



1046 - Drums Alive Golden Beats Improves Brake Onset Time in Older Adults

Thursday, February 13, 2020 - 1:00 PM - 3:00 PM

Abstract

Purpose/Hypothesis: Age-related declines in reaction time (RT) are pervasive. Driver RT is one of the most important factors related to accident avoidance. Increased RT reduces the window of opportunity to appropriately stop or maneuver a motor vehicle. Driver RT is comprised of constituent parts that contribute to a total response time (TT). Simple RT (sRT) is comprised of the requisite sensory and central processing of TT. Movement time (MT) is comprised of the requisite movement of a particular behavioral response (e.g., moving your foot from the accelerator to the brake). Maintaining a physically active lifestyle can help attenuate age-related declines in RT. Drums Alive is a therapeutic movement program that uses choreographed rhythmic movements to improve cardiorespiratory health, mobility and flexibility. This study aimed to determine if a 10-week Drums Alive intervention, Golden Beats, could improve brake onset time in community dwelling older adults. We hypothesized that a 10-week Drums Alive intervention would improve driver RT when compared to a non-aerobic stretching intervention.

Number of Subjects: 22

Materials and Methods: Eleven community dwelling volunteers (2 males) completed the Drums Alive intervention (mean age = 68.82 years, SD = 5.33). Eleven age and sex matched control participants (2 males) completed the stretching intervention (mean age = 68.76 years, SD = 4.76). The Drums Alive intervention consisted of 20 one-hour sessions over the course of 10 weeks (2 sessions per week). Each Drums Alive session started with a 10-minute warm-up followed by 40 minutes of choreographed rhythmic movements and a 10-minute cool-down. The stretching intervention also consisted of one-hour sessions but met 3 times a week. Each stretching session started with a 10-minute warm-up on a recumbent bike followed by 50 minutes of total body stretches and targeted isometric holds (i.e., scapular retraction and pelvic tilts). Driver RT was assessed before and after each intervention. A computerized driving simulation task was used to measure sRT, MT, and TT on a brake onset task.

Results: Independent-samples t-tests were used to determine significant between-group changes in sRT, MT, and TT. A new p-value threshold was set to account for multiple comparisons ($0.05/3 = 0.017$). There was a statistically significant difference in pre- to post-intervention MT between the Drums Alive ($M = -0.052$, $SD = 0.063$) and control groups ($M = 0.007$, $SD = 0.039$; $t(22) = 2.61$, $p = 0.017$, two-tailed). The magnitude of the differences in the means (0.059 , 95% *CI*: 0.012 to 0.106) was large (eta squared = 0.25). No significant group differences were observed for sRT and TT.

Conclusions: Findings suggest that a choreographed rhythmic exercise intervention benefits a constituent component of driving-related RT.

Clinical Relevance: Driver RT is an essential part of roadway safety. Age-related declines in RT limit driving performance in older adults. Physical therapists are in a unique position to promote novel intervention strategies aimed at improving motor performance in older adults.

Authors

- [Brittney Moshos](#)
- [Peter Wright](#)
- [Greg Walsh](#)
- [Sarah Davey](#)
- [Kiera Wilkinson](#)
- [Mackenzie Hagan](#)
- [Kristen Marie Harrell](#)
- [Chelsea Noser](#)
- [Austin Robinson](#)
- [Anne Graff](#)
- [Nathan Forrest Johnson](#)

Drums Alive Golden Beats Improves Brake Onset Time in Older Adults

<https://apta.confex.com/apta/csm2020/meetingapp.cgi/Paper/22502>

American Physical Therapy Association / 1111 North Fairfax Street, Alexandria, VA 22314-1488 703/684_APTA (2782) / 800/999-2782 / 703/684-7343 (fax)

Contact APTA / Follow NEXT on Twitter

All contents©2018 American Physical Therapy Association. All Rights Reserved: Use of this and other APTA websites constitutes acceptance of our Terms & Conditions Privacy Policy Disclaimer