

COVID-19 vaccine may lessen severity and duration of long COVID

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Credit: Jamie Street on Unsplash

Vaccination against SARS-CoV-2, the virus responsible for COVID-19,

may lessen the severity and duration of long COVID in those with persistent symptoms after infection, suggests a study that closely imitates a randomized clinical trial, and published in the open access journal, *BMJ Medicine*.

The jab may also curb the condition's impact on the social, professional, and family lives of those affected, the findings indicate.

U.K. figures suggest that around 1 in 10 of those who have been infected with SARS-CoV-2, who now number more than 600 million people worldwide, will develop long COVID.

The symptoms are many and varied, but some of the most common include persistent fatigue, "brain fog," headache, muscle and joint pains, and breathlessness. Around 90% of those with long COVID still report symptoms a year after their [initial infection](#).

Preliminary research suggests that vaccinating people who already have long COVID with a COVID-19 vaccine might reduce symptom severity. To substantiate these findings, the researchers drew on data from a large ongoing research program in France (ComPaRe) involving people with long term conditions, including long COVID.

Most people in developed countries have already been vaccinated against COVID-19, ruling out the option of a randomized controlled trial. Their study was therefore designed to imitate as closely as possible a clinical trial evaluating the effect of COVID-19 vaccination on the symptoms and impact of long COVID, using observational data in 455 pairs of people matched for a range of factors, including age, sex, co-existing conditions, and long COVID severity.

Over three time periods, the researchers compared patients vaccinated for the first time with any of the AstraZeneca, Pfizer-BioNTech,

Johnson & Johnson or Moderna vaccines with those who remained unvaccinated.

The average age of participants was 47, and most (733; 80.5%) were women. Some 545 (60%) had laboratory confirmed COVID-19 infection, and 81 (9%) had been admitted to hospital during the acute phase of their infection.

Participants were asked to score both their symptom severity and the impact of long COVID on their quality of life every 60 days, using validated patient reported outcomes (PROMs).

Overall, vaccination was associated with a small reduction in the average number of different long COVID symptoms at 120 days: 13 among those who were vaccinated and 14.8 among those who weren't.

Twice as many of the vaccinated patients reported remission of all their long COVID symptoms: 57 (nearly 17%) compared with 27 (7.5%) of the unvaccinated. The PROM score used to measure improvements in the impact of long COVID on participants' social, professional, and family lives ranged from 0 (no impact) up to 60 (maximal impact). The average score among the vaccinated was 24.3 compared with 27.6 among the unvaccinated.

Some 26/455 (nearly 6%) vaccinated patients reported side effects, 4 of which were considered serious, with 2 requiring admission to hospital; in 13 others symptoms worsened. The researchers acknowledge various limitations to their study, including that all the participants had been infected before the delta or omicron variants were in circulation.

The age and gender profile of participants might also limit the wider generalizability of their findings, they suggest. Nor is it clear how vaccination might reduce the severity and duration of long COVID

symptoms, although an increase in antibody titers or elimination of viral reservoirs after vaccination, or both, have been mooted as possible explanations.

But the researchers nevertheless conclude: "Millions of patients have [persistent symptoms](#) after infection with the SARS CoV-2 virus and many more might be at risk in the future. To our knowledge, this is the first study of a potential intervention that could reduce the burden of long COVID on care systems."

They add, "The results suggest that vaccination should be encouraged in all patients who have already been infected with the SARS CoV-2 virus."

A [systematic review](#) of 16 [observational studies](#) from 5 countries, also published in the journal, echoes the findings. It concludes that COVID-19 vaccines might both protect against, and help treat, the symptoms of long COVID, with the proviso that more good quality evidence is needed.

In a linked editorial, Drs Frances Edwards and Fergus Hamilton, of, respectively, North Bristol NHS Trust and the University of Bristol, agree that: "COVID-19 vaccination is likely to have some beneficial effect on long COVID through reducing case severity as well as incidence."

But they caution: "Estimating the size of the effect (and the effect of further vaccine doses) remains a challenge in [observational data](#). The evidence of benefit after infection is much more unclear and harder to interpret given the current rate of seropositivity and [vaccine](#) uptake in many countries.

"While these studies are encouraging, trials comparing vaccination with

placebo in patients with long COVID (as defined by WHO criteria) are required to definitively recommend for or against vaccination to improve symptoms of long COVID."

More information: Viet-Thi Tran et al, Efficacy of first dose of covid-19 vaccine versus no vaccination on symptoms of patients with long covid: target trial emulation based on ComPaRe e-cohort, *BMJ Medicine* (2023). [DOI: 10.1136/bmjmed-2022-000229](https://doi.org/10.1136/bmjmed-2022-000229)

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