



STROKE SPECIAL INTEREST GROUP

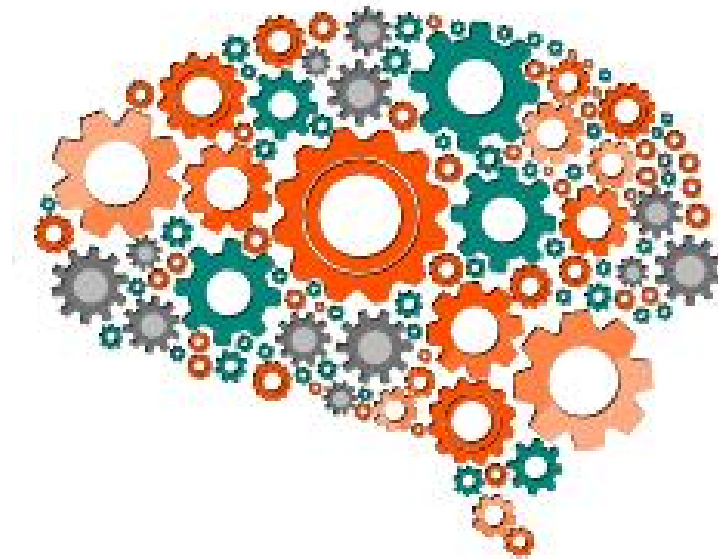
Academy of Neurologic Physical Therapy

In this newsletter...

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- New Synapse course on Rhythmic Auditory Stimulation
- New ways to connect with ANPT & NEW **ListServ** Update
- ANPT Save the Dates: Annual Business Meeting/Awards Ceremony
- Run or Nominate someone for SIG Office!

Stroke Corner: Walking with Rhythmic Auditory Stimulation in Chronic Stroke

Thanks to Anna Lovotti, DPT, NCS for reviewing this week's article!



Summary topic title: Walking with rhythmic auditory stimulation in chronic patients after stroke: A pilot randomized controlled trial

Article reference: Elsner, B, Schöler, A, Kon, T, Mehrholz, J. Walking with rhythmic auditory stimulation in chronic patients after stroke: A pilot randomized controlled trial. *Physiother Res Int.* 2020; 25:e1800.

Link to full article: <https://doi.org/10.1002/pri.1800>

Definitions:

Rhythmic Auditory Stimulation (RAS): “therapeutic application of pulsed rhythmic or musical stimulation in order to improve gait or gait related aspects of movement”

Background/Purpose of article:

- Lack of research for effective ways to improve ambulation for patients with chronic stroke in outpatient rehabilitation
- Thought to facilitate internal neural timing in patients after stroke
- According to That (2015), RAS demonstrates a neurological mechanism linking music to behavioral functions
- **Purpose:** to evaluate the effects of two different outpatient overground gait training programs with and without RAS in people after chronic stroke
- **Hypothesis:** there will be a clinically relevant improvement in walking velocity and capacity in the group receiving RAS vs the group without RAS.

Methods of interest:

- Inclusion Criteria:
 - Chronic stroke (more than 6 months)
 - Between ages of 40-80 years
 - Able to ambulate without physical assistance or only needs supervision of one person
 - Ability to ambulate for at least 6 minutes at self-chosen speed
- Exclusion Criteria:
 - dementia, brain tumors, orthopedic diseases causing pain in spine or hip, and severe global aphasia
- Where:
 - Northern Germany outpatient
- **Intervention: (intervention and control group)**
 - All patients were supervised by physiotherapists with experience of at least 10 years
 - All patients received the following training program:
 - 3 times per week for 4 weeks
 - 30 mins per session
 - 10 mins ambulating at self-selected walking speed
 - 10 mins of continued ambulation with increment speed increases by 5% up to max of 15%
 - Progressed to performing step combinations with and without platform with alternating steps (ie. forward/backward, tapping platform, tapping with one foot in position)
 - Intervention group: additionally received RAS for walking and step combinations at appropriate pace via headphones.
 - No corrections of gait pattern were made verbally or tactilely

Clinical Implications:

- leads to improvement of gait training
- uses external rhythms to facilitate intrinsically generated rhythmic movements
- patients improved significantly from baseline until end of intervention period for walking velocity
- significant improvement in BBS and stride length noted (did not differ significantly from control group)

Results of interest:

TABLE 2 Study results, after intervention and at follow-up

	RAS group T1-T2	GT group T1-T2	p value	RAS group T1-T3	GT group T1-T3	p value
Improvement in walking speed (m/s), median (IQR)	0.05 (0.1)	0.12 (0.3)	.298	0.09 (0.1)	0.10 (0.3)	.485
Improvement in walking capacity (m), median (IQR)	13.6 (14)	41 (79)	.297	14.0 (23)	48.5 (65)	.180
Improvement in BBS score (points), median (IQR)	4.0 (4)	1.0 (3)	.146	5.0 (5)	1.0 (1)	.080
Improvement in step length (cm), median (IQR)	6.3 (12)	5.5 (9)	1.0	3.3 (9)	5.5 (9)	.800

Abbreviations: BBS: Berg Balance Scale; IQR, interquartile range; RAS, rhythmic auditory stimulation; SD, standard deviation; T1: baseline; T2, at the end of intervention period; T3, at follow-up (T1-T2 means the change between these measurement points).

