

## **Improvements in Life-Role Participation after Intensive Gait Training of Chronic Stroke Survivors.**

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**Background:** There is a dearth of studies showing that gait training can produce gains in the gait pattern that are sufficiently robust to also produce gains in quality of life (that is, measures of life role participation). Additionally, there is a dearth of studies regarding response to treatment by those in the chronic phase after stroke. Therefore, our objective was to evaluate whether intensive gait therapy could result in improvements of life role participation in chronic stroke survivors.

**Methods:** We analyzed data from a 47-member cohort of stroke survivors who had enrolled in a randomized controlled trial of gait treatment interventions. Subjects were chronic stroke survivors (>6 months) with persistent gait deficits. All subjects were treated for 1.5 hours/day, 5 days/week for 12 weeks, and received comprehensive gait training that included coordination exercises, bodyweight supported treadmill training, and over ground gait training. Subjects received these interventions either with or without functional electrical stimulation. The primary outcome measure was the Craig Handicap Assessment & Reporting Technique (CHART, a life-role participation measure). Secondary measures were the Functional Independence Measure (FIM) and Tinetti Gait (TG, a measure of coordinated gait components). Pre-/post-treatment comparisons were made using the Wilcoxon Signed Rank test and PoLytomous Universal Models ordinal regression analysis. Presence of heart disease was identified from history and physical at study enrollment. Percent improvement in FIM and CHART was calculated for the subsample of those with heart disease.

**Results:** The gait interventions produced a statistically significant improvement in life role participation (the CHART measure;  $p=0.044$ ), function (FIM;  $p=0.0001$ ), and coordinated gait components (TG;  $p=0.0001$ ). Heart disease was identified in a sub-sample of 5 subjects at entry into the study. This sub-sample exhibited an average of 50 points gain on CHART and 10 points gain on FIM measures, in response to treatment.

**Conclusions:** Life role participation for chronic stroke survivors improved in response to intensive gait therapy. Chronic stroke survivors can continue to benefit from gait therapy even in later stages after stroke. The presence of heart disease did not preclude gains in function or gains in participation in life role activities (CHART) in response to intensive gait therapy.