KESSLER FOUNDATION Podcast Transcript

Dr. B. Sandroff on improving cognition in multiple sclerosis with treadmill exercise training - Ep38

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JOAN BANKS-SMITH 00:05	[music] I'm Joan Banks-Smith for Kessler Foundation's Fast Takes, research that changes lives. In this episode, Dr. Brian Sandroff, senior research scientist in our Center for Neuropsychology and Neuroscience Research, talks about his peer-reviewed article, Effects of walking exercise training on learning and memory and hippocampal neuroimaging outcomes in MS: A targeted, pilot randomized control trial, published in November, 2021 in the journal Contemporary Clinical Trials. Funding source was Kessler Foundation. To learn more about Dr. Sandroff and his peer-reviewed article, links are in the program notes. Dr. Sandroff, what are the main takeaways of this publication?
BRIAN SANDROFF 00:53	The primary goal of this study was to evaluate whether or not aerobic exercise training, specifically treadmill walking exercise training, was associated with improvements in learning and memory in persons with MS who have objective impairment in learning and memory. As exercise has been proposed as a possible approach to improve cognition in MS, many existing studies haven't tested this in the most strong way possible. So this study was our attempt to do that where we recruited people who had learning and memory impairments a priori, that is, before the trial began. Then the study involved randomly assigning participants who demonstrated impairments in learning and memory into either twelve weeks of supervised treadmill walking exercise training or twelve weeks of supervised stretching and toning as a nonaerobic exercise comparator condition. And we measured learning and memory as well as hippocampal neuroimaging outcomes before and after that twelve week period. And unfortunately, the COVID-19 pandemic really impacted our research. Where our restrictions related to COVID-19 cut our sample short, or we proposed a sample of 40 people with MS, and we were only able to test 11 people with MS. But in those 11 people, the main takeaway is that, relative to the stretching and toning condition, treadmill walking exercise was associated with moderate sized improvements in learning and memory, specifically verbal learning and memory, as well as large sized improvements in hippocampal volume, where treadmill walking exercise is associated with preservation of hippocampal volume compared with atrophy of hippocampus in those who underwent stretching and toning.
BANKS-SMITH 02:35	What is the impact and next implications of the publication to the field?
SANDROFF 02:39	The primary impact is, this provides important proof of concept data for aerobic exercise training related improvements in learning and memory and learning and memory impaired people with MS, that is, the MS cohort who might demonstrate the greatest need for such an intervention approach. And this sets the stage for larger trials in larger samples of memory impaired people with MS where aerobic exercise might be able to be delivered in the community, for example. There's a large scale accessible approach to improving learning and memory and brain health in this population, and this study also provides preliminary evidence on a potential mechanism of aerobic exercise training effect on learning and memory, where

increases in hippocampal volume may have contributed to the improvements in learning and memory outcomes.

BANKS-SMITH 03:31 Tuned into our podcast series lately? Join our listeners in 90 countries who enjoy learning about the work of Kessler Foundation. Be sure and subscribe to our SoundCloud channel, Kessler Foundation, for more research updates. Follow us on Facebook, Twitter, and Instagram. Listen to us on Apple podcasts, Spotify, SoundCloud, or wherever you get your podcasts. This podcast was recorded remotely on December 15, 2021 and was edited produced by Joan Banks-Smith, creative producer for Kessler Foundation. [music]