

# **COVID-19 vaccine gives substantial protection against reinfection**

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Researchers find significant vaccine effectiveness against SARS-CoV-2 reinfection. Credit: Hakan Nural, Unsplash (CC0, [creativecommons.org/publicdomain/zero/1.0/](https://creativecommons.org/publicdomain/zero/1.0/))

Individuals previously infected with SARS-CoV-2, the virus that causes COVID-19, still benefit from vaccination, gaining 60% to 94% protection against reinfection, depending on the variant. A new study led by Katrine Finderup Nielsen at Statens Serum Institut, Denmark, reports these findings in *PLoS Medicine*.

During the recent pandemic, vaccination has been one of the best tools available for curbing the spread of COVID-19. People infected with the virus are known to develop long-lasting [natural immunity](#), but Finderup Nielsen and her team wanted to know whether these individuals would still benefit from receiving the vaccine.

The team analyzed infection and vaccination data from nationwide Danish registers that included all people living in Denmark who tested positive for the virus or were vaccinated between January 2020 and January 2022. The data set included more than 200,000 people who tested positive for SARS-CoV-2 during each of the alpha, delta and omicron waves.

Their analysis showed that for people with previous infections, vaccination offered up to 71% protection against reinfection during the alpha period, 94% during the delta period and 60% during the omicron period, with protection lasting up to nine months.

These findings show vaccination protected people against SARS-CoV-2, over and above the protection offered by natural immunity during all

three waves of variants. The authors point out that the current study was too short to determine whether the vaccine protects against severe outcomes, such as death and hospitalization, and that future studies with longer follow-up times will be necessary to answer this question.

From a [public health perspective](#), these insight into [vaccine effectiveness](#) can help [decision makers](#) plan the timing and execution of vaccination strategies to make them most effective.

Finderup Nielsen adds, "In our study we find a significant [vaccine effectiveness](#) against SARS-CoV-2 reinfection, and this shows the importance of vaccination also for those who might be protected by natural immunity."

**More information:** Katrine Finderup Nielsen et al, Vaccine effectiveness against SARS-CoV-2 reinfection during periods of Alpha, Delta, or Omicron dominance: A Danish nationwide study. *PLoS Medicine* (2022). [DOI: 10.1371/journal.pmed.1004037](https://doi.org/10.1371/journal.pmed.1004037)

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