

# COVID-19-mRNA vaccine induces good immune response against variants

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A new Finnish study shows that 180 health care workers who had received two doses of the Pfizer and Biontech vaccine have very good antibody responses against the SARS-CoV-2 virus. The immune

response was as strong against the alpha variant (formerly the UK variant) but was somewhat decreased against the beta variant (formerly the South Africa variant).

Finnish researchers from the University of Turku and University of Helsinki together with Turku University Hospital, Helsinki University Hospital, and the Finnish Institute for Health and Welfare studied the immune response induced by the coronavirus vaccinations, which started in Finland in December. The researchers analyzed vaccine responses in 180 [health care workers](#), each of whom received two doses of the Pfizer and Biontech mRNA vaccine.

All vaccinated subjects were found to have an excellent antibody level against the original virus after two vaccine doses. The immune response was just as strong against the [alpha variant](#) of the virus. Although the immune response against the beta variant was weaker, the vaccinated subjects did have neutralizing antibodies that give relatively good protection against the variant.

"The study demonstrates the efficiency of the COVID-19 vaccine and its ability to induce antibody responses in working-age population regardless of their age or sex. The vaccine is one of the most effective I have ever studied," says Professor of Virology Ilkka Julkunen, whose research group focuses on studying the immune response created by coronavirus vaccines and natural infections.

"After two doses, the immune response created by the COVID-19 [vaccine](#) was even better than after a coronavirus infection with mild symptoms," says doctoral candidate Pinja Jalkanen from the University of Turku.

"It is also very promising that nearly all of the vaccinated subjects had even a small amount of neutralizing antibodies against the beta variant,"

adds Professor Anu Kantele from Helsinki University Hospital and Meilahti Vaccine Research Center (MeVac) of the University of Helsinki.

The study continues with longitudinal follow-up of [immune response](#) and protection against other variants circulating around the world, such as the delta variant (formerly the India variant). In addition, the research focuses on the analysis of the [antibodies](#) of other available coronavirus vaccines. The study was conducted without any support from pharmaceutical industry.

The study was published in *Nature Communications*.

**More information:** Pinja Jalkanen et al, COVID-19 mRNA vaccine induced antibody responses against three SARS-CoV-2 variants, *Nature Communications* (2021). [DOI: 10.1038/s41467-021-24285-4](https://doi.org/10.1038/s41467-021-24285-4)

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