Task-specific gross motor skills training for ambulant school aged children with cerebral palsy: a systematic review

Rachel Toovey 1,2, Charmaine Bernie 3, Adrienne R. Harvey 2,3, Jennifer L. McGinley 1, Alicia J. Spittle 1,2

1 Department of Physiotherapy, University of Melbourne, 2 Murdoch Children’s Research Institute, 3 Neurodevelopment & Disability, The Royal Children’s Hospital, Melbourne

OBJECTIVES

Task-specific training (TST) involves practice of context-specific tasks focused on the skills needed for functional tasks. Primary aim: To systematically evaluate the evidence for the effectiveness of task-specific gross motor training on activity and participation outcomes in ambulant school aged children with cerebral palsy (CP).1

Secondary aim: To identify motor learning strategies reported and assess relationship to outcome.

METHODS

Medline, EMBASE, CINAHL, PsycINFO, SPORTDiscus and Pubmed were searched and screened by two independent reviewers for studies involving:

1. Level II-IV group design studies using level I single-subject designs (n > 10) the AACPDM levels of evidence
2. Children with CP (mean age 4 - 18 years, > 60% ambulant)
3. TST targeting gross motor skills
4. TST vs comparison, another type of TST or no comparison
5. Activity outcomes related to specific skill performance, gross motor function and functional skills, and participation-related outcomes

Quality assessment:

- Level of evidence
- Risk of bias
- Intervention replicability

Quality / quantitative synthesis: Outcomes were reported by level of evidence and study design. Meta-analyses were precluded by heterogeneity. Continuous data were summarised for level II studies using SMD and 95% CI.

RESULTS

2311 studies screened based on title and abstract
1247 studies screened based on full-text eligibility
145 studies assessed for full-text eligibility
13 studies included in qualitative synthesis
6 studies included in quantitative synthesis

Conclusions

Limited evidence for TST for gross motor skills in ambulant children with CP exists for improving activity and participation-related outcomes. Recommendations for use over other interventions are limited by poor study methodology and heterogeneity in interventions and outcomes. In order to enable specific recommendations, strengthening the evidence base is imperative.

REFERENCES / NOTES


Results and tables are provided in the main text and supplementary materials.