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Does combining body weight support treadmill training with Thera-Band® improve hemiparetic gait? A case report

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The purpose of this single subject case report was to explore the use of Thera-Band® Elastic Band in combination with body weight support treadmill training during locomotor training of a person with chronic stroke. Inclusion and exclusion criteria were established and Institutional Review Board approvals were obtained. During training, the Thera-Band® was configured around the subject's hemiparetic leg in a figure-8 fashion and attached to the harness of the body weight support; its purpose was to assist with hip, knee and ankle dorsiflexion during swing and proper foot placement during stance, avoiding excessive inversion. The protocol consisted of three, ten-minute intervals with five-minute rest periods in between, three times per week for a total of ten weeks. Outcome measures included fast gait speed, spatiotemporal variables of gait, endurance and ankle eversion strength. Data collection occurred at baseline, weeks five and ten and six weeks post intervention. All 90 training trials were completed. Mean gait speed increased from 0.625 m/s at baseline to 1.10m/s at week sixteen. Gait distance increased from 191m at baseline to 367 m at week 16; ankle eversion strength increased from 4.67 ± 0.45 to 5.90 ± 0.59 force/Kg. GAITRite data demonstrated a more symmetrical gait pattern, with a more equal step length and stance time when comparing left and right limbs, and an increased stride length bilaterally. The results of this case report demonstrated significant improvement in the fast walking speed, gait endurance, gait symmetry and spatiotemporal gait variables and ankle eversion strength. Several limitations and suggestions for further research were identified.

Biography

Diana Veneri is an Associate Professor at the University of Hartford, teaching the adult neurologic rehabilitation content. She earned her Neurology Clinical Specialist credentials in 2008 and is currently serving as a Clinical Content Expert for the Specialization Academy of Clinical Experts (SACE). She earned her EdD from the University of Hartford. She has been a physical therapist since 1986.

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