

Omicron significantly reduces Covid antibodies generated by Pfizer vaccine, study finds

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Tue, December 7, 2021, [Story source: The Telegraph \(Britain\)](#)

People who have previously had Covid or been vaccinated have far less protection against omicron than they do for other variants, according to the first data of its kind.

Scientists from South Africa grew live samples of [the omicron variant](#) and performed lab experiments to see if, and how, omicron was affected by antibodies in blood samples from 12 people who had been vaccinated. Six of the people also had previously had Covid.

The world has been waiting for these neutralising studies to gauge how pre-existing immunity from both vaccination and prior infection will hold up against [omicron](#).

The study shows how many antibodies are needed in order to stop the virus from replicating and is an early indicator of how effective the worrying new variant is at avoiding our immune system.

In reality, the picture is far more complex as human immune systems have other lines of defence that work in tandem with antibodies, such as T-cells.

The new study is the first to show [how omicron compares to previous variants](#), such as beta and delta, on a level playing field and the preliminary data shows antibodies in blood samples are 41 times less effective for omicron than for the 2020 strain.

“This doesn't mean vaccines will be 40x less effective,” said Dr Muge Cevik, an infectious disease expert at the University of St Andrews who was not involved in the research.

However, it will be several weeks before real-world data is available and more nuanced evaluations are possible.

Before [omicron emerged](#), beta was the variant which scientists had found was most adept at dodging antibodies.

In similar experiments, the team of academics found that beta triggered just a three-fold decrease in the number of neutralising antibodies.

Real-world studies subsequently showed that beta diminished the ability of vaccines to prevent infection by around 40 per cent.

“The results we present here with omicron show much more extensive escape,” the researchers of the new study write.

However, people who had been vaccinated and previously infected with the old coronavirus strain had higher antibody levels than in those who were just vaccinated.

“Previous infection, followed by vaccination or booster is likely to increase the neutralisation level and likely confer protection from severe disease in omicron infection,” the scientists say.

Dr Alex Sigal, one of the authors of the paper, said: “There is a very large drop in neutralisation of omicron by [Pfizer] immunity relative to ancestral virus.

“Omicron escape from [Pfizer vaccination] neutralisation is incomplete. Previous infection and vaccination still neutralises.”

Ash Otter, a research scientist working on the coronavirus for the UK Health Security Agency (UKHSA) said on Twitter that the inferior protection was to be expected, given what we know about omicron’s myriad mutations.

“Key thing to stress is [that the] data is small, but [it] looks like we don't lose complete neutralisation in those with [three time] antigen exposures (eg infection and two doses).”

This, he added, increases confidence in the theory that boosters will be effective against omicron to some degree.

Dr Rupert Beale, head of the cell biology lab at the Francis Crick Institute, agreed, tweeting out: “It looks like three jabs could still be very useful.”

“Those who received two doses of vaccine still retained neutralisation,” said Dr Cevi.

“Hybrid immunity provides much better neutralisation, which means we could expect fairly good results in boosted individuals.”