Intensive Goal-Directed Treatments in Enriched Environments Augments Patient Outcomes Post-Stroke

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OBJECTIVE

• Previous research indicates that patients post-stroke take an inadequate amount of steps (400-800 steps per session) and work at inadequate intensities (24-35% of HR Max) to promote neuroplastic changes and maximize recovery.2,4,6,8

• Research indicates that medically stable individuals can safely begin gait training earlier after a stroke and have better outcomes than individuals that start training later.4,13,14

• The goal of this study was to examine feasibility and outcomes of high-intensity, high-dosage stepping practice for individuals after stroke in the inpatient rehabilitation setting.

METHODS

• 21 patients post sub-acute stroke (<6 months)

• Standardized outcomes assessed weekly:
  • 6-Minute Walk Test (6MWT)
  • 10-Meter Walk Test (10MWT)
  • Berg Balance Scale (BBS)
  • Postural Assessment Scale for Stroke (PASS)

• Steps were collected with step activity monitors, and intensity was monitored and collected with heart rate monitors and BORG Rate of Perceived Exertion Scale (RPE).

• Target intensity was defined as:
  • Heart rate values of 70-85% of HR Max and RPE values of 14-20.
  • Each subject was scheduled for 1-2 hours of physical therapy per day.

RESULTS AND CONCLUSIONS

• Stepping data indicated that subjects received an average daily stepping dosage of 2000-8000 steps per day, well above previously reported values.

• During the 2-month collection period, subjects demonstrated ability to tolerate a high-intensity, high-dosage stepping gait training program within the intensities defined.

• Individuals within this program took >750% more steps and worked at the target intensity level (70-85% of HR max) >650% more frequently than currently seen in stroke inpatient units across the United States.

• Individuals within this program showed improvements in 6-Minute Walk Test and Berg Balance Scale scores, of approximately 2x more than reported levels of significant clinical change.

• Analysis of collected stepping and intensity data showed a positive correlation of both increased stepping and intensity levels when compared with improvements in 6-Minute Walk Test.

REFERENCES


