PWB Treadmill Training For Spastic Diplegia
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PICO Question
Does PWB treadmill training (PWBTT) result in increased gait speed for a child with spastic diplegia?

Findings
- PWBTT increased the gait speed over 10 meters for 7 children with CP, 2 of which had spastic diplegia.2
- PWBTT decreased double-limb support time & increased stride length of 8 children with spastic CP3
- A systematic review did not find a significant difference for PWBTT for kids with CP.9
- PWBTT combined with PT allowed a child with spastic tetraplegia to walk for the first time and independently at a speed of 1.3 mph.10

Background
- Spastic diplegia is the most common form of Cerebral Palsy, accounting for 76.9% of cases diagnosed in the United States.4
- Children with spastic diplegia exhibit with increased tone in limbs, more prominently in the lower extremities, delayed motor skill or motor milestones, and a toe in or "scissoring" gait.5
- The gait of an individual with spastic diplegia is much less effective and cumbersome that a normally developed patient.9
- The altered gait affects not only the functional ability of the child, but further differentiated them from his classmates affecting the social and mental well-being of spastic diplegia children.

Can increase neuroplastic activity to facilitate stand to swing phase support.

Can improve D and E dimensions in the GMFM.

Harness decreases fear of falling, reducing muscle tone.

Allows children with CP to practice rhythmic efficient walking patterns.

Future Research Needed
- Optimal gait speed intervention parameters for frequency, intensity, duration, and volume of training.6
- Longevity of effects after completing a walking program.8
- Whether gait speed improvements effect secondary impairments associated with CP.7
- Determine PWBTT is optimal at a certain age or severity for spastic diplegia.

References
2. Dodd, Karen J, Foley, Sarah. Partial body-weight-supported treadmill training can improve walking in children with cerebral palsy: a clinical controlled trial. Developmental Medicine and Child Neurology; Feb 2007; 49, 2; ProQuest pg 101