KESSLER FOUNDATION Podcast Transcript

Evaluating Sensory Acuity as a Marker of Balance Dysfunction After a Traumatic Brain Injury-Ep12

Recorded January 15, 2021. Listen to it here.

JOAN BANKS-SMITH: 00:04	[music] This is Joan Banks-Smith for Kessler Foundation's Fast Takes, research that changes lives. In this episode, I spoke with Dr. Rakesh Pilkar, senior research scientist from our Center for Mobility and Rehabilitation Engineering Research, to talk about his latest peer reviewed article, Evaluating Sensory Acuity as a Marker of Balance Dysfunction After a Traumatic Brain Injury: A Psychophysical Approach, which was published August 11th, 2020, in the journal Frontiers of Neuroscience. Funding sources for the study was the New Jersey Commission on Brain Injury. Can you share with us the main takeaways of this study?
RAKESH PILKAR: 00:45	Traumatic brain injury often damages the areas of the brain that regulate balance which is a key aspect of our day-to-day mobility. To maintain balance and avoid falls, it is not only important to produce timely body movements, or muscle responses, but also to accurately perceive the environmental changes or any perturbations. This study specifically focuses on the perception aspect of balance in individuals with traumatic brain injury. Our goal was to objectively evaluate the levels at which these individuals sense specific mechanical perturbations under the feet during standing. We found that individuals with TBI did, in fact, have a diminished ability to perceive these perturbations compared to their able-bodied counterparts. It was also found that this perceptual ability was significantly correlated with how they performed during the clinical evaluation of balance function. So the take-home message is individuals with TBI have diminished ability to perceive environmental perturbations, and this needs to be factored in, in the rehabilitation, to improve their balance and avoid falls.
BANKS-SMITH: 01:53	What is the impact and next implications of the study to the field?
PILKAR: 01:57	For the first time, we showed the framework to objectively evaluate the perception in individuals with TBI. Once further validated, such matters can not only be included in evaluating balance but also could be integrated into balance programs or rehabilitation programs to engage and improve the mechanisms of sensory perception.
BANKS-SMITH: 02:21	[music] To learn more about Dr. Pilkar, the Center for Mobility and Rehabilitation Engineering Research, Kessler Foundation, and the Frontiers of Neuroscience article, links can be found in the program notes. Tuned into our podcast series lately? Join our listeners in 90 countries who enjoy learning about the work of Kestler Foundation. Follow us on Facebook, Twitter, and Instagram. Listen to us on Apple Podcast, Spotify, SoundCloud, or wherever you get your podcasts. Be sure and subscribe to our SoundCloud channel, Kestler Foundation, for more research updates. This podcast was recorded on Friday, January 15th, 2021, remotely, and was edited and produced by Joan Banks-Smith, creative producer for Kestler Foundation.[music]