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Can Omicron cause long Covid?

Early evidence suggests its effects are less severe

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Many public health officials have taken heart in early evidence that suggests infections from the Omicron variant tend to cause less severe illness than other versions of the coronavirus. But another important question looms: whether infection with Omicron, including breakthrough cases in vaccinated people, can result in long Covid — the constellation of physical, neurological and cognitive symptoms that can last for months and impair people’s daily lives. It is too early for scientists to know much about the relationship between Omicron, vaccination and long Covid. Research from earlier in the pandemic does not yield definitive clues. Here is a sketch of what scientists have learned and the many questions still to be answered.



How long might Omicron symptoms persist?

Because the Omicron variant was first identified in late November, it is too early to say how long symptoms of infection can persist. It is also unclear whether, like previous versions of the virus, it can lead to the emergence of problems like brain fog or extreme fatigue after the infection has resolved. While recent reports suggest that Omicron may cause less severe initial illness than other variants, the basic symptoms of infection with Omicron are similar to infection with other variants, suggesting that long-term effects could also be similar. Milder initial illnesses do not necessarily mean that Omicron is less likely to lead to long Covid, doctors, researchers and patient-led groups caution. Studies from earlier waves of the pandemic indicate that many people who had mild or asymptomatic initial reactions to coronavirus infection went on to develop long Covid that persisted for months.

Can vaccines prevent long Covid?

Maybe. Vaccines primarily prevent people from getting seriously ill or dying from a coronavirus infection. With some previous variants, vaccines seemed to reduce the likelihood of infection itself— and not being infected is, of course, the best way to avoid long Covid. But vaccines have not been as effective in preventing infection with Omicron, and breakthrough infections with this new variant are far more common. Studies looking at vaccinated people and long Covid have so far mostly focused on data collected before the emergence of the Delta variant. And the study results have been mixed. One large study, which was published in the journal *The Lancet Infectious Diseases*, was based on reports to a phone app by more than 1.2 million British adults who had received at least one dose of a coronavirus vaccine between December 2020 and July 2021. It found that people who had received two vaccine doses and gotten breakthrough infections were about half as likely as people who had not been vaccinated to report symptoms lasting at least 28 days after their infection. About 5% of those with breakthrough infections reported such lingering symptoms, the study found, compared with 11% of infected people in an unvaccinated control group. Another large study, which was published without being peer-reviewed, found a similarly encouraging result. The study, produced by Arcadia, a healthcare data firm, and the Covid Patient Recovery Alliance, a collaboration of leaders with health expertise in government and the private sector, analysed records of about 240,000 patients infected with the corona virus by May 2021. It found that people who had received even one dose of a Covid vaccine before their infection were seven to 10 times less likely to report two or more symptoms of long Covid 12 to 20 weeks later. The study, which was led by Michael Simon, Arcadia's director of data science, and Dr Richard Parker, the firm's chief medical officer, also found that people who received their first vaccine dose after contracting the coronavirus were less likely to develop long Covid than those who remained unvaccinated, and the sooner they were vaccinated after infection, the lower the risk of longterm symptoms. But results from another study, also not yet peer-reviewed, were more discouraging about the ability of vaccines to prevent long Covid. The study was conducted by researchers in Britain who analysed electronic medical records of patients in the United States. It compared about 10,000 people who had received Covid vaccines with a similar number of people who had not been vaccinated against the coronavirus but did have a flu vaccine — an effort to limit the number of people in the study who might be considered vaccine hesitant or who generally had less healthy behaviours, the researchers said. The study found that having a coronavirus vaccine before being infected did not reduce the risk of most symptoms of long Covid. There was some suggestion from the data that vaccinated people might be at lower risk of long-term issues like abnormal breathing and cognitive symptoms, the authors wrote, but those results were not statistically conclusive. The authors said it was possible that because their data relied on electronic health records, the study might have captured only patients with the most severe symptoms, rather than a wider range of patients who did not seek medical attention for their symptoms.

Can vaccines help if you already have long Covid?

When vaccines were first rolled out, before the emergence of the more contagious Delta variant which preceded the even-more-contagious Omicron variant, some patients with long Covid were finding that symptoms like brain fog, joint pain, shortness of breath and fatigue improved after they were vaccinated. Still, many people experienced no difference in their

symptoms after vaccination and a small percentage said they felt worse. A study by the Office for National Statistics in Britain found that in people ages 18–69 who reported their symptoms between February and September 2021, a first dose of a vaccine lowered the odds of reporting long Covid symptoms by 13%. A second dose further lowered the odds by 9%, the study found. Some researchers say it might make scientific sense that vaccines could help some people with long Covid. The cause of long Covid is still unclear, and different symptoms might have different underlying causes in different patients, experts say. Some leading theories are that the condition may be related to remnants of the virus or its genetic material lingering after the initial infection subsides or to inflammation or blood circulation problems spurred by an overactive immune response that is unable to shut down. Akiko Iwasaki, an immunologist at Yale, has said that vaccines may be able to provide lasting relief in people whose symptoms are caused by vestiges of the virus if the antibodies generated by the vaccines eliminate those remnants. But in people whose symptoms may be caused by a post-viral response resembling an autoimmune disease, she said, vaccines may help only temporarily and problems like fatigue could reemerge.

People who received their first vaccine dose after contracting the coronavirus were less likely to develop long Covid than those who remained unvaccinated