

COVID-19 VACCINATION

Myth Busters

Myth 1 – The vaccines were developed too quickly to be trustworthy.

Messenger RNA, or mRNA is the technology used in the COVID-19 vaccine. While mRNA technology is new in vaccine development, this technology has been used successfully in cancer treatments. Researchers have been working with this technology for more than 30 years. Vaccines made from mRNA can be made much faster than older vaccines. The Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) based on the imminent need to save lives. The EUA also succeeded in speeding up the vaccination process but the process remains rigorous in the safety evaluation.

Myth 2 – One vaccine is better than the other vaccine.

The Pfizer and the Moderna vaccination use mRNA that triggers our cells to make a protein referred to as “spike protein.” Our immune system does not recognize the spike protein and starts to make antibodies as an immune response similar to how our immune system reacts when infected with SARS-CoV-2 that causes COVID-19 disease. Clinical trials suggest Pfizer provides 95% and Moderna provides 94% protection against Covid-19 after receiving the two recommended doses. The major difference between the Pfizer and the Moderna vaccination is the cold storage requirement and minor differences in dosing and timing. The Pfizer vaccine cold storage requires minus 75 degrees Celsius. The Moderna COVID-19 Vaccine multiple-dose vials are stored frozen between minus 25 to minus 15 degrees Celsius. The cold temperatures are necessary to prevent the enzyme breakdown and destruction of mRNA similar to freezing food to keep it from spoiling. Both vaccines are found to be stable and effective at the recommended storage temperatures based on research and data. Moderna's administered as two 100-microgram doses given 28 days apart and Pfizer's administered as two 30-microgram doses given 21 days apart.

Myth 3 – COVID-19 vaccination contains the virus and/or microchips for human tracking purposes.

The mRNA vaccines do not use the live virus that causes COVID-19. Both the Pfizer and the Moderna vaccination have published the ingredients used in the vaccines. The primary ingredient is the COVID-19 mRNA that creates a spike protein that triggers an immune response in the body to produce antibodies. The antibodies protect us from getting the COVID-19 infection. Other common ingredients include lipids or fat to help deliver mRNA to the cells, and ingredients to help maintain pH and overall stability of the vaccine. The vaccines do not contain microchips or any form of tracking device.

Myth 4 – COVID-19 vaccination cause infertility.

There is no evidence that COVID-19 vaccines or having the COVID-19 disease causes infertility in the short or long term. Several participants involved in the Pfizer vaccine clinical studies became pregnant and are presently

being followed to collect safety outcomes. Based on current knowledge, experts believe that mRNA vaccines are unlikely to pose a risk to pregnant women or the fetus because mRNA vaccines are not live vaccines. [The American College of Obstetricians and Gynecologists' Immunization](#) suggests pregnant and lactating individuals have a discussion with a healthcare professional to help make an informed decision about choosing to be vaccinated. Research is presently being conducted to better understand if there are potential risks of mRNA vaccines to the pregnant person and the fetus.

Myth 5 – COVID-19 vaccination alters DNA.

There is no evidence that COVID-19 vaccines alters DNA in the short or long term. The mRNA vaccines are not live virus vaccines. The vaccines do not enter the nucleus of the cell where a person's DNA is located and cannot alter human DNA; therefore, mRNA vaccines cannot cause any genetic changes.

Myth 6 – COVID-19 vaccination has not been tested on a variety ethnic backgrounds and races.

The clinical trials conducted on the Moderna and Pfizer had a combined total of 68,057 participants. Of those participants 55,290 (81%) identified as white, 6,582 (10%) identified as Black or African American, 2,990 (4%) identified as Asian, 434 (.6%) identified as Native American or Alaska Native, 143 (.2%) identified as Native Hawaiian or other Pacific Islander, 1,491 (2%) identified as multiracial, 490 (.7%) did not report race, and 637 (.9%) identified as other race. There were 16,778 (25%) participants who identified as Hispanic ethnicity.

Myth 7 – A person with a prior COVID-19 infection does not need a vaccination.

The [CDC](#) recommends that you do get the vaccination if you were previously infected with COVID-19. It is unknown how long a person is protected from getting COVID-19 after recovering from the disease. Clinical trials indicate that mRNA COVID-19 vaccines are safe in persons previously diagnosed with COVID-19. It is not recommended to do viral testing to assess for acute SARS-CoV-2 infection or serologic testing to assess for prior infection for the purposes of vaccine decision-making.

Myth 8 – A person must wait at minimum of 90 days to be vaccinated after a COVID-19 infection.

Evidence suggests the COVID-19 reinfection is uncommon in the first 90 days after the initial infection; therefore, a person may decide to delay vaccination until the end of the 90 day period. There is no recommended minimum interval between infection and vaccination at this time. The [CDC](#) recommends people with a current diagnosis of COVID-19 wait to receive the mRNA COVID-19 vaccination until recovered and [criteria](#) have been met for them to discontinue isolation. This recommendation applies to persons who have COVID-19 before receiving any vaccine doses as well as those who have COVID-19 after the first dose but before receipt of the second dose.

Myth 9 – People who received passive antibody therapy don't need a vaccination.

At this time the safety and efficacy of mRNA COVID-19 vaccines in persons who received monoclonal antibodies as part of COVID-19 treatment is not well understood. Based on the estimated half-life of such therapies as well as reinfection being uncommon in the first 90 days following an initial infection, vaccination should be deferred

COVID-19 VACCINATION

Myth Busters

for at least 90 days. This is a precautionary measure until experts have a better understanding of how antibody therapy reacts with vaccine-induced immune responses.

Myth 10 – People who receive a vaccination don't have to worry about wearing a mask or physical distancing.

Whether you receive a COVID-19 vaccination or not, everyone should continue to do their part to help slow the spread of COVID-19. This includes wearing a mask, practicing good hand hygiene and physical distancing.

REFERENCES

American College of Obstetricians and Gynecologists. (December 21, 2020). [Vaccinating Pregnant and Lactating Patients Against COVID-19](#).

Baden, L.R. et al. (December 30, 2020). [Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine](#). *The New England Journal of Medicine*. DOI: 10.1056/NEJMoa2035389.

CDC. (January 6, 2021). [Interim Clinical Considerations for Use of mRNA COVID-19 Vaccines Currently Authorized in the United States](#).

CDC. (December 18, 2020). [Understanding mRNA COVID-19 Vaccines](#).

Forester, Victoria. (January 11, 2021). [Covid-19 Vaccines Can't Alter Your DNA, Here's Why](#). *Forbes*.

Nuzhath, T., et al. (December 11, 2020). [COVID-19 vaccination hesitancy, misinformation and conspiracy theories on social media: A content analysis of Twitter data](#). <https://doi.org/10.31235/osf.io/vc9jb>

[Pfizer-Biontech COVID-19 Vaccine Emergency Use Authorization \(EUA\) Fact Sheet for Healthcare Providers](#)

Polack, F.P. et al. (December 31, 2020). [Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine](#). *The New England Journal of Medicine*. DOI: 10.1056/NEJMoa2034577.

Shapiro, Nina. (December 27, 2020). [The Covid-19 Vaccine Does Not Cause Infertility. Here's Why People Think It Does](#). *Forbes*.

Simmons-Duffin, Selena. (November 17, 2020). [Why Does Pfizer's COVID-19 Vaccine Need To Be Kept Colder Than Antarctica?](#) *NPR Morning Edition*.

[The Moderna COVID-19 Emergency Use Authorization Fact Sheet for Healthcare Providers Administering Vaccine](#)