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Background

Therapy goals for children with conditions such as cerebral palsy, peripheral neuropathy, developmental coordination disorder, and brain tumors include promoting participation with friends and family, improving walking and running activities, and addressing impairments of body functions and structures including decreased muscle strength and extensibility, endurance, balance, and coordination - while having fun.



Objectives

To share the first observations of scootering as a functional exercise in children and adolescents with and without limitations in walking through motion analysis.

Participants

The participants were a case series of ten children/ and adolescents; five typically developing and five with walking limitations due to cerebral palsy or peripheral neuropathy.

Methods

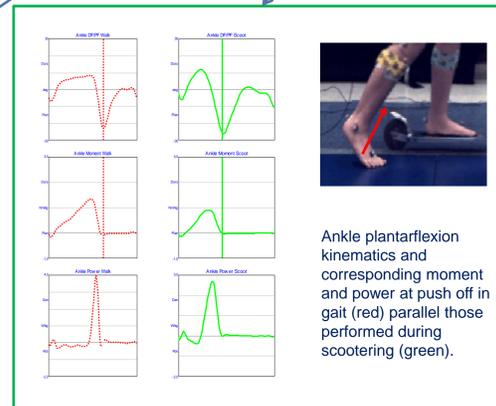
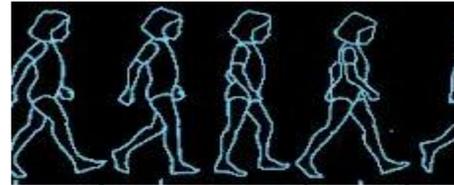
Kinematic, kinetic, electromyographic, and video analyses were used to examine walking and scootering.

Fitness



Scootering has been identified as having energy expenditure levels similar to bicycling (Ridley et al., 2008) and is effective in stretching and strengthening many muscle groups.

Function

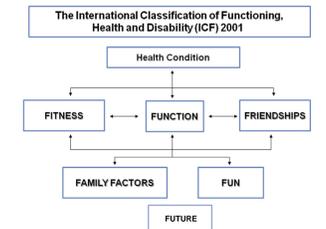


Friends



Analyses

Observations were categorized within the "F Words"/ICF framework. (Rosenbaum & Gorter, 2012)



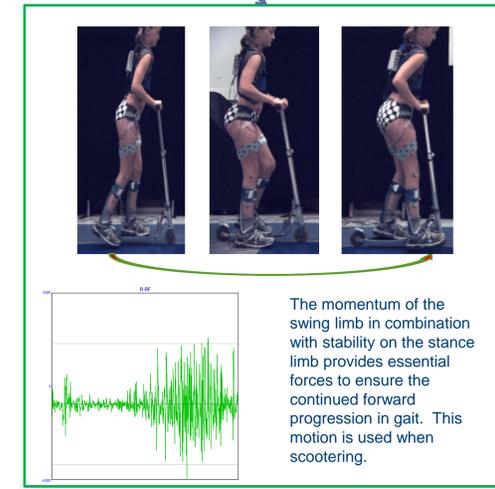
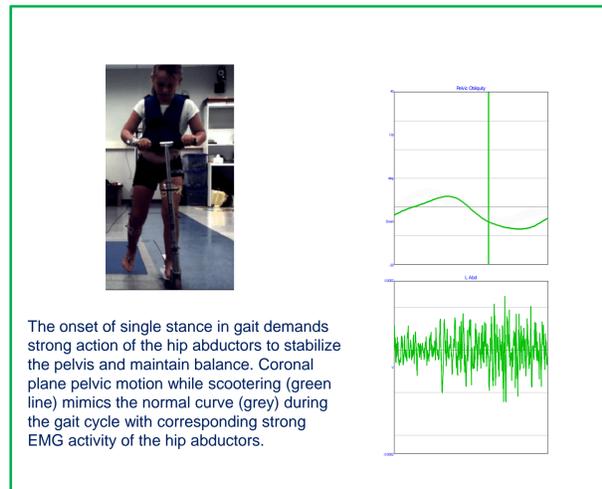
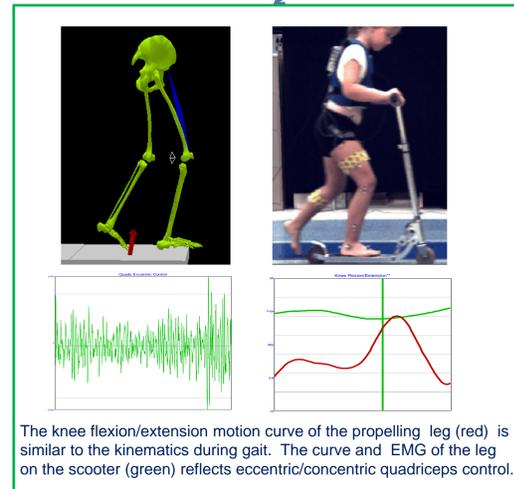
Results

Many of the movement characteristics identified in the activity of scootering reflected desirable gait attributes that are addressed in gait training for children/youth with motor problems. These included shock absorption through eccentric quadriceps activity, propulsion and push-off, clearance in swing phase, balance, stance/swing limb coordination, the muscle activity associated with pelvic stability, and endurance/fitness.

Conclusions

These findings suggest that scootering has the potential to address many body function and structure impairments associated with the activities of walking and running. It is a fun activity that is relatively easy to learn and is inexpensive. Scootering can be done indoors or outdoors; individually or with friends and family, providing opportunities for participation and boosting of confidence and self-esteem. There are opportunities for further investigation of this activity, in a systematic manner in children with and without disabilities. Safety must be considered.

Ridley K., Ainsworth B.E., Olds T.S. (2008) Development of a compendium of energy expenditures for youth. International Journal of Behavioural Nutrition and Physical Activity. 5:45. doi:10.1186/1479-2875-5-45.
Rosenbaum & Gorter. (2012) The "F-words" in childhood disability: I swear this is how we should think! Child Care Health Dev. 38:457-63.



Family



Fun



**Practice
Safe
Scootering**

