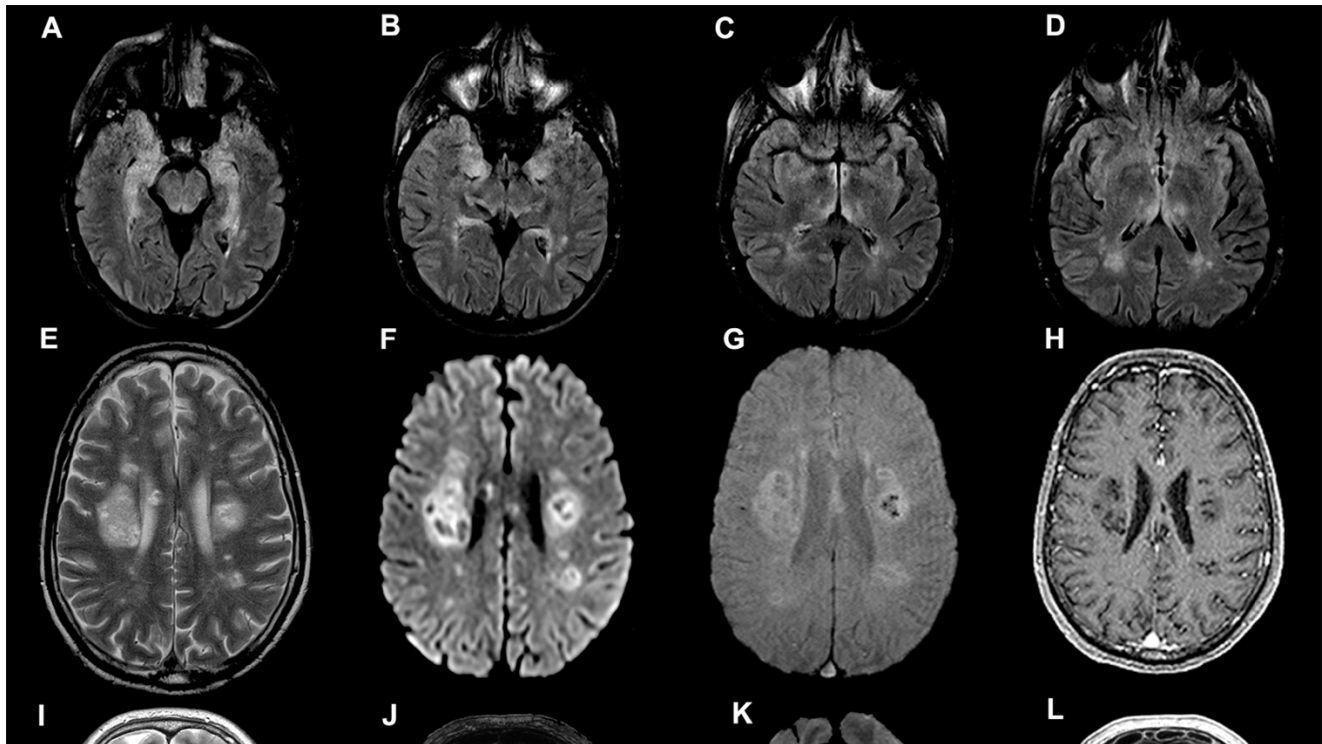


Scientists warn coronavirus pandemic could cause wave of brain damage

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Brain scans from the University College London study, published on July 8. (University College London)

The [novel coronavirus pandemic](#) could lead to a wave of brain damage in infected patients, warned British researchers in [a new study](#) released Wednesday.

Experts at the University College London (UCL) were the latest to describe that Covid-19 could cause neurological complications including stroke, nerve damage, and potentially fatal brain inflammation — even if the patients didn’t show severe respiratory symptoms associated with the disease.

“We should be vigilant and look out for these complications in people who have had Covid-19,” said joint senior author Dr. Michael Zandi in a [UCL press release](#), warning that it remains to be seen “whether we will see an epidemic on a

large scale of brain damage linked to the pandemic.”

Follow-up studies will be necessary to understand the potential long-term neurological consequences of the pandemic, they said.

The study, published in the journal *Brain*, examined 43 patients treated at University College London Hospitals for either confirmed or suspected coronavirus, from April to May. They varied in age from 16 to 85, and showed a range of mild to severe symptoms.

Among these patients, researchers found 10 cases of “temporary brain dysfunction” and delirium; 12 cases of brain inflammation; eight cases of strokes; and eight cases of nerve damage.



Most of the patients who showed brain inflammation were diagnosed with a specific, rare and sometimes deadly condition known as Acute disseminated encephalomyelitis (ADEM). Before the pandemic, the research team in London would see about one ADEM patient per month. During the study period, the number rose to at least one a week.

One woman hallucinated lions and monkeys in her house. Others reported numbness in their limbs or face, double vision, and disorientation. One severe patient was barely conscious, responding only when in pain.

Researchers are still trying to figure out why exactly Covid-19 patients are developing these brain complications. The virus that causes Covid-19 was not found in their brain fluid, meaning the virus does not appear to directly attack the brain. One theory, instead, is that the complications are indirectly triggered by an immune response from the patient's body — not from the virus itself.

These findings are significant for informing how doctors around the world monitor and treat patients — but they also pose new questions and challenges. For patients who aren't showing severe respiratory symptoms such as trouble with breathing, it can be difficult to identify these brain complications early enough to prevent or minimize damage. And for patients who are critically ill, their precarious health can limit how

much doctors can do to investigate what's happening in their brain.

The authors warned that further studies will be “essential” in figuring out how exactly the virus causes brain damage, and how to treat it.

“Given that the disease has only been around for a matter of months, we might not yet know what long-term damage Covid-19 can cause,” said joint first author Dr. Ross Paterson in the press release. “Doctors need to be aware of possible neurological effects, as early diagnosis can improve patient outcomes.”

Dr. David Strain of the University of Exeter Medical School, who was not part of the study, called the findings important but “not surprising” given previous coronavirus cases.

“The main limitation is that we don't know what the denominator is, so we don't know how frequently these complications arise,” he said in a statement on Wednesday. “We've already seen that some people with Covid-19 may need a long rehabilitation period — both physical rehabilitation such as exercise, and brain rehabilitation. We need to understand more about the impact of this infection on the brain.”

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