- Virus

# Worrying brain changes with Covid infections

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As an expert in infectious diseases, what worried me when Covid-19 emerged was not just how deadly it might turn out to be, but whether people who recovered would be left with any medium- to long-term impacts. I was thinking of conditions like Guillain-Barre syndrome, a rare neurological disorder which can happen after some bacterial and viral infections in which the body's immune system mistakenly attacks part of its peripheral nervous system. That can lead to anything from mild and short-lived numbness and weakness to leaving a person unable to breathe on their own.

The emergence of Long Covid, where people experience lingering symptoms for weeks to months after infection, shows I was right to be worried. Now, a new study published by researchers from the UK and US shows we have even more cause for concern. Between January and December last year, more than 80,000 people took part in a citizen science project called the Great British Intelligence Test. The 20 to 30-minute online test was designed to measure things like spatial planning, problem-solving abilities, and short-term memory capacity, as well as how well people were able to spatially manipulate objects in their minds, recognise the meanings of words, and identify emotions from pictures of faces.

It took place while the UK experienced its first wave of Covid-19 cases and as such, has provided an extremely useful dataset to look at the potential impacts of Covid-19 infection on the brain. The results are worrying. Controlling for things like age, education, income, and pre-existing medical conditions, the researchers found that people who had recovered from Covid-19 tended to score lower on the tests than people who hadn't been infected. Some people with Long Covid have reported experiencing ''brain fog'', where they struggle to focus on tasks or to recall words, so it's not surprising that they would score lower on the tests. But the same was true for people who no longer had any symptoms of Covid-19.

Another important finding was that the more severe someone's Covid-19 infection, the lower they were likely to score on the tests. For people who had been so ill that they were hospitalised and ventilated, their drop in test scores was larger than for comparable people without Covid-19 but who had experienced a stroke. Now we need to find out if these changes in cognitive function after Covid-19 are permanent, and whether this disease puts people at higher risk of developing other neurological conditions, like dementia.

Either way, this latest study is yet more evidence that Covid-19 is serious, but we can protect ourselves and our loved ones from it by getting vaccinated.

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