

March 7th, 2022



STROKE SPECIAL INTEREST GROUP

Academy of Neurologic Physical Therapy

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- Stroke Corner Article Review: Upper Limb Interventions Review
- New Podcast: Sleep in Inpatient Rehab
- ANPT Annual Conference Submissions Open
- There is still time to run for Stroke SIG Office: Nominations due **March 21, 2022**

Stroke Corner: Upper Extremity Interventions after Stroke Systematic Review

Thank you to Pam Bosch, DPT, PhD for reviewing this week's article

Timing and Dose of Upper Limb Motor Intervention After Stroke: A Systematic Review

Link to full article:

<https://www.ahajournals.org/doi/abs/10.1161/STROKEAHA.121.034348>

Purpose of article: The Stroke Recovery and Rehabilitation Roundtable task force has noted that there is still uncertainty about the optimal timing and intervention dose of poststroke motor interventions for the impaired upper extremity, as well as about what interventions are most beneficial. To address this, the authors systematically reviewed studies delivered in the first 6 months after stroke to assess the timing, dose, and efficacy of interventions to treat the impaired upper extremity during this early post-stroke phase.

Methods of interest:

This was a systematic review of MEDLINE, EMBASE, and Cochrane Controlled Register of Trials, initially conducted in 2018 and updated in 2020. Search terms were related to stroke, upper limb function and movement, and therapy and intervention. Studies were included if the patients were adults who received upper limb intervention in a hospital or outpatient setting within the first 6 months poststroke to address primary impairments. For included randomized controlled trials (RCT), any type of control group was acceptable, and non-RCT, cohort, and pre-post single group designs were also included. Outcomes had to be taken at a minimum of 2 timepoints (e.g., pre- and postintervention).

Results of interest:

The following data were extracted from 228 articles that were retained and included in the systematic review:

1. Time Post-stroke: extracted from included studies as the mean number of days from stroke onset to start of intervention, then grouped into recovery epochs of ≤ 24

hours poststroke, > 24 hours but ≤ 7 days poststroke; early subacute, > 7 days but ≤ 3 months poststroke, and ≤ 3 months, but ≤ 6 months poststroke.

2. Intervention Dose: Included duration, in weeks of intervention, days per week of intervention provided, session number per day, and session length in minutes. Intensity or difficulty were not extracted, but any potentially important threshold dose of ≥ 2 hours/day was documented.

3. Intervention Type: Recorded as bilateral arm training, biofeedback, bobath approach, constraint-induced movement therapy, electrical stimulation, hands-on (manual) therapy techniques, repetitive task training, electromechanical/robotic devices, strength training, task-specific training, virtual reality, standard therapy, mirror therapy, video game-based intervention, music therapy, or other.

4. Pre- and Post-intervention scores on select outcome measures: Change from preintervention to postintervention was examined via the Fugl Meyer Upper Limb (FMUL) assessment as a measure of impairment, and the Box and Block Test, Wolf Motor Function Test rate, Action Research Arm Test, and Wolf Motor Function Test scale, as measures of activity.

Discussion:

Time post-stroke: Most of the studies tested patients in the early subacute recovery epoch. Of note, the majority of authors did not present a rationale for the timing of intervention start and this is needed to guide timing selection for future studies.

Dose: For both the intervention and control groups, the median therapy dose was 45 min/session, 1 session/day, 5 days/week for 4 weeks. The largest median total dose of therapy was provided earlier poststroke, during the acute recovery epoch. As with timing of intervention start, there was a lack of justification for the dose prescribed across studies. While dose was consistent with accepted standard of care (45 to 60 min/d), this dose has been recognized as being insufficient to optimize recovery in the upper limb in past systematic reviews and meta-analyses.

Intervention type: While an objective of the study was to discuss the efficacy of various upper extremity interventions, analyses did not help to discern the superiority of any intervention. Electromechanical interventions, including robotics were utilized in the largest number of studies. This was followed by electrical stimulation, constraint induced movement therapy, repetitive task training, virtual reality, then mirror therapy. Ten or less studies used various other interventions, such as task-specific training, hands on therapy, and biofeedback.

Outcomes: Regardless of recovery phase of the participants, the minimal clinically important difference was achieved by both groups (intervention and control). At the end of studies, impairment level outcomes were similar between intervention and control groups in 69% of studies, while activity level outcomes were similar in 67% of the studies.

In summary, the most common dose of upper extremity intervention studies is less than one hour per day, which did not result in a minimal clinically important difference favoring the intervention group, and was likely too low to drive motor recovery. The authors spoke to the need to improve study design and quality of reporting for recovery studies, thus the information in this systematic review can inform those designing clinical research studies. The findings affirm a continued lack of clarity about the optimal timing and intervention dose of poststroke motor interventions for the impaired upper extremity after stroke.



PODCAST LINK

In this episode, host Jackie Loeshelle is joined by Dr. Catherine Siengskun, PT, PhD to discuss her article “Association Between Sleep Duration and Functional Disability in Inpatient Rehabilitation: A Pilot Observational Study”. This interview highlights the important role of sleep in stroke recovery and how physical therapists should aim to assist patients in optimizing sleep. Click on the button above to hear the podcast.

Read the article here:

<https://reader.elsevier.com/reader/sd/pii/S2590109521000604?token=516D52AD07267F4E394E1A7B92C9D6841D50AD10BE81C03508EF07AEE3195F7D13DC70B9A582D683D6D192C206BD0FA6&originRegion=us-east-1&originCreation=20220221035258>

Please send comments or questions this podcast to strokesig@gmail.com

ANPT Annual Conference: Submit your work!

2nd ANNUAL CONFERENCE **ANPT 2022**

October 13-15 Minneapolis, MN

The [Second Annual ANPT Annual Conference](#) will be in October in Minneapolis!

Submission Portals are now open for educational sessions and posters.

Education Submission Portal and Guidelines

Submissions due March 17 11:59 ET

Poster Submission Portal and Guidelines

Submissions due March 24 11:59 ET

KEY DATES

- February 9, 2022 – Poster submissions open

- February 9, 2022 - Education submissions open
- March 1, 2022 - Sponsorship and Exhibitor sign up begins
- March 17, 2022 – Education submissions close
- March 24, 2022 - Poster submissions close
- June 27, 2022 - Registration opens

There is Still Time to Run for Office! ANPT and Special Interest Group Elections

NOMINATE NOW!

Less than a month to go! Submit your Nominations for Stroke SIG office today!

The following Stroke Special Interest Group are open:

- Chair Elect
- Vice Chair
- Nominating Committee

Nominations are due March 21, 2022 and you are encouraged to self-nominate. The nomination link is now live on the [ANPT Elections Webpage](#).

Elections will be held April 4 - May 4, 2022. Three year terms begin July 1, 2022.

All Stroke SIG board positions involve attendance at monthly meetings and leadership of one of our Stroke SIG initiatives, such as our podcast, Student Corner, Social media, or weekly newsletter. Nominees must be Academy of Neurologic PT Members in good standing.

For more information on Stroke SIG initiatives, visit our page [here](#).

Don't hesitate to reach out to our Nominating Committee for more information at strokesig@gmail.com

Nominating Committee Members:

- Rachel Prusynski (Chair)
- Ginny Little
- Mackenzie Wilson

ELECTIONS WEBSITE

VISIT THE STROKE SIG ONLINE!





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