The Wartburg biology department debunks common misconceptions about the COVID-19 vaccine

Myth: The FDA hasn't approved the vaccine and therefore it's too risky.

Great news! The FDA has granted full approval to the Pfizer vaccine! It is likely that full approval for the other vaccines will come soon.

The other SARS-CoV-2 vaccines have been approved via an emergency use authorization after multiple clinical trials with over 30,000 participants. The mRNA technology, unprecedented cooperation among all scientists, and decades of research into the other SARS virus (SARS1) positioned scientists to move rapidly through vaccine development. Currently, 100s of millions of doses have been administered of the vaccines and adverse reactions have been minimal. The most common adverse reactions are arm soreness and chills over 24-48 hours. There have been no long-term issues. As far as allergic reactions, there are 11 per 1 million doses - that compares extremely favorably with the antibiotic penicillin that has 1 per 2,000 doses.

Myth: The COVID vaccine is too "new" and therefore is too risky.

Development for the vaccine we have for SARS-CoV-2 built upon the work to develop a vaccine for SARS-CoV-1. When the original SARS virus emerged in humans, it had a much higher mortality rate than the current virus, and vaccine development started immediately. The SARS-CoV-1 mRNA vaccines developed at that time were found to be safe and effective in animals, but the SARS1 epidemic was managed by masking and distancing, and the vaccine was never tested in humans because SARS1 was no longer spreading in humans. Because the two viruses are very similar, a great deal of the preliminary work in developing a vaccine for SARS-CoV-2 was already done. This allowed drug companies to move very quickly to animal trials and then human trials. Additionally, an advantage of mRNA vaccines is that they can be produced quickly compared to other types of vaccines.