

# Investigators examine brain tests of patients with COVID-19

June 9 2021

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In a *Journal of Neuroimaging* analysis of data obtained from 193 patients with COVID-19 who had brain and/or spine imaging and a lumbar puncture because of neurologic symptoms, investigators found that

imaging results were related to the presence of SARS-CoV-2 in the cerebrospinal fluid.

The results were called central nervous system hyperintense lesions and leptomeningeal enhancement. Ten percent of [patients](#) with hyperintense lesions in the brain/spine had a positive PCR test result for SARS-CoV-2 in the [cerebrospinal fluid](#), compared with no patients without hyperintense lesions in the brain/spine. Twenty-five percent of patients with leptomeningeal enhancement had a positive PCR test result for SARS-CoV-2 in the cerebrospinal fluid, compared with 5% of patients without leptomeningeal enhancement.

"Understanding the relationship between imaging and cerebrospinal fluid findings can improve understanding of neurological symptoms in patients with COVID-19. Although hyperintense lesions in the brain/spine and leptomeningeal enhancement are associated with the presence of SARS-CoV-2 in the cerebrospinal fluid, it is important to recognize that a positive SARS-CoV-2 PCR in the cerebrospinal fluid is uncommon. These imaging findings are predominantly the result of inflammation, hypoxia, or ischemia, rather than infection, of the [central nervous system](#)," said lead author Ariane Lewis, MD, of NYU Langone Medical Center.

**More information:** *Journal of Neuroimaging*, [DOI: 10.1111/jon.12880](#)

Provided by Wiley

Citation: Investigators examine brain tests of patients with COVID-19 (2021, June 9) retrieved 6 May 2024 from <https://medicalxpress.com/news/2021-06-brain-patients-covid-.html>

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