

Brain changes: Examining the lingering effects of COVID-19

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More profoundly than previously believed, the virus that causes COVID-19, SARS-CoV-2, can impact the brain for months after infection. The findings were presented at Neuroscience 2022, the annual

meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health.

"Long COVID," which includes the neurological fallout (a.k.a. sequelae) of a COVID-19 infection, can damage the central nervous system long after the acute symptoms of the virus have passed. Estimates report that one in five to one half of all adults are affected by at least one long COVID symptom, which includes ailments to mood and concentration. Scientists are still learning how the virus changes the brain, but it's becoming increasingly clear that the long-term effects are wide-ranging across age groups.

Today's new findings show that:

- Using fMRI imaging, scientists found that the sensorimotor brain regions of children who contracted COVID-19 months ago now showed a higher demand for resources. (Silvia Hidalgo-Tobon, UAM-Hospital Infantil de Mexico Federico Gomez)
- To mimic SARS-CoV-2's impacts, scientists triggered inflammation in a [mouse model](#) via toll-like receptor (TLR) 7. Eight weeks later, they found hippocampal impairment in both sexes and decreased fear conditioning in males. (Natalie C. Tronson, University of Michigan)
- Scientists found that roughly one-fourth of adults who had mild COVID-19 four months prior were left with deficits in their visuoconstructive abilities. (Marco Aurelio Romano-Silva, Universidade Federal De Minas Gerais)

"This isn't the first time that a flu-like viral infection has been linked to an increased risk for dementia. But one of the most important aspects of this work is the magnitude of people potentially affected by this—millions upon millions," said Robyn Klein, The Robert E. and Louise F. Dunn Distinguished Professor of Medical Sciences, director of

the Center for Neuroimmunology & Neuroinfectious Diseases, professor of medicine, pathology & immunology, and neurosciences at Washington University School of Medicine, and moderator.

"We need to move on to alternative hypotheses for these neurologic diseases; we also need to inform the public and physicians that this is a real illness and that they should be proactive in addressing it."

More information: Conference:

www.sfn.org/meetings/neuroscience-2022

Conference abstract: www.abstractsonline.com/pp8/#!/...9/presentation/67797

Conference abstract: www.abstractsonline.com/pp8/#!/...9/presentation/78720

Conference abstract: www.abstractsonline.com/pp8/#!/...9/presentation/69863

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