Febraury 6, 2023

STROKE SPECIAL INTEREST GROUP

Academy of Neurologic Physical Therapy

In this newsletter...

Completed by: Daniel Dray, PT, DPT, NCS
Thank you Daniel for your time and expertise.

Summary topic title: The effect of time spent in rehabilitation on activity limitation and impairment after stroke: a Cochrane systematic review
Article reference: Clark B, Whitall J, Kwakkel G, Mehrholz J, Ewings S, Burridge J. The effect of time spent in rehabilitation on activity limitation and impairment after stroke. Cochrane Database Syst Rev. 2021;10(10):CD012612. Published 2021 Oct 25. doi:10.1002/14651858.CD012612.pub2
Link to full article if available:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8545241/
Definition(s): For this review, the authors defined stroke rehabilitation as any non-pharmacological, non-surgical intervention that aimed to improve activity after stroke. This review adopted an 'intervention agnostic' approach, not seeking if one type of rehabilitation is superior to another, but rather the specific effect of time spent in rehabilitation.
Background and purpose of article: One aspect of stroke rehabilitation that may affect outcomes is the amount of time spent in rehabilitation, including daily session duration (minutes/day), frequency (days/week), and total treatment duration. The purpose of this review was to investigate whether increased time spent in rehabilitation resulted in greater improvements in

activity limitations and impairments after stroke.
Some clinical practice guidelines recommend specific amounts of time that should be spent in rehabilitation. These guidelines all suggest a minimum daily session duration (minutes/day) of rehabilitation that should be provided and a suggested frequency of rehabilitation (days/week). They do not all suggest a total treatment duration.

The effect of time spent in rehabilitation poststroke has been explored extensively, but the results are inconsistent. Most of these studies differ in type of rehabilitation provided as well. The authors consider their review important in order to determine if the clinical guidelines that recommend a specific minimum amount of time spent in rehabilitation after stroke have an evidence base.

Methods: The authors searched 12 databases for randomized controlled trials of adults with stroke that compared different amounts of time spent in rehabilitation. Studies varied only in the amount of time in rehabilitation between experimental and control conditions.
The primary outcome investigated was ADL outcomes. Secondary outcomes included activity measures of the upper limb, activity measures of the lower limb, motor impairment measures of the upper limb motor impairment measures of the lower limb, and serious adverse events (SAE)/death.

Results of interest: This review comprised 21 RCTs, involving analyzed data from 1412 participants.

Time in rehabilitation for intervention groups varied between studies. Minutes per week were 90-1288. Days per week of rehabilitation were 3-7. Duration of rehabilitation was 2 weeks-6 months. The median difference in minutes of rehabilitation per day between control and intervention groups was 30 minutes.

Thirteen studies provided upper limb rehabilitation, five general rehabilitation, two mobilization training, and one lower limb training. Sixteen studies examined participants in the first 6 months following stroke, the remaining five included participants >6 months poststroke. The risk of bias assessment suggests there were issues with the methodological quality of the included studies.
The authors found that, for measures of ADLs (e.g. washing and dressing), activity measures of the arm (e.g. picking up an item), and activity measures of the leg (e.g. walking) there was neither harm to nor benefit for groups that received more rehabilitation compared with groups that received less. For measures of movement of the arm and leg (e.g. strength or range of movement), there was a small benefit from receiving more rehabilitation. There was no evidence for increase in SAE/death with more rehabilitation, however few studies monitored this outcome.

Discussion, take home message:
An increase in time spent in the same type of rehabilitation after stroke results in little to no difference in meaningful activities such as ADLs and activities of the upper and lower limb, but a small benefit in measures of

motor impairment (low- to very low-certainty evidence for all findings). However, when the authors compared only the studies that had a bigger contrast between control and intervention groups, there was a beneficial effect from additional therapy in terms of ADLs, activity measures of the arm and leg, and movement measures of the arm. This suggests that people with stroke need a large amount of extra rehabilitation, past a certain threshold, for it to significantly improve outcomes. The findings of this review are limited by a paucity of research trials with large contrasts in amount of rehabilitation delivered between intervention and control groups. There is currently insufficient evidence to recommend a minimum beneficial daily amount in clinical practice.

