Novel Brain Injury Study Expands Prism Adaptation Treatment to Right-Sided Spatial Neglect - Episode 48

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TIMOTHY RICH: 00:05 [music] And in prism adaptation, patients wear goggles that are outfitted with binocular unidirectional prisms that sort of shift the view of the world to the left or right.

JOAN BANKS-SMITH: 00:16 That was Dr. Timothy Rich, associate research scientist in our Center for Stroke Rehabilitation. This is Kessler Foundation's Fast Takes, research that changes lives. I'm your host, Joan Bank Smith, and in this episode, Dr. Rich talks about his peer-reviewed article, Prism Adaptation Treatment for Right-Sided and Left-Sided Spatial Neglect. A retrospective case match study published in June 2023 in the journal, Archives of Rehabilitation Research and Clinical Translation. This study was supported by the Wallerstein Foundation for Geriatric Improvement, the Charles and Ian Starrionno Foundation, and Kessler Foundation. Can you share with us the main takeaways of this study?

RICH: 01:03 This study looks at prism adaptation treatment, which is an intervention for spatial neglect, which is a common disorder seen after stroke in which individuals ignore one side of the world, essentially. Left-sided spatial neglect following right hemisphere stroke is much more common than vice versa, than right-sided spatial neglect following left hemisphere stroke. But still, right-sided neglect affects about 25% of patients with left hemisphere stroke. And there's been very little research done examining right-sided spatial neglect as compared to left sided. And prism adaptation is one of the most research-supported treatments for left-sided spatial neglect. And in prism adaptation, patients wear goggles that are outfitted with binocular unidirectional prisms that shift the view of the world to the left or right. And then patients, while wearing the goggles, complete a series of visual motor tasks. At first, they miss the target because of a mismatch between the visual system and the motor system, but over time they adapt. And then finally, when the goggles are removed, the error returns but in the opposite direction. It's not completely understood why this is effective, but after repetition, it's been shown to improve symptoms of left-sided spatial neglect. However, it's really not been examined for patients with right-sided spatial neglect. So this was really the first larger study that looked at its effectiveness with patients with right-sided spatial neglect. And we used a matched control design to directly compare the effects between patients with left-sided spatial neglect, which we know it works for, and patients with right-sided spatial neglect. And in doing that, we were able to show that they had virtually the same outcome, and that is, they benefited quite a bit from prism adaptation treatment.

BANKS-SMITH: 02:58 What is the impact and next implications of this publication to the field?

RICH: 03:02 So this is really the first study of prism adaptation's effect for this population of patients with right-sided spatial neglect. It shows promising results; however, more research is needed, and especially prospective clinical trials where they're assigned to a treatment group and a control group. In this study, we did the best that we could, but we were working with a clinical data set, so it's all retrospective. So I think future

steps are to examine the effect of prism adaptation treatment in a larger scale study with this population.

BANKS-SMITH: 03:41 To learn more about Dr. Rich, the Center for Stroke Research, and his peer-reviewed article, links are in the program notes. 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 podcast, Spotify, SoundCloud, or wherever you get your podcasts. This podcast was recorded remotely on June 6, 2023, and was edited and produced by Joan Bank Smith, creative producer for Kessler Foundation.