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# PEDro

## Physiotherapy Evidence Database

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### Welcome to the PEDro Newsletter for 4 December 2023

Thank you to [Chartered Society of Physiotherapy](#) who have renewed their partnership with PEDro for another year.

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### International Volunteers Day 2023 “If Everyone Did”!

Volunteers make an important contribution to PEDro for the benefit of the global physiotherapy community. We acknowledge and thank all 2023 [PEDro committee members, satellite centres, and rater volunteers across the world](#).

Interested in volunteering for PEDro?

<https://redcap.sydney.edu.au/surveys/?s=RF8LJJJJXHK373EP>

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## Infographic: Systematic review found that physical activity may improve cognitive functioning in people who had childhood cancer.

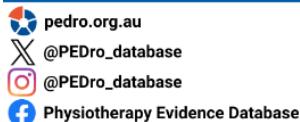
Last month we summarised the systematic review by Bernal et al 2023. The review concluded that physical activity may improve cognitive functioning in people who had childhood cancer.

Some findings are included in this infographic.

PHYSICAL ACTIVITY AND EXERCISE FOR CANCER-RELATED COGNITIVE IMPAIRMENT AMONG INDIVIDUALS AFFECTED BY CHILDHOOD CANCER	
Bernal JDK, Recchia F, Yu DJ, et al. Physical activity and exercise for cancer-related cognitive impairment among individuals affected by childhood cancer: a systematic review and meta-analysis. <i>Lancet Child Adolesc Health</i> . 2023;7(1):47-58.	
WHAT DID THEY DO?	FINDINGS
<b>Study design:</b> Systematic review and meta-analysis of 22 randomised, quasi-controlled and non-randomised studies.	Based on moderate certainty evidence, physical activity or exercise may lead to small-to-moderate improvements in cognitive function for people who had childhood cancer based on standardised performance measures compared with no intervention or usual care (SMD 0.40, 95% CI 0.07 to 0.73).
<b>Population:</b> 1,277 individuals affected by childhood cancer.	
<b>Intervention:</b> Any physical activity or exercise intervention delivered in any setting.	
<b>Comparator:</b> No intervention or usual care.	
<b>Outcome:</b> Cognitive function using performance-based academic or neuropsychological tests.	Mild adverse events were reported in 9 out of 127 participants (across 2 studies), which included minor wrist cut, muscle strain, nausea and dizziness.
Most of the studies investigated mixed-type (n=16) physical activity or exercise, including aerobic and strengthening exercise programmes (n=7). Others also included only aerobic-type (n=4), only strengthening (n=1) and coordinative-type (n=1).	

**Note:** Further long-term follow-up required.

**Physical activity and exercise may improve cognitive function among people who have been affected by childhood cancer**



Bernal JDK, Recchia F, Yu DJ, et al. Physical activity and exercise for cancer-related cognitive impairment among individuals affected by childhood cancer: a systematic review and meta-analysis. *Lancet Child Adolesc Health*. 2023;7(1):47-58. doi:10.1016/S2352-4642(22)00286-3

[Read more on PEDro.](#)

[Access the full summary in the PEDro blog.](#)

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**Systematic review found that progressive resistance exercise training increased muscle strength in people with cerebral palsy and was maintained for at least 11 weeks, when compared to no intervention.**

This systematic review aimed to estimate the effects of progressive resistance exercise compared to either no intervention or an alternative intervention on strength, activity, and participation outcomes in people with cerebral palsy.

Randomised controlled trials, pseudorandomised controlled trials, and randomised cross-over trials implementing progressive resistance exercise for people with any type of cerebral palsy were included. There were no age restrictions. Trials reported at least one aspect of training volume (e.g., sets, repetitions, load, session and program duration). The control group included either no intervention, usual care, or another intervention that did not involve progressive resistance exercise. Outcomes were muscle strength (primary outcome) in addition to one activity (e.g., Gross Motor Function Measure) and one participation outcome. Meta-regressions were calculated for program volume and program intensity against muscle strength. Adverse events were recorded. The PEDro scale was used to assess methodological quality of included trials to indicate high (>5), moderate (5) and low (<5) quality. GRADE was applied to each meta-analysis to evaluate certainty of evidence.

Sixteen clinical trials were included with 504 participants. Twelve trials included children and adolescents, 2 trials included adolescents and young adults, and 2 trials included adults. Progressive exercise was implemented using resistance machines, weight vests/backpacks, free weights, and/or isokinetic dynamometers. Duration of programs ranged from 6 to 16 weeks, typically 2-3 times per week at 20-40 mins per session. Exercise intensity was high (3 trials), moderate (12 trials) or low (1 trial). Trial quality was reported as high (9 trials), moderate (6 trials) and low (1 trial).

There was low certainty evidence that progressive resistance exercise improved muscle strength in people with cerebral palsy, when compared to no intervention (SMD 0.59, 95% CI 0.16 to 1.01; 11 trials). There was high-certainty evidence from 5 trials that the improvement in muscle strength was maintained at an average of 11 weeks after training ceased (SMD 0.40, 95% CI 0.12 to 0.68). There was moderate certainty evidence that there was no difference between progressive resistance exercise and no intervention for activity

(SMD 0.14, 95% CI -0.09 to 0.36, 8 trials) and participation (SMD 0.26, 95% CI-0.02 to 0.54, 6 trials). There was no relationship between progressive resistance exercise intensity or training volume on muscle strength. No serious adverse events were reported.

Progressive resistance exercise is safe and can increase muscle strength for people with cerebral palsy compared to no intervention. This increase in muscle strength does not appear to be related to exercise intensity or dose. No improvements in activity or participation measures were observed.

Bania TA, Taylor NF, Chiu HS, Charitaki G. "What are the optimum training parameters of progressive resistance exercise for changes in muscle function, activity and participation in people with cerebral palsy? A systematic review and meta-regression. *Physiotherapy* 2023;119:1-16.

[Read more on PEDro.](#)

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## PEDro resources

### PEDro training

PEDro offers an online, self-paced training program for using the PEDro scale to rate randomised controlled trials. Access training at: <https://training.pedro.org.au/>

### PEDro World-Wide Journal Club

Interpret evidence with the experts through 5-steps. [See the PEDro World-Wide Journal Club resources.](#)

### Searching PEDro

Enhance your searching skills to answer your clinical question. [See the tips and videos from the YouAsk#PEDroAnswers campaign.](#)

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## PEDro update (4 December 2023)

[PEDro](#) contains 60,363 records. In the 4 December 2023 update you will find:

- 46,229 Reports of randomised controlled trials (45,034 of these trials have confirmed ratings of methodological quality using the PEDro scale)
- 13,360 reports of systematic reviews, and
- 774 reports of evidence-based clinical practice guidelines.

For latest guidelines, reviews and trials in physiotherapy visit [Evidence in your inbox](#).

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## DiTA update (4 December 2023)

[DiTA](#) contains 2,444 records. In the 4 December 2023 update you will find:

- 2,172 reports of primary studies, and
- 272 reports of systematic reviews.

For the latest primary studies and systematic reviews evaluating diagnostic tests in physiotherapy visit [Evidence in your inbox](#).

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## Next PEDro and DiTA updates (February 2024)

The next [PEDro](#) and [DiTA](#) updates are on 5 February 2024.

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