



STROKE SPECIAL INTEREST GROUP

Academy of Neurologic Physical Therapy

In this newsletter...

- ***NEW Article Review
- Evidence on modified Upper Extremity Fugyl-Meyer
- House of Delegates Town Hall



STROKE SIG ARTICLE REVIEW

Academy of Neurologic Physical Therapy



You can either read below, or listen to the audio version
with this [LINK](#)

Completed by: Lane Sidebottom, PT, DHS, CPCRT
Thank you, Lane!

Overseen by: Daniel Dray, PT, DPT, NCS

Summary topic title: Effects of constraint-induced movement therapy for the lower extremity among individuals post-stroke: a randomized controlled clinical trial

Article reference: Aloraini SM. Effects of constraint-induced movement therapy for the lower extremity among individuals post-stroke: A randomized controlled clinical trial. *NeuroRehabilitation*. 2022;51(3):421-431. doi:10.3233/NRE-220139

Link to full

article: <https://content.iospress.com/download/neurorehabilitation/nre220139?id=neurorehabilitation%2Fnre220139>

Definition: Constraint-Induced Movement Therapy (CIMT) is a treatment paradigm comprised of four components: (i) administering intense, daily therapeutic exercises over consecutive days; (ii) utilizing a 'shaping' technique for providing function-oriented, supervised exercises for the paretic limb; (iii)

behavioral strategies (transfer package) that facilitate the transfer of the learned skills from this intervention into everyday activities; and (iv) strategies to facilitate the use of the paretic limb (e.g., restraint for the non-paretic limb in upper extremity CIMT)

Purpose of article: Most people have persistent functional problems after stroke, and only a small percentage regain full function of the hemiparetic limbs. Constraint-induced movement therapy (CIMT) is a common treatment strategy for improving the function of the paretic upper extremity. The purpose of this article is to investigate the effect of CIMT for the lower extremity on balance and gait, using methods other than restraining the non-paretic lower extremity to encourage use of the paretic lower extremity.

Methods of interest: Participants had chronic stroke and were able to walk 10 meters independently with or without an assistive device. Thirty-eight participants were randomized to receive CIMT treatment or dose-matched standard physical therapy. Both groups received 3.5 hours of physical therapy per day, 5 days per week for 2 weeks. The CIMT group received 3 hours of exercises aimed at improving function of the paretic lower extremity. Exercises were delivered in blocks of 10 trials, with each trial lasting 30-45 seconds. The therapist increased the challenge of the exercises periodically as the patient's function improved. In order to facilitate transfer of therapy activities into daily life, 30 minutes of each session focused on practice of normal daily activities emphasizing the use of the paretic lower extremity. The participants also signed a behavioral contract regarding their commitment to the treatment program, and were provided with a list of exercises to perform daily at home.

An example of the CIMT-Lower Extremity intervention task was step-up exercises. In this exercise the subject was asked to step up onto a stool with the more affected lower extremity and then return to the floor. Progressing the task would include increasing the height of the stool, increasing number of repetitions and/or increasing the distance between the stool and the participant. Outcome measures were collected at baseline, at the end of the 2-week treatment and at 3-month follow-up. The assessor was unaware of group status. Fugl-Meyer assessment of lower extremity (FMA-LE) was used to assess LE function and speed/coordination. Berg balance scale (BBS), ten-meter walk test (10-MWT) and six-minute walk test (6-MWT) were secondary outcome measures.

Results of interest: Both CIMT and standard physical therapy treatment resulted in improved outcomes at the end of the 2-week study period and at 3-month follow-up. The CIMT group improved significantly more than the standard physical therapy control group on FMA-LE at 2 weeks, and on BBS and 10MWT at 2 weeks and 3 months.

Discussion, take home message: Intensity improves outcomes, as demonstrated by improved scores on all outcome measures for both groups that were maintained at the 3-month follow-up. The CIMT group saw a minimally clinically important improvement in scores on the FMA-LE (6 points) and on the BBS (7 points), and achieved a meaningful change in the 10MWT (.14m/s) after the 2-week treatment protocol. Therefore, the CIMT protocol, even without restraint of the unaffected LE, resulted in more meaningful improvements in LE motor recovery, balance and gait speed when compared with intensity-matched

standard PT treatment for people with chronic stroke.

Additional references:

-FMA-LE http://scale-library.com/pdf/Fugl-Meyer_Assessment_Lower-Extremity_FMA-LE.pdf

-Journal Article: [Constraint-Induced Movement Therapy for Lower Extremity Function: Describing the LE-CIMT Protocol](https://academic.oup.com/ptj/article/100/4/698/5695647)

<https://academic.oup.com/ptj/article/100/4/698/5695647>

**Be sure to check out
NEW STROKE EVIDENCE!**

From this month's issue of the Journal of Neurologic Physical Therapy (JNPT):

Development and Preliminary Validity Study of a Modified Version of the Upper Extremity Fugl-Meyer Assessment for Use in Telerehabilitation

Here is a little *TEASER!!*

Authors report potential for a new outcome measure to assess upper extremity function remotely!

Reference:

Carmona, C, Sullivan JE, Arceo, RBA, et al. Development and Preliminary Validity Study of a Modified Version of the Upper Extremity Fugl-Meyer Assessment for Use in Telerehabilitation. *J Neurol Phys Ther.* 2023;47(4): 208-216. DOI: 10.1097/NPT.0000000000000447



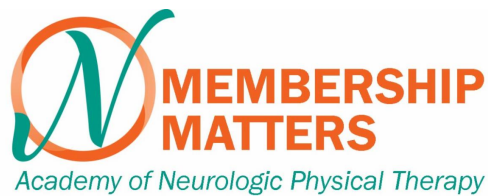
House of Delegates Town Hall

October 25, 2023 at 7:00 pm CST!

The ANPT delegation will be hosting a townhall on **Wednesday, October 25th @ 7:00 pm CST**. The delegation is looking forward to sharing about the 2023 House of Delegates! We also hope to connect with membership in anticipation of the 2024 House of Delegates - we welcome experienced delegates and members who would like to learn more about the House! You can register to attend [here](#).



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