

Do the COVID-19 vaccines keep working over time?

Summary of Findings from COVID-END Living Evidence

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Why do we need to know if the COVID-19 vaccines keep working over time?

Governments need to know if COVID-19 vaccines work over time. They will use this information to decide whether we need to keep wearing masks, physical distancing, and getting more vaccine doses. Scientists also agree that vaccinated people are less likely to be hospitalised for or to die from COVID-19 than unvaccinated people. It also seems that the protective effects of the vaccine may start to decrease over time. At the moment, we are not sure for how long this protection lasts.

What questions did we want to answer?

We want to answer two questions. First, how much protection do COVID-19 vaccines give people four months or more after being fully vaccinated. Second, we wanted to know how much protection a booster dose (third dose) of vaccine gives people three months or more after they got it. We looked at protection against infection, hospitalisation, and death for both questions

Summary: We looked at research on how well COVID-19 vaccines stop infections, hospitalisations, and deaths when 4 months or more have passed since someone became fully vaccinated. We also looked to see how well COVID-19 vaccines stop infections, hospitalisations, and deaths when 3 months or more have passed since someone received an additional booster dose.

We found that, over time, COVID-19 vaccines continue to strongly protect people against being hospitalised and from dying. However, vaccines may become less effective over time in preventing people from becoming infected with COVID-19, with the Omicron variant decreasing the effects even further. As such, we may need to keep doing things like mask wearing and physically distancing until the virus is completely under control.

How did we answer these questions?

When scientific studies are done, their results are usually stored in research databases. We searched several of these databases and collected all the studies we could find on how well COVID-19 vaccines work. Our team then identified all studies that: (1) compared people who were fully vaccinated to people who were unvaccinated; (2) followed these people for at least 4 months (or 3 months for the booster dose); and (3) looked at how often people got infected, were hospitalised, or died due to COVID-19. We then combined all the data across these studies to see what was happening.

What did we learn?

In general, we learned that fully vaccinated people continue to be strongly protected against hospitalisation and death due to COVID-19 for 7 to 8 months after being vaccinated. For the Omicron variant, there is no drop in protection against COVID-19 related hospitalisations 6 months after being vaccinated, but the level of protection

when people become fully vaccinated is lower than what the World Health Organization (WHO) suggests is good protection. A booster dose provides strong initial protection against COVID-19 related hospitalisations, but after 3 months this starts to decrease below what the WHO suggests is good protection.

COVID-19 vaccine protection decreases over time against infection. This means that you may be more likely to get infected with the virus that causes COVID-19 if you got vaccinated a while ago. Both full vaccination and booster doses of COVID-19 vaccines give people less protection against Omicron than against other variants like Delta. This means that you may be more likely to get infected with Omicron than other variants.

COVID-19 vaccines alone may not be enough to stop the virus from spreading. Other measures, like mask wearing, isolating when infected, and physical distancing, may still be necessary, even for fully vaccinated people.

How confident are we in these findings?

We are fairly confident in our findings because most of the studies we looked at were well done. We do not have a lot of research about how well COVID-19 vaccines work against some variants and more research is still being done. It is possible that our conclusions may change as this ongoing research is completed

This summary is based on a larger report that can be found at: https://www.mcmasterforum.org/docs/default-source/product-documents/living-evidence-syntheses/covid-19-living-evidence-synthesis-10.7---what-is-the-long-term-effectiveness-of-available-covid-19-vaccines-for-adults.pdf?sfvrsn=4c92f905_5

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