



PINNACLECARE



Medical Intelligence Report

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Topic: FAQ's COVID-19 Vaccine



1. What is the difference between the Pfizer/BioNTech and Moderna vaccines?

Both Pfizer/BioNTech and Moderna are mRNA vaccines, which have been found to have a similar efficacy and safety profile. Currently available research does not suggest that there is a measurable difference between the vaccines.

A more detailed look at comparisons between the two vaccines can be found at <https://www.statnews.com/2020/12/19/a-side-by-side-comparison-of-the-pfizer-biontech-and-moderna-vaccines/>

2. Is there a preference between the vaccines for different groups?

The two vaccines are roughly equivalent, but there are some differences in the ages of people authorized for each vaccine. As further information becomes available, there may be advantages of one compared to the other for different groups of individuals. Until then, individuals should use whichever vaccine is available.

3. Is the vaccine safe for children?

The Pfizer/BioNTech vaccine has been authorized for use in people aged 16 and older. The Moderna has been authorized for those aged 18 and older. Moderna has begun clinical trials that include individuals aged 12 to 17 to allow for an expansion of the age requirements.

4. Should pregnant women receive the vaccine?

The American College of Obstetricians and Gynecologists (ACOG) recommends that COVID vaccines should **NOT be withheld** from pregnant individuals who meet criteria for vaccination based on the federally recommended priority groups.

5. Should women who are breastfeeding receive the vaccine?

There have not yet been studies on whether components of the vaccine enter breastmilk. However, according to the Academy of Breastfeeding Medicine, it is unlikely that the encapsulated vaccine would travel from the mother's blood stream and reach breast tissue. If it did, it is even less likely that either the intact nanoparticle or mRNA would transfer into milk. In the unlikely event that mRNA is present in milk, it would be expected to be digested by the child and would be unlikely to have any biological effects.

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Based on the unlikely possibility that vaccination would harm a breastfeeding infant, vaccination should be offered to breastfeeding women in the same way other individuals are offered vaccination.

6. Do the authorized vaccines prevent infection from the B.1.1.7 COVID variant?

Yes, preliminary experiments suggest that the vaccines provide similar protection against infection from the B.1.1.7 variant. Blood serum from people vaccinated with the Pfizer/BioNTech vaccine was tested with virus containing one of the key mutations in the spike protein from B.1.1.7, and there was no change in the neutralizing effect of antibodies produced in response to the vaccine.

In response to either a vaccine or infection, the immune system makes multiple antibodies that interact with the viral protein in different regions. This redundancy is in place to prevent the virus from evading the immune response through mutation.

7. Is there information on the effectiveness of available vaccines on the SARS-CoV-2 variants other than B.1.1.7?

At this time, there is not enough information available to determine if there is a change in the protection afforded by vaccination in regards to other variants that were recently identified.

One of the variants, 501Y.V2, had a reduced interaction with two commercially available antibodies due to a specific mutation in the spike protein.

However, when the immune system creates antibodies against a pathogen, it produces multiple antibodies that interact with the viral protein in different regions in order to prevent the virus from evading the immune response through mutation. Therefore it is likely that the current vaccines will still offer protection from the emerging variants though additional research will be required to determine if the magnitude of the response is similar.

8. Once an individual has received both doses of the vaccine what precautions should they take in public settings?

The vaccines have been shown to be **95% effective at preventing symptomatic infection**, which means that there are a small number of people that may still be infected, especially if exposure occurs before the immune response is completely in place.

Both vaccines have been found to **reduce the risk of severe COVID disease**.

It is **NOT** yet known if either vaccine prevents asymptomatic infection.

Nor is it known if vaccinated people can transmit the virus if they do become infected, but do not show symptoms.

Individuals should continue to wear masks, wash hands and maintain distancing to prevent the possibility of spreading infection even after receiving both doses of the COVID-19 vaccines.

9. Could an individual still spread COVID-19 if they are vaccinated?

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Yes. It has not yet been determined if asymptomatic cases of COVID-19 occur in vaccinated individuals. Research is ongoing to investigate the possibility of transmission after vaccination.

10. Once I am vaccinated is it safe for me to socialize with others that are vaccinated indoors without masks?

It is not yet known how or if the authorized vaccines prevent transmission of SARS-CoV-2 to others, but it has been determined that the vaccine prevents severe symptoms. **The best option at this time is to continue with the current precautions, including mask use during social situations.**

11. Are the vaccines safe for immunocompromised patients?

The authorized vaccines should be safe, but may not lead to the same magnitude of immune response, or the same level of production of antibodies, as is seen in people with typical immune systems. This means that vaccination may have a reduced level of protection for those who are immunocompromised.

