STROKE
SPECIAL INTEREST GROUP
Academy of Neurologic Physical Therapy

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- ***NEW*** Article review. Walk the Talk: Current Evidence for Walking Recovery After Stroke, Future Pathways, and a Mission for Research and Clinical Practice
- Nominations closed. Voting opening soon
- Seeking volunteers
- Register for the town hall event for Educators, sponsored by Evidence Elevates, Moving Forward Task Force

STROKE SIG ARTICLE REVIEW
Academy of Neurologic Physical Therapy

Stroke SIG weekly article review summary.

Thank you Daniel Dray!

Summary topic title: Walk the Talk: Current Evidence for Walking Recovery After Stroke, Future Pathways, and a Mission for Research and Clinical Practice

Article reference: Moore SA, Boyne P, Fulk G, Verheyden G, Fini NA. Walk the Talk: Current Evidence for Walking Recovery After Stroke, Future Pathways and a Mission for Research and Clinical Practice. Stroke. 2022;53(11):3494-3505. doi:10.1161/STROKEAHA.122.038956

Link to abstract: https://pubmed.ncbi.nlm.nih.gov/36069185/

Purpose of article: In this review, the authors explore the state of the current science and practice of walking recovery after stroke, considering both walking capacity and performance.

Defining Walking Recovery: Capacity is the ability to execute a task or action, at a given moment, and is typically assessed in a structured, clinical or research laboratory environment (ex. 6mWT, 10mWT). Performance describes what a person does in his/her current environment, including the societal context, and thus performance can be considered the real-life behavior, and could even be considered more important than capacity. Language of the WHO'S ICF model should also be used as it encompasses aspects

of gait recovery important to stroke survivors, including personal/environmental factors.

Measuring Walking Recovery: Stroke survivors report independence, speed, endurance, and quality are all important aspects of gait recovery. The 10-meter walk test (10MWT), 6-minute walk test (6MWT), and Functional Gait Assessment (FGA) are recommended capacity-based measures. Steps taken per day as measured by a wearable device can be used to measure walking performance. Limitations to activity monitors in the stroke population have been noted. Accuracy of these monitors has not been established in the real world. At present, there is no consensus on use of self-report questionnaires for walking recovery after stroke.

Classifying and Predicting Walking Recovery: Steps/day can be used to classify walking ability, with 100-2499 steps/d classified as home ambulator, 2500-7499 steps/d classified as limited community ambulator, ≥7500 steps/d classified as unlimited community ambulator. These values have a direct correlation to 6MWT performance (≤205 meters, 206-287 meters, and ≥288 meters). Gait speed could also distinguish between these categories (≤0.49, 0.50–0.93, and ≥0.94 m/s), but it was not as accurate as the 6MWT.

There are numerous capacity-based prediction measures (trunk control, balance, strength measured <1- month post CVA, younger age, continence, stroke location, severity, and lesion size, and hemianopsia), but where the field is especially lacking is in performance-based prediction measures, and further research should be focused here.

Walking Recovery Interventions: Best practice guidelines currently focus on improving capacity measures. They strongly recommend tailored, repetitive, task-oriented practice of walking delivered in a variety of forms including treadmill training with/without body weight support, circuit class training and cardiorespiratory fitness training. The principle of dose is included via the repetitive nature of the practice. Intensity is also emerging as an important factor in walking recovery as evidenced by its inclusion within the ANPT Clinical Practice Guidelines. When individuals cannot walk independently, or would not otherwise practice walking, electromechanically assisted gait training is weakly recommended. Behavior-change techniques (goal setting, barrier identification, social support, and self-monitoring) show promise when used to target walking performance.

Future Research Directions: Optimizing intensity of training, neuromodulation (TMS, deep brain stimulation), targeting biomechanical impairments, and enhancing motor learning (via virtual/augmented reality) show promise in improving walking capacity after stroke. Behavior-change techniques using mobile technologies, ecological momentary assessments, and telerehabilitation could be used to improve walking performance.

Future research should be guided in partnership with stroke survivors and their caregivers' preferences. This will enable the development of targeted interventions that: encompass the best available evidence (why?); are personalized (who?); are delivered at the right time (when?); address environmental factors (where?); are at the appropriate dosage (how much?); use appropriate forms of delivery (how?); allow for tailoring (tailoring?); and can be delivered as intended (how well?). Standardized capacity and performance outcome assessment and more robust systems for data pooling are required to inform clinical practice. International collaboration in the field of stroke gait recovery is growing but should continue to advance to allow larger, more generalizable studies, and aid consensus-based recommendations.

Implementation of Current Best Evidence: Current recommendations for therapy delivered to stroke survivors are frequently not met, with low doses of balance and walking practice observed within sessions, and minimal walking practice outside of therapy**.** Units structured so timetables enable increased practice appearing the most successful in terms of meeting recommended levels of dose. Applying a common language to walking recovery and standardizing measurement of both walking capacity and performance are recommended. Investing in people could aid the implementation of research via: adequate staffing; research-informed teaching at undergraduate level; and the development of adequately funded stroke recovery clinical/academic/career pathways to aid translation of research to practice. Creation of environments in stroke units/rehab facilities that enable walking practice, allow space for use of outcome measures, and replicate real-world walking are important. There will always be a limit to the amount of face-to-face therapy, so it is essential that stroke survivors are supported to self-manage walking practice. Maximizing

use of technology can also create a positive impact on walking recovery post-stroke.

Additional References:

-ANPT: Locomotor Training CPG Resource Page: This page has an abundance of information/resources for clinicians interesting in implementing HIT in their clinic. https://neuropt.org/practice-resources/anpt-clinical-practice-guidelines/locomotion

-ANPT National Campaign: Intensity Matters: Includes clinical resources and a summary of supporting evidence. https://neuropt.org/practice-resources/best-practice-initiatives-and-resources/intensity_matters
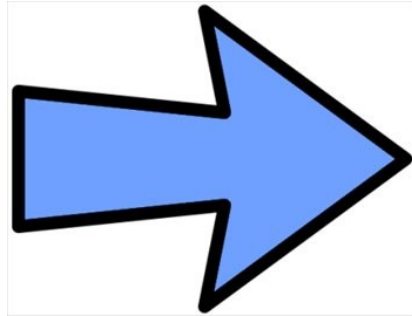
Voting soon

JOIN OUR TEAM!
Volunteer with one of our initiatives!

Clinicians can volunteer for:
- Stroke Corner (read research)
- Student Corner (build informative content or answer questions)

Students can volunteer for:
- Student Corner (helping clinicians with videos or facilitating talks with students)
- Social Media (spread the word!)

Virtual town hall event for Educators

"Join us for a live, virtual town hall event: Tuesday April 18, 2023 7:00 PM–8:00 PM EST The Moving Forward Taskforce will be hosting a virtual town hall for educators in academic settings working to address the 2021 President's Perspective "Moving Forward" published in the JNPT in 2021. The event will host a panel of 4 educators who are in various stages of change within the programs that they work. The panel will briefly share their own experiences and key take-aways; followed by a moderated Q&A session. Unable to make the live event? Multiple ways to catch up will be available after the event:

Space is limited! Pre-Registration is required and can be completed online: https://us06web.zoom.us/meeting/register/tZcrduGvpzgtG9Cw8AEA9rEI-XmZLHfwWx1p
Have questions you are already thinking about? Pre-submit them before April 15 the with this survey : https://www.surveymonkey.com/r/FLSMWBZ""

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