



## Transmissibility of COVID-19 among Vaccinated Individuals: A Rapid Literature Review - Update #2

### Summary

This rapid review is current to August 23, 2021. It updates two earlier reviews which also looked at research into the likelihood that partly or fully vaccinated individuals who catch COVID-19 will infect others. The 45 studies included in this review indicate two important findings. First, vaccinated individuals are less likely than unvaccinated individuals to have symptoms if they catch COVID-19. Symptoms help people realize they may have been infected and therefore should be tested and self-isolate. Second, there is also evidence to suggest that vaccinated individuals with COVID-19 are less likely to pass their infection to others in their household because they have less virus in their bodies.

### Implications

Vaccines do **not** provide 100% protection against either becoming infected with COVID-19 or transmitting this infection to others. Everyone who has been partly or fully vaccinated should still self-isolate and be tested if they develop COVID-19 symptoms. People who have been vaccinated should also continue to use personal protective equipment (PPE) like masks when they are in close contact with anyone who is unvaccinated.

**Reference:** Salmon C, Flanagan J, Farkas B, Mastikhina L, Egunsola O, Saxinger L, Skidmore B, Clement FM on behalf of the University of Calgary Health Technology Assessment Unit. Transmissibility of COVID-19 among Vaccinated Individuals: A Rapid Literature Review. Sept 24, 2021.

This research brief was co-developed by our patient partner, JoAnne Mosel, and Dr Joel Minion.

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### What is the current situation?

- Individuals with COVID-19 who do not show any symptoms are said to be 'asymptomatic'. Without symptoms, they may unknowingly transmit the virus to others because they are unlikely to be tested or self-isolate.
- Most studies of COVID-19 vaccines have looked at whether vaccines prevent people from becoming infected or from showing symptoms if they become infected. Fewer studies have looked at:
  - whether a vaccinated person can be infected and asymptomatic;
  - whether vaccination reduces a person's 'viral load' (the amount of virus in their body) if they become infected; and
  - whether a vaccinated person can pass their infection to others.

### What is the objective?

- This review examined research on COVID-19 transmissibility by people who have been partly or fully vaccinated. Transmissibility means how likely an infection is to pass from one person to another.

### How was the review conducted?

- We searched several scientific databases and websites for studies about whether people who have been partly or fully vaccinated have symptoms if they catch COVID-19 and whether they can transmit their infection to others.
- This review included 45 studies on humans published up to August 23, 2021. Of these, 25 are new studies since our last update. Animal studies from the last version have been removed to focus specifically on COVID-19 in humans.
- Six studies were experiments in which participants were randomly given a vaccination or a placebo. Thirty nine studies compared people vaccinated in real life against unvaccinated individuals to see what happened over time.
- The studies were reviewed and compared to understand what current research tells us about the likelihood that partly or fully vaccinated individuals with COVID-19 will have symptoms or will transmit the virus to others.

### What did the review find?

- The studies indicated that partly or fully vaccinated people who catch COVID-19 are between 54% and 90% more likely to not have symptoms. At the same time, vaccination reduces the likelihood they will pass their infection to others by up to 54% because they have less virus in their bodies.
- Findings from the 25 newest studies suggest that people who received Pfizer, Moderna or AstraZeneca vaccines and became infected had less virus in their bodies and were less likely to transmit COVID-19 to others.
- No studies were found on vaccine effectiveness against transmissibility of the Delta variant by vaccinated individuals within households.
- More research is needed to fully understand the effectiveness of vaccines in reducing COVID-19 transmissibility, particularly with newer variants like Delta.