



## Transmissibility of COVID-19 among Vaccinated Individuals: A Rapid Literature Review - Update #1

### Summary

This rapid review is current as of May 4, 2021. It updates an earlier report that looked at transmissibility of COVID-19 by individuals who have been vaccinated but who still catch the virus. Researchers do not yet fully understand how common it is for people with COVID-19 to not show symptoms. This is called “asymptomatic” infection. Researchers are also looking to understand whether vaccinated people who catch COVID-19 are less infectious than unvaccinated people with the virus. The studies reviewed for this report suggest that being either partly or fully vaccinated reduces both the chance of asymptomatic infection and of infecting others.

### Implications

COVID-19 vaccines do not prevent infection or transmission entirely. Everyone who has been vaccinated should still self-isolate and be tested if they develop COVID-19 symptoms. People who are vaccinated should also continue to use PPE when in close contact with anyone who is unvaccinated.

**Reference:** Egunsola O, Mastikhina L, Dowsett LE, Farkas B, Hofmeister M, Saxinger L, Clement FM on behalf of the University of Calgary Health Technology Assessment Unit. Transmissibility of COVID-19 among Vaccinated Individuals: A Rapid Literature Review. May 21, 2021.

### PMID:

This research brief was co-developed with our patient partners, Cathy Telfer and JoAnne Mosel.

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### What is the current situation?

- Asymptomatic individuals with COVID-19 are “silent carriers”. They can unknowingly transmit the virus to others because without symptoms they are unlikely to take necessary precautions like self-isolating.
- Most studies of COVID-19 vaccines have looked at whether vaccines prevent people from being infected with COVID-19 and showing symptoms. Less is known about:
  - whether a vaccinated person can be infected without symptoms;
  - 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 transmit their infection to others.

### What is the objective?

- This rapid review looked at how effective vaccines are in reducing COVID-19 transmission by people who have been vaccinated.

### How was the review conducted?

- Several scientific databases and websites were searched to find studies on whether COVID-19 vaccines prevent people from showing symptoms if they later become infected and from transmitting their infection to others.
- Because it is difficult to study transmission of COVID-19 in vaccinated people directly, some researchers used indirect measures known as “proxies” to determine the likelihood of transmission. These proxies included measuring how much virus is in a vaccinated person’s body after infection (“viral load”).
- This review looked at 33 studies published up to May 4, 2021. Evidence from the studies was examined together to determine how likely it is that COVID-19 can be transmitted by vaccinated individuals.
- Five studies were experiments where some people were randomly vaccinated and compared with others who received a placebo or fake vaccine. Sixteen studies observed individuals vaccinated in real life and compared them to unvaccinated individuals to see what happened over time. Twelve studies involved animals to understand how vaccines might work in people.

### What did the review find?

- The studies suggested that partial or full vaccination reduces the chance of being infected without symptoms by between 54% and 90%. Partial or full vaccination reduces the likelihood of transmitting the virus by up to 54%.
- This conclusion is based on research involving the general public, households and healthcare workers as well as studies involving monkeys and rodents.
- All the studies involved people or animals that had received a vaccine at least 14 to 28 days before COVID-19 symptoms were assessed.
- Further research is still needed to fully understand both asymptomatic infection after vaccination and the transmission of COVID-19 (including new variants) by vaccinated individuals to other people.