Occupational Performance (CO-OP) therapy encourages individuals to be involved in their own goal setting and to develop cognitive strategies to help them achieve tasks of everyday living such as handwriting or ball skills. This study is a randomised controlled trial that will assess the effectiveness of the CO-OP therapy for developing motor skills for children on the autism spectrum.

Who can take part? Children diagnosed with autism:

- Aged between 5-10 years
- With motor difficulties (also assessed at the intake session)
- Without intellectual disability
- Can set own goals

For more info or to take part:

P | +61 8 6319 1266

E | clinkids.research@telethonkids.org.au

W | clinkids.org.au

Ethics approval from UWA HREC (2021/ET000942)

CliniKiDS
Research into Practice

TELETHON
KIDS
INSTITUTE
Discover. Prevent. Cure.

 **ACU**
AUSTRALIAN CATHOLIC UNIVERSITY



Department of
Education

CliniKiDS
Research into Practice

TELETHON
KIDS
INSTITUTE

CO-OP Training

- <https://icancoop.org/>
- Free introductory course: <https://ot.utoronto.ca/continuing-education/coop/>
- **Australian course: <https://otaus.com.au/cpds/learn-the-coop-approach-October22-LCO1051>

Literature and reviews

- Missiuna, C., Mandich, A. D., Polatajko, H. J., & Malloy-Miller, T. (2001). Cognitive orientation to daily occupational performance (CO-OP) part I-theoretical foundations. *Physical & occupational therapy in pediatrics*, 20(2-3), 69-81.
- Polatajko, H. J., Mandich, A. D., Miller, L. T., & Macnab, J. J. (2001). Cognitive orientation to daily occupational performance (CO-OP) part II the evidence. *Physical & Occupational Therapy in Pediatrics*, 20(2-3), 83-106.
- Polatajko, H. J., Mandich, A. D., Missiuna, C., Miller, L. T., Macnab, J. J., Malloy-Miller, T., & Kinsella, E. A. (2001). Cognitive orientation to daily occupational performance (CO-OP) part III-the protocol in brief. *Physical & occupational therapy in pediatrics*, 20(2-3), 107-123.
- Houldin, A., McEwen, S. E., Howell, M. W., & Polatajko, H. J. (2018). The cognitive orientation to daily occupational performance approach and transfer: a scoping review. *OTJR: occupation, participation and health*, 38(3), 157-172.
- Scammell, E. M., Bates, S. V., Houldin, A., & Polatajko, H. J. (2016). The Cognitive Orientation to daily Occupational Performance (CO-OP): A scoping review: L'approche CO-OP (Cognitive Orientation to daily Occupational Performance): Examen de la portee. *Canadian Journal of Occupational Therapy*, 83(4), 216-225.
- Novak, I., & Honan, I. (2019). Effectiveness of paediatric occupational therapy for children with disabilities: A systematic review. *Australian occupational therapy journal*, 66(3), 258-273.

Do you have
a child on the
autism spectrum
who has motor
difficulties?

CO-OP Study



Cognitive Orientation to Occupational Performance (CO-OP) therapy encourages individuals to be involved in their own goal setting and to develop cognitive strategies to help them achieve tasks of everyday living such as handwriting or ball skills. This study is a randomised controlled trial that will assess the effectiveness of the CO-OP therapy for developing motor skills for children on the autism spectrum.

Who can take part? Children diagnosed with autism:

- Aged between 5-10 years
- With motor difficulties (also assessed at the intake session)
- Without intellectual disability
- Can set own goals

For more info or to take part:

P | +61 8 6319 1266

E | clinkids.research@telethonkids.org.au

W | clinkids.org.au

Ethics approval from UWA HREC (2021/ET000942)

CliniKiDS
Research into Practice

TELETHON
KIDS
INSTITUTE
Discover. Prevent. Cure.

 **ACU**
AUSTRALIAN CATHOLIC UNIVERSITY



Department of
Education

CliniKiDS
Research into Practice

TELETHON
KIDS
INSTITUTE