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CNN Studies confirm waning immunity from Pfizer's Covid-19 vaccine



By **Maggie Fox**, CNN

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(CNN) — Two real-world studies published Wednesday confirm that the immune protection offered by two doses of Pfizer's Covid-19 vaccine drops off after two months or so, although protection against severe disease, hospitalization and death remains strong.

The studies, from Israel and from Qatar and published in the New England Journal of Medicine, support arguments that even fully vaccinated people need to maintain precautions against infection.

One [study from Israel](#) covered 4,800 health care workers and showed antibody levels wane rapidly after two doses of vaccine "especially among men, among persons 65 years of age or older, and among persons with immunosuppression."



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especially strong for people who recovered from infection and then got vaccinated, also. "Overall, the accumulating evidence from our study and others shows that long-term humoral response and vaccine effectiveness in previously infected persons were superior to that in recipients of two doses of vaccine," they wrote.

"We conducted this prospective longitudinal cohort study involving health care workers at Sheba Medical Center, a large tertiary medical center in Israel," Sheba's Dr. Gili Regev-Yochay and colleagues wrote.

The researchers noted that levels of so-called neutralizing antibodies -- the immune system's first line of defense against infection -- correlate with protection against infection, but for this study they studied only antibody levels.

"Published work about many vaccines, such as those against measles, mumps, and rubella, has shown a small decrease each year of 5 to 10% in the neutralizing antibody levels," they wrote. "We found that a significant and rapid decrease in humoral response to the BNT162b2 vaccine was observed within months after vaccination."

The study also indicated that immunity for people who get vaccinated after natural Covid-19 infection lasts longer. It's



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contact than unvaccinated persons and may also have lower adherence to safety measures," they wrote. "This behavior could reduce real-world effectiveness of the vaccine as compared with its biologic effectiveness, possibly explaining the waning of protection."

But it's a signal that countries should prepare for fresh surges of Covid-19. "These findings suggest that a large proportion of the vaccinated population could lose its protection against infection in the coming months, perhaps increasing the potential for new epidemic waves," they wrote.

Pfizer has been arguing that immunity from the first two doses of its vaccine begins to wear off after a few months. Last month, Pfizer won authorization from the US Food and Drug Administration for booster doses of its vaccine for some six months after people finish their first two doses.

The US Centers for Disease Control and Prevention [recommended](#) that people older than 65, people with conditions making them more susceptible to getting seriously ill with breakthrough infections, and people at high risk of infection such as health care workers and prison inmates get boosters.

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A [second study from Qatar](#) looked at actual infections among the highly vaccinated population of that small Gulf nation. People there mostly got Pfizer/BioNTech's vaccine, also known as BNT162b2.

"BNT162b2-induced protection against infection builds rapidly after the first dose, peaks in the first month after the second dose, and then gradually wanes in subsequent months," Laith Abu-Raddad of Weill Cornell Medicine-Qatar and colleagues wrote. "The waning appears to accelerate after the fourth month, to reach a low level of approximately 20% in subsequent months," they added.

Nonetheless, protection against hospitalization and death stayed at above 90%, they said.

The waning protection may involve behavior, they noted.

"Vaccinated persons presumably have a higher rate of social

contact than unvaccinated persons and may also have lower adherence to safety measures," they wrote. "This behavior could reduce real-world effectiveness of the vaccine as compared with its biologic effectiveness, possibly explaining the waning of protection."

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Israel has been boosting its entire population and now says it will require people to have had a third shot to be considered fully vaccinated.

In the United States, more than 6 million people have received a third dose of vaccine and average the pace of booster shots is higher than the rate of people getting vaccinated for the first time, according to CDC data.

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