

Article Title

Comparison of sports skills movement training to lower limb strength training for independently ambulatory children with cerebral palsy: a randomised feasibility trial

Article Citation

Hilderley, A.J., Fehlings, D., Chen, J.L., & Wright, F.V. (2020). Comparison of sports skills movement training to lower limb strength training for independently ambulatory children with cerebral palsy: a randomised feasibility trial. *Disability and Rehabilitation*, 1-9.
<https://doi.org/10.1080/09638288.2020.1851779>.

Adaptive Sport/Recreation Categories

- Sports Skills
- Strength training
- Cerebral palsy

Study Type: Randomised feasibility trial

Summary

We currently do not know the best intervention to improve sports skills in ambulant children with cerebral palsy (CP). This study aimed to assess trial feasibility and compare initial estimates of effectiveness of two interventions, in improving physical activity participation and advanced gross motor skills of children with CP. Twenty ambulant children with CP (mean age 12 ± 2.6 years) were randomly assigned to the 6-week programme of BeFAST (Brain change after Fun, Athletic Sports skills Training), a motor learning based sports skills training intervention; or BeSTRONG (Brain change after Strength Training focusing ON Gait), a conventional lower limb strength training intervention. The one-on-one programmes were delivered for 45 minutes 2-3 times each week and were individualised to each participant's goals and preferences. Results found there was no significant between-group difference for the *Challenge*, a performance-based assessment. with significant post-intervention improvements observed in the BeFAST group. However, a significant difference was observed favoring the BeFAST group when comparing the COPM Performance scores of the two groups at post-intervention, and relative gains were maintained 4-month post-intervention. The trial indicated sports skills training were feasible and may be a more effective option to target individualized, specific skills and goals. A randomized trial may be planned.

Article Strengths

- Protocol easily understood
- Supplement provided example of programmes
- Multiple feasibility measures were conducted including consideration of recruitment, retention, acceptability, safety and perceived benefits
- Trial found a RCT was feasible which was a valuable process
- BeFAST was well accepted by clinicians and participants

Article Weaknesses

- Use of Goal Attainment Scoring (GAS) was not well explained

Reviewer: Gaela Kilgour, PT
February 2021

AACPDM Adapted Sports/Rec Committee
Journal Article Digest Sub-Committee

- Goal distribution was unequal with more focus on sports skills (62%) compared to strength based (25%)
- Loading, dosage and length of strength training programme may not have been high enough to facilitate change
- 1:1 programme may not be as feasible due to costs and staffing
- Real world community context may need to be considered
- Multiple measures were conducted for endurance, activity levels, participation and self-efficacy and found not significant. The authors state many measures were not completed or could not be completed and discuss participant burden

Take Home Messages

- The randomized feasibility trial was valuable to compare the conventional intervention of strength training to sports skills training and to consider future research direction
- Outcome measures should be carefully considered to prevent participant burden
- Individualised targeted sports training may result in higher goal attainment and improvements in specific sports skills

Impacts on Clinical Practice:

- Sports training can be individualized and developed to meet participants goals
- Clinicians should use the most pertinent outcome measures to the intervention
- Sports skills training should consider and progress to real world context