Large, well-designed, high-quality RCTs that provide a large contrast (minimum of 1000 minutes) in amount of rehabilitation between groups would provide further evidence for effect of time spent in rehabilitation. In addition to 'time spent', other characteristics of rehabilitation are likely important, such as type of rehabilitation, stage of recovery, rehabilitation 'intensity' (such as number/rate of practice repetitions, physiological effort, or task difficulty), and rehabilitation schedule. These characteristics also warrant further exploration.
Additional reference: *ANPT: Locomotor Training CPG Resource Page*: This page has an abundance of resources for clinicians interested in manipulating intensity as a variable to make the most of their treatment minutes.
https://neuropt.org/practice-resources/anpt-clinical-practice-guidelines/locomotion

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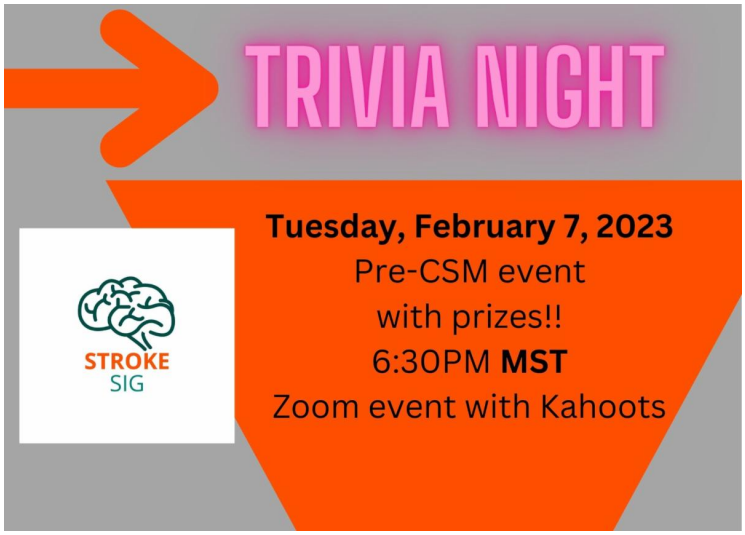
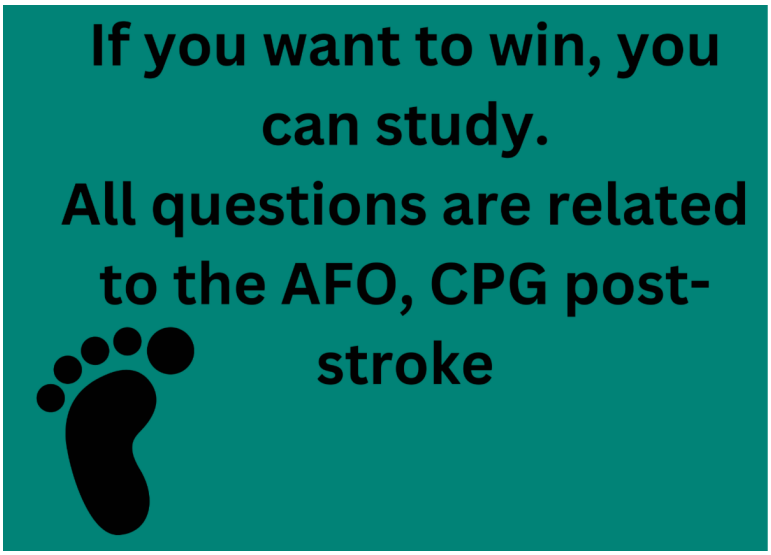
Registration required.

https://us06web.zoom.us/meeting/register/tZAqduqrpzwjGtMM2Tz_tq-y_IqWYQOtKeiU



We have some great prizes!!
Bring on the trivia and WIN BIG.

Here is the secret to winning! AFO CPG Clinical Practice Guideline for the Use of Ankle Foot Orthoses and Functional Electrical Stimulation Post Stroke



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