COVID-19 VACCINES MYTHBUSTERS

MYTH: mRNA vaccines can change a person's DNA.

FACT: **COVID-19 mRNA vaccines do not change or interact with your DNA in any way.** Messenger RNA vaccines—also called mRNA vaccines—are the first COVID-19 vaccines authorized for use in the United States. mRNA vaccines carry a message that teaches our cells how to make a protein that triggers an immune response. The mRNA from a COVID-19 vaccine never enters the nucleus of the cell, which is where our DNA is kept. This means the mRNA cannot affect or interact with our DNA in any way. Instead, COVID-19 mRNA vaccines work with the body's natural defenses to develop immunity to disease safely. Learn more about how COVID-19 mRNA vaccines work.

MYTH: You can get COVID-19 from the mRNA vaccine.

FACT: **It is not possible to get COVID-19 from the vaccine.** mRNA vaccines do not contain live virus. After injection, the COVID-19 mRNA vaccines give instructions for our muscle cells to make a piece of what is called the coronavirus "spike" protein. Once the immune system recognizes this protein, it will develop antibodies against COVID-19, like what happens in natural infection. It will not cause COVID-19. See this video by Dr. Joshua Sharp, UM associate professor of pharmacology, to understand how the Moderna and Pfizer vaccines use mRNA to protect against COVID-19.

MYTH: The contents of the mRNA COVID-19 vaccine contain microchip nanotechnology.

FACT: **There is no microchip nanotechnology inserted into the vaccine.** The vaccine is a white to off-white, sterile, preservative-free, frozen suspension for intramuscular injection. The vaccine contains a nucleoside-modified messenger RNA (mRNA) encoding the viral spike glycoprotein (S) of SARS-CoV-2, the virus that causes COVID-19. The vaccine also includes the following ingredients: lipids, potassium chloride, monobasic potassium phosphate, sodium chloride, dibasic sodium phosphate dihydrate and sucrose.

MYTH: I will immediately be immune after receiving the COVID-19 vaccination.

FACT: **What we know about immunity comes from the available data in the vaccine clinical trials.** It takes approximately two weeks for immunity to develop after completing two doses of the Pfizer or Moderna vaccine.

MYTH: I don't need to wear a mask and avoid close contact with others because I have received both doses of the vaccine.

FACT: **Even after you have received the vaccination, it will be important for everyone to continue following infection prevention recommendations like covering your mouth and nose with a mask, washing your hands often and staying at least six feet away from others.**

Vaccination does not offer 100 percent immunity. There is still a small risk for you to develop mild or asymptomatic COVID-19 disease after exposure to the virus, and you could potentially spread it to others.

MYTH: After vaccination, I will be immune forever.

FACT: **We do not have complete knowledge of how long protection will last following vaccination.** Recent evidence suggests that effective protection lasts for about 8 months. Current recommendations are that immunocompromised individuals should get booster shots after 8 months, and it is possible that booster shots may soon be recommended for everyone.

MYTH: The vaccine will not work against the new COVID-19 strains.

FACT: **The vaccines have shown good effectiveness in preventing severe illness or significant health outcomes against the known variants of the virus, including the Delta variant.** The best strategy to stop the coronavirus from mutating and developing new variants is by slowing down the transmission of this virus. Ongoing prevention practices such as hand washing, social distancing, wearing a mask around others, and avoiding social gatherings will help slow the transmission of COVID-19.

MYTH: The COVID-19 vaccine is not safe.

FACT: **Numerous, well-conducted studies for both of the currently available vaccines have been performed by the world's leading health experts over the last several months.** COVID-19 vaccines have been subjected to a rigorous process for evaluating safety and effectiveness, and have been approved for use by the U.S. Food and Drug Administration (FDA). In fact, given its safety and efficacy, the Pfizer vaccine has recently received full approval from the FDA. In other words, the Pfizer vaccine has the same approval given to any prescription drug that your doctor may prescribe you.

As with any vaccine, there can be some side effects. Generally speaking, data from thorough clinical trials demonstrate that "the known and potential benefits of this vaccine outweigh the known and potential harms of becoming infected with COVID-19," according to the Centers for Disease Control and Prevention (CDC).

MYTH: One vaccine is better than the other.

FACT: **All of the available vaccines are effective at reducing severe illness and lessening transmission.** Current evidence suggests that the Pfizer and Moderna vaccines seems to have greater effectiveness against the variants of the virus than the Johnson & Johnson vaccine; however, that research is still evolving. Any of these three vaccines will offer you benefit over not being vaccinated. Be sure that your second dose is made by the same company as your first dose.

MYTH: The vaccine is too expensive.

FACT: **The vaccine is currently available for free on campus and from many local healthcare providers.** While the University does not charge an administration fee, some vaccination providers have chosen to charge an administration fee for giving the shot to someone. Vaccine providers can get this fee reimbursed by the patient's public or private insurance company or, for uninsured patients, by the Health Resources and Services Administration's Provider Relief Fund.

MYTH: I don't need both doses for the vaccine to be fully effective.

FACT: **The Moderna vaccine requires the second shot to be administered 28 days after the first dose, and the Pfizer vaccine requires a second dose 21 days later.** These two types of vaccines are not interchangeable; you must receive the same kind in your second dose as you did for your first.

The vaccines are effective at preventing symptomatic laboratory-confirmed COVID-19 among persons without previous SARS-CoV-2 infection, with Pfizer reporting 95% effectiveness and Moderna 94.1% effectiveness. High efficacy was observed across sex, race, age, and ethnicity categories, and among people with underlying medical conditions, with Moderna reporting at least 86% efficacy in each category and Pfizer at least 92% efficacy in each category.

