



The BMJ

Cite this as: *BMJ* 2022;377:o1259<http://dx.doi.org/10.1136/bmj.o1259>

Published: 19 May 2022

Covid-19: Second boosters may benefit at-risk groups but have “minimal” impact for others, says WHO

Elisabeth Mahase

Short term benefits are seen after a second covid-19 vaccine booster—normally a fourth vaccine dose—in health workers, over 60s, and people with immunocompromising conditions, the World Health Organization has said.¹

But early data show that the benefit may be “minimal” in healthy younger populations, it added. WHO said that evidence on the usefulness of these doses in all groups was sparse, with studies available only for mRNA vaccines such as the Pfizer-BioNTech and Moderna vaccines.

WHO’s evidence review included seven studies, six of which were conducted in Israel and one in Canada. Six of the studies evaluated the relative effectiveness of a fourth dose four months after a third dose of mRNA vaccine, compared with people who received three doses. The other study provided data on absolute vaccine effectiveness, comparing the fourth dose schedule with unvaccinated people. The maximum follow-up in the available studies was short, ranging from two to 10 weeks after the fourth dose.

The studies reported a variety of outcomes, including that a fourth dose reduced the number of breakthrough infections in healthcare workers and that a fourth dose led to slightly higher antibody levels than those achieved after a third dose.

Uncertain timeframe

The study that also included unvaccinated people reported that each additional dose increased vaccine effectiveness for severe disease. It found absolute effectiveness of 82% (95% confidence interval 75% to 88%) more than 84 days after the third dose and 92% (87% to 95%) in fourth dose recipients more than seven days after the fourth dose.

“The limited available data suggest that for highest risk groups there is a benefit that supports the administration of an additional booster dose,” WHO concluded. “Data to support an additional dose for healthy younger populations are limited; preliminary data suggest that in younger people, the benefit is minimal.”

In addition, rolling out a second booster had financial and workload consequences that must be “carefully weighed against the limited incremental benefit of an additional booster dose,” it added.

On the issue of whether new vaccines were needed, WHO said that a pan-SARS-CoV-2 or pan-sarbecovirus vaccine was needed but that the timeframe for its development was uncertain. As such, an updated vaccine that could generate greater breadth in the immune response against the emerging and already circulating variants, while also retaining protection against severe disease and death, would be useful, it said.

¹ World Health Organization. Interim statement on the use of additional booster doses of Emergency Use Listed mRNA vaccines against COVID-19. 17 May 2022. <https://www.who.int/news/item/17-05-2022-interim-statement-on-the-use-of-additional-booster-doses-of-emergency-use-listed-mrna-vaccines-against-covid-19>

This article is made freely available for personal use in accordance with BMJ’s website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.