Discussion:

- No significant group differences immediately or 12 weeks post
- Implication of RAS in outpatient with people recovering from chronic stroke was found to be feasible
- RAS not found to add much effect as compared to usual treatment
- Other studies have shown higher improvements in gait with RAS however there frequency was five times per week as compared to three in this study

Implications for practice:

- Gait variables such as walking velocity and capacity improve in chronic patients after stroke in an outpatient setting where just low frequency is applied. RAS does not seem to increase the effects of gait training in the typical outpatient setting.

BPM Tap App:

Calculate BPM by tapping on screen as the individual is walking

The app will then calculate BPM for you

It will detect both tempo (BPM) and delay (ms)

You can then adjust BPM to higher than their normal in order to facilitate internal neural timing!

You can also search YouTube videos with the set BPM for you patient to practice with at home!

Also check out these resources:

- An awesome video of RAS in action: <https://www.youtube.com/watch?v=fbDKHGg9upQ>
- CEU Course: Rhythm and the Motor system: post-stroke gait training: <https://www.anptsynapsecenter.com/public/course-detail/?id=273>

New Synapse Course on Rhythmic Auditory Stimulation

If the Stroke Corner article sparked your interest, check out the new Synapse course on Rhythmic Auditory Stimulation: **Rhythm and the Motor System: Post-Stroke Gait Training.**

There have been decades of clinical research demonstrating the effectiveness of rhythmic auditory stimulation on specific diagnoses, including stroke. Outcomes include increased symmetry of muscle activation, diminished timing variability, and improved velocity and stride length. This presentation will discuss the neuro-mechanical foundation and practical applications of RAS in patients post stroke.

[LINK TO COURSE](#)

New Ways to Connect with ANPT including new ListServe!



ANPT is ready to take the next step in extending our social media reach. New accounts with Instagram and LinkedIn have been set up and a new ListServe platform on FreeLists.org is ready to go. If you are on these platforms, here is how you can follow the ANPT accounts:

- Instagram - @anptneuropt
- LinkedIn - <https://www.linkedin.com/company/neuropt>
- Listserv - email neuropt-request@freelists.org with 'subscribe' in the subject field -OR- sign up at <http://www.freelists.org/list/neuropt>. After subscribing, simply post questions by emailing neuropt@freelists.org.

Save the Date: ANPT Annual Meeting/Award Ceremony and Founder's Day Webinar

- ANPT VIRTUAL 2021 **Annual Business Meeting & Awards Ceremony** will be **Tuesday, January 26, 2021 – 7pm – 8pm CT**. More information to come.
- **Founder's Day Webinar Thursday, January 14 at 9:00 ET**. The ANPT Historical Archive and Member & PR Committees will host a Founder's Day webinar "Synapse Through Time: A look at Physical Therapy's past, present and future" with panelists Dr. Pamela Duncan, Dr. Fay Horak, Dr. Donald Neumann, and Dr. Ann Van Sant. This event is free but registration is needed - click [here](#).

RUN FOR SIG OFFICE

The Link to Nominate Yourself or A Colleague for ANPT Office is Live!

<https://neuropt.org/members/nomination>

You must be logged into your ANPT Account to access the form.

Positions open for the Stroke SIG board this year include:

1. SIG Nominating Committee- 3-year term
2. SIG Secretary - 3 year term

Nominations are due March 21st, 2021

Position Descriptions are available at the link above and copied below:

Secretary (3-year Term)

OFFICER DUTIES AND RESPONSIBILITIES

- i. Maintains a record of all official actions and decisions of the SIG.
- ii. Records the minutes of all SIG meetings and conference calls.
- iii. Submits minutes of SIG meetings (CSM, conference calls) to the SIG officers.
- iv. Attends the SIG officers meeting with the Academy Vice President at CSM.
- v. Assists the Chair in preparing and submitting an annual plan for the SIG to the Board of Directors.
- vi. Ensures currency of SIG website links and content every 6 months at minimum.
- vii. Provides for orientation of a successor

Nominating Committee Member (3-year term, 2 years as committee member and 1 year as

committee chair)

DUTIES AND RESPONSIBILITIES

1. Prepares annually a slate of two (2) or more candidates for each open SIG office.
2. Coordinates with the Executive Director and Academy Nominating Committee liaison to build ballot and to conduct elections.
3. Chair attends the SIG officers meeting with the Academy Vice President at CSM.

NOMINATE YOURSELF OR SOMEONE ELSE TODAY

VISIT THE STROKE SIG ONLINE!



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ANPT Social Media