MYTH: Pregnant women cannot take the vaccine.

FACT: **The Mississippi State Department of Health (MSDH) shares that, "Pregnant women and lactating women and those who are immunocompromised may take the vaccine; however, consultation with your healthcare provider is recommended."** The CDC notes that there is limited data about the safety of COVID vaccines for pregnant women, though "…experts believe they are unlikely to pose a specific risk for people who are pregnant. However, the actual risks of mRNA vaccines to the pregnant person and her fetus are unknown because these vaccines have not been studied in pregnant women."

MYTH: The COVID-19 vaccine can affect women's fertility.

FACT: **The COVID-19 vaccine will not affect fertility. The COVID-19 vaccine encourages the body to create copies of the spike protein found on the coronavirus's surface.** This "teaches" the body's immune system to fight the virus that has that specific spike protein on it. Confusion arose when a false report surfaced on social media, saying that the spike protein on this coronavirus was the same as another spike protein called syncitin-1 that is involved in the growth and attachment of the placenta during pregnancy. The false report said that getting the COVID-19 vaccine would cause a woman's body to fight this different spike protein and affect her fertility. The two spike proteins are completely different and distinct, and getting the COVID-19 vaccine will not affect the fertility of women who are seeking to become pregnant, including through in vitro fertilization methods.

MYTH: I can't spread the virus because I've been vaccinated.

FACT: **According to the CDC: "It typically takes a few weeks for the body to build immunity (protection against the virus that causes COVID-19) after vaccination.** That means it's possible a person could be infected with the virus that causes COVID-19 just before or just after vaccination and still get sick." This is because the vaccine has not had enough time to provide protection. And some people, even though they are immune (and so they don't get sick), may still carry the live virus in their noses after exposure. Thus, a vaccinated person could still be a spreader.

MYTH: A COVID-19 vaccine will get me sick with COVID-19.

FACT: **None of the authorized and recommended** COVID-19 vaccines or COVID-19 vaccines currently in development in the United States **contain the live virus that causes COVID-19.** This means that a COVID-19 vaccine cannot make you sick with COVID-19. Learn more about how COVID-19 vaccines work.

MYTH: After getting a COVID-19 vaccine, I will test positive for COVID-19 on a viral test.

FACT: **Neither the recently authorized and recommended vaccines nor the other COVID-19 vaccines currently in clinical trials in the United States can cause you to test positive on** viral tests, **which are used to see if you have a current infection.** If your body develops an immune response—the goal of vaccination—there is a possibility you may test positive on some antibody tests. Antibody tests indicate you had a previous infection and that you may have some level of protection against the virus. Experts are currently looking at how COVID-19 vaccination may affect antibody testing results.

MYTH: I can go ahead and get the vaccine because I have COVID-19 now.

FACT: **If you are out of your isolation period — 10 days after the onset of symptoms or 10 days after the test was done if you have no symptoms — and you no longer have symptoms or they have significantly subsided, you can get the vaccine.** It is believed that you have natural immunity for up to 90 days after having had COVID-19. Clinical reports indicate that individuals who get the vaccine shortly after having COVID-19 (e.g., within two weeks) may have a strong immune response and feel ill. Therefore, your doctor may advise you to wait for a period of time less than 90 days before getting the vaccine. Check with your health care provider to decide when to get the vaccine after you have had COVID-19 and recovered.

MYTH: I'm in quarantine, but I don't have any COVID-19 symptoms so I can go ahead and get the vaccine.

FACT: **Persons in the community or outpatient setting who have had a known COVID-19 exposure should not seek vaccination until their** quarantine period **has ended to avoid potentially exposing healthcare personnel and other persons to SARS-CoV-2 during the vaccination visit.**

MYTH: I have already had COVID-19 and recovered so I do not need to get vaccinated.

FACT: **Due to the severe health risks associated with COVID-19 and the fact that re-infection with COVID-19 is possible, the vaccine should be taken regardless of whether you already had a COVID-19 infection.**

At this time, experts do not know how long someone is protected from getting sick again after recovering from COVID-19. The immunity someone gains from having an infection, called natural immunity, varies from person to person. Some early evidence suggests natural immunity may not last very long.

MYTH: There are a limited number of places in Mississippi to get vaccinated.

FACT: **Vaccines are widely available.** They are being made available in vaccine clinics on campus and at the University's Student and Employee Health Pharmacy. Additionally, you can find locations to receive vaccines at the following website: http://vaccines.gov

SOURCES:

Centers for Disease Control and Prevention

- COVID-19 Vaccine Information from the CDC (https://www.cdc.gov/vaccines/covid-19/index.html)
- Clinical Considerations for COVID-19 Vaccination (https://www.cdc.gov/vaccines/covid-19/info-by-product/clinical-considerations.html)

Mississippi State Department of Health

- Vaccine Information from MSDH (https://msdh.ms.gov/msdhsite/_static/14,0,420,976.html)

University of Mississippi Medical Center

- Eight Questions to Consider Before Taking COVID-19 Vaccines (https://umc.edu/news/Miscellaneous/2021/January/JanuaryCONSULT/CON010120A.html)
- COVID-19 FAQs from UMMC (https://umc.edu/CoronaVirus/Vaccinations/FAQs.html)

UM Vaccine Information Page

- Information and Updates from UM (https://coronavirus.olemiss.edu/vaccination/)