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JOAN BANKS-SMITH
00:08

[music] This is another episode of Kessler Foundation's Fast Takes - Research that Changes Lives. I'm your host, Joan Banks-Smith. In this episode, Dr. Brian Sandroff, senior research scientist in our Center for Neuropsychology and Neuroscience Research, talks about his peer reviewed article The Preliminary Effects of Moderate Aerobic Training on Cognitive Function in People with Traumatic Brain Injury and Significant Memory Impairment: a Proof-Of-Concept Randomized Controlled Trial. This was published on October 27th, 2021 in the Journal Neurocase. The funding source was the New Jersey Commission on Brain Injury Research. Dr. Sandroff, what are the main takeaways of this publication?

BRIAN SANDROFF
00:54

This study was written up by Carly Wender as the first author, and really sought to examine aerobic exercise as an approach for managing cognitive impairment in persons with traumatic brain injury, as traumatic brain injury is associated with many cognitive problems. Although there is a lot of evidence for aerobic exercise-related improvements in cognition and in brain structure, function, and connectivity in older adults from the general population, there's not a lot of evidence in neurological populations, with very little evidence in traumatic brain injury. Carly and colleagues wrote up a secondary analysis of data from a study that was performed a few years back, in five people with moderate to severe TBI who also demonstrated impairments in learning and memory, and found that 12 weeks of aerobic cycling exercise training was associated with large improvements in learning and memory as well as cognitive processing speed, to go along with improvements in hippocampal volume and thalamic volume in this small sample. This study, I believe, is the first of its kind to include aerobic exercise with an active control condition on cognitive outcomes as well as neuroimaging outcomes in persons with TBI.

BANKS-SMITH 02:11

What is the impact, the next implications, of this publication to the field?

SANDROFF 02:15

This publication, although it's only in five people, is really a conversation starter, as it provides the first evidence that aerobic exercise might improve cognition in cognitively-impaired people with TBI, based on improvements in brain structure. This can generate an entire systematic line of research from here, wherein we can examine different types of exercise for improving cognition, different intensities of exercise for improving cognition, optimizing cognitive outcomes, optimizing neuroimaging outcomes, and also evaluating what patient characteristics might be important for such aerobic exercise-related benefits on cognition and brain health in persons with TBI.

BANKS-SMITH 02:59

Thank you so much. To learn more about Dr. Sandroff and his peer reviewed article, links are in the program notes. [music] 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

Aerobic cycling may improve cognition in individuals with TBI-related memory loss-Ep33

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