

Vaccination ups infection-acquired immunity against SARS-CoV-2

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Two doses of BNT162b2 vaccine are associated with high short-term protection against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which wanes after six months, while immunity remains high for those with infection-acquired immunity boosted with vaccination, according to a study published online Feb. 16 in the *New England Journal of Medicine*.

Victoria Hall, from the U.K. Health Security Agency in London, and colleagues examined the duration and effectiveness of immunity in a prospective cohort of [asymptomatic](#) health care workers. The time to confirmed [infection](#) was compared in vaccinated and unvaccinated persons, stratified by previous infection status.

- Overall, 27% of the 35,768 participants had a previous SARS-CoV-2 infection.
- The researchers found that [vaccine coverage](#) was high; 97% had received two doses (78% BNT162b2 with a long interval between doses; 9% BNT162b2 with a short

interval; 8% ChAdOx1 nCoV-19 [vaccine](#)).

- A total of 2,747 primary infections and 210 reinfections were observed between Dec. 7, 2020, and Sept. 21, 2021.
- For previously uninfected participants who received BNT162b2 vaccines with a long interval, the adjusted vaccine effectiveness decreased from 85 to 51% at a median of 14 to 73 days and a median of 201 days, respectively, after the second dose; no significant difference was seen for those receiving BNT162b2 with a long or short interval.
- The adjusted vaccine effectiveness at 14 to 73 days after the second dose was 58% among ChAdOx1 nCoV-19 vaccine recipients.
- In unvaccinated participants, infection-acquired immunity waned after one year; in those who were subsequently vaccinated, even those infected more than 18 months previously, immunity remained consistently higher than 90%.

"The highest and most durable protection was observed in participants who received one or two doses of vaccine after a primary infection," the authors write.

More information: Victoria Hall et al, Protection against SARS-CoV-2 after Covid-19 Vaccination and Previous Infection, *New England Journal of Medicine* (2022). [DOI: 10.1056/NEJMoa2118691](https://doi.org/10.1056/NEJMoa2118691)

One author disclosed financial ties to the pharmaceutical industry.

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