

Conclusion: PD patients demonstrate significant ankle muscle weakness. The deficit in muscle force production is influenced by contraction type, angular speed and joint range. Exaggerated weakness is found in concentric contraction of ankle plantarflexors, particularly when the angular speed is high and the muscle is in the shortened range. The results are useful in guiding the design of muscle strength training program for individuals with PD.

doi:10.1016/j.hkpj.2011.08.026

Immediate Effect of Functional Electrical Stimulation to Activity in Children and Adolescents with Cerebral Palsy: A Systematic Review

H. C. Chiu, PhD^a, L. Ada, PhD^b

^aDepartment of Physical Therapy, I-Shou University, Taiwan

^bDiscipline of Physiotherapy, The University of Sydney, Australia

Background and Purpose: Functional electrical stimulation training is defined as a task-specific manner, in which a muscle is stimulated when it should be contracting during a practicing an activity, such as sitting, sit to stand, walking or reaching and manipulation. The purpose of this systematic review is to determine the effect of functional electrical stimulation as an intervention to improve activities in children and adolescents with cerebral

palsy, activities during functional electrical stimulation are thoroughly assessed with the use of congruent outcome measures in this review.

Methods: The study design consisted of a systematic review of randomized trials using Cochrane Collaboration guidelines. Participants were children and adolescents with cerebral palsy. Intervention included functional electrical stimulation training that involved electrical stimulation during practicing an activity, such as sitting or walking. Outcome measures had to include a measure of activity as congruent task during functional electrical stimulation, e.g., speed as general condition, and step width as specific condition.

Results: After being assessed against the inclusion criteria, four randomized controlled trials were included in the review. The between-group differences are reported in terms of percentage benefit. Immediate effect of functional electrical stimulation on general condition increased by 5–32% and on specific condition by 18–51% compared with no intervention.

Conclusion: There is limited evidence about the immediate effect of functional electrical stimulation in children with cerebral palsy. The available evidence suggests that immediate effect of functional electrical stimulation may exist in specific condition, but that there is little carryover into general condition.

doi:10.1016/j.hkpj.2011.08.027
