

Neural mechanisms underlying state mental fatigue in multiple sclerosis: a pilot study

*** Recorded on August 19, 2020. *** [Listen to it here.](#)

[Music]

- JOAN BANKS-SMITH: 00:01 This is Joanne Bank Smith for Kessler Foundation's spastics rehab research that changes lives. Today, I'm with Dr. Michelle Chen, postdoctoral fellow from our center for neuropsychology and neuroscience research to talk about her latest peer-reviewed article neural mechanisms underlying state mental fatigue and multiple sclerosis, a pilot study. This was published in The Journal of Neurology on April 29, 2020. Funding sources for this study is the National Multiple Sclerosis Society and Kessler Foundation. Dr. Chen, can you share with us the main takeaways of this study?
- MICHELLE CHEN: 00:43 We investigated brain functioning as one becomes mentally fatigued. Or in other words, feelings of mental exhaustion after performing a challenging task. And what we found was that individuals with multiple sclerosis or MS may use their brains less efficiently, which contributes to the feelings of feeling mentally fatigued. So specifically, when completing a mentally challenging visual task, we saw that healthy control switch from using visual processing areas in the brain to brain regions are associated with more allocating attention and processing complex information. While individuals with MS can continue using their visual processing areas, which was less efficient. And we know that it wasn't as efficient and as effective because it influenced their performance and people with MS actually performed worse under task as a result and their reported higher levels of fatigue compared to healthy controls.
- BANKS-SMITH: 01:40 What is the impact and next implications of the study to the field?
- CHEN: 01:44 Although fatigue is a very common and debilitating symptom in MS, and a lot of clinicians and patients know that it is important, it is still very poorly understood in the field. And there are currently no gold standard treatment for fatigue. So our study really asked you are scientific knowledge about fatigue and specifically what is happening in the brain, the brain mechanisms underlying fatigue, which can help the field really develop more effective treatments in the future or fatigue in both people with MS and also other neurologic populations that experience severe fatigue.
- BANKS-SMITH: 02:19 For more information about this study check out the press release on our website; kesslerfoundation.org, or at the Journal Neurology. Links can be found in the program notes. Be sure to subscribe to our Soundcloud channel; Kessler Foundation for more research updates.