12. How does a compromised immune system affect the effectiveness of an mRNA vaccine?

The vaccine may be less effective because people with a compromised immune system often do not have as robust of an immune response to infections or vaccine challenge. As more data become available, researchers will be able to determine more exact predictions. However, vaccination of more people in the community will reduce the amount of transmission, thereby providing indirect protection of people with compromised immune systems.

13. Are there any medical conditions (e.g., allergies) which make vaccination inadvisable?

The vaccine should be **used with caution** in individuals with a history of

- An immediate allergic reaction or anaphylaxis to any other vaccine or injectable therapy (IV, subcutaneous [SQ], intramuscular [IM]) or
- An allergy to any form of polysorbate or polyethylene glycol (PEG).

People with a history of these reactions **can** have the vaccine, but the decision to receive the vaccine should be discussed with their physician to weigh potential benefits of protection from COVID-19 compared with the risk of adverse reactions to the vaccine components.

It has been recommended by both the vaccine manufacturers and the CDC that epinephrine and treatment for anaphylaxis and/or hypersensitivity be available at vaccination sites, and a period of observation by medical personnel after vaccination is recommended.

Antihistamine administration prior to vaccination is not recommended.

14. Are both Moderna and Pfizer discouraged for people with allergies?

People with allergies have not been discouraged from using either vaccine, which is referred to as contraindicated. There have been a small number of reports of people having rare anaphylactic reactions to both vaccines, which is not unexpected as

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more people are vaccinated. People who have had allergic reactions to other vaccines should discuss the reaction with their doctor to determine if the benefits of a reduced risk of COVID-19 outweigh the potential risk of adverse effects from vaccination.

15. If I don't get the second shot of the vaccines, will I be adequately protected by the first?

The immune response from the first dose is lower than that from both doses with both of the authorized vaccines, and it is not recommended by the FDA to get only a single dose. There is a higher risk of infection with only one dose, and there are examples of people being infected after they received their first dose. It is also likely that the duration of the immune response would be shorter with only one dose of the vaccines.

16. What are the underlying health conditions needed to qualify for the vaccine in group 1b and 1c of the vaccination plan?

These conditions vary from county to county, and the qualifications for vaccination should be verified with your local health department and in collaboration with your personal physician. A directory of local health departments can be found at <https://www.naccho.org/membership/lhd-directory>.

17. Should our Members travel to areas where the vaccine is more readily available to get the vaccine if they live in states where there is a limited supply?

This depends on the circumstances of each individual. Specifically, travel can increase the risk of contracting COVID-19 prior to vaccination. Some areas are also enacting residency requirements, e.g. Florida, where proof of residency is required to be vaccinated.

18. If an individual gets the first shot in one state, how feasible is it for them to get the second one in another state?

It may be difficult to coordinate getting a second shot through a different local health department as they are not set up for easy communication. The qualifications for vaccination should be verified with your local health department and in collaboration with your personal physician. A directory of local health departments can be found at <https://www.naccho.org/membership/lhd-directory>.

19. If an individual gets one vaccine, should they also get another form of vaccine if it is available (e.g. in another state)?

The efficacy of the authorized vaccines is very high, around 95%, and there is no evidence that receiving more than one type of vaccine would improve the immune response or protection from infection. It is also not known if there is a potential for an adverse interaction between different forms of the vaccine.

20. Can an individual get the first shot of one vaccine and the second shot of a different vaccine? For example, a first shot from Pfizer and the second from Moderna?

The effects of the vaccine doses and schedule were determined using a single form of vaccine in randomized and controlled clinical trials. The effect of combining

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different forms of the vaccine has not been studied, and it is unknown if mixing the first and second dose would lead to an appropriate immune response. It is best to receive the vaccine as it has been studied and recommended for use.

21. Is it feasible to wait for authorization of the Johnson & Johnson vaccine due to safety concerns over the currently available mRNA vaccines from Pfizer/BioNTech and Moderna?

The mRNA vaccine is a newer technology, but well-designed randomized and controlled trials have shown both mRNA vaccines to be effective and safe in a large population of people. The Johnson and Johnson vaccine has had promising results in early trials, but it is difficult to predict how long before it will be available to the general public. There have also been some indications from the manufacturer that initial supplies of the Johnson & Johnson vaccine may be limited.

If one of the mRNA vaccines is available, it is a safe and effective choice for preventing COVID-19, and waiting is likely to put individuals at risk for COVID-19 and the potential of severe illness.

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