ENHANCING ROBOTIC GAIT TRAINING VIA AUGMENTED FEEDBACK.

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ABSTRACT

Recent work has examined the feasibility of robotic-assisted gait training in pediatric patients, including children with cerebral palsy (CP). Herein we present a case series describing clinical outcomes in four children with CP who underwent gait training using a robotic driven gait orthosis (DGO) (Pediatric Lokomat©). Children had a diagnosis of spastic diplegia due to CP. They were paired based on functional abilities and observed gait characteristics. Two children had a GMFCS of III and showed excessive ankle plantarflexion during stance. The other two children had a GMFCS of II and displayed a crouch gait pattern. Each subject participated in a 6-week intervention of robotic-assisted gait training that involved three 30-minute sessions per week. Pre- and post-training evaluations were performed including clinical tests of standing and walking function, walking speed, and walking endurance. Clinical gait analysis was also performed using a motion capture system to assess changes in gait mechanics. All subjects showed an improvement in locomotor function. For lower functioning children, this may be mediated by improved trunk control. The use of augmented feedback was associated with larger. However, these results have to be considered with caution because of the limited sample size of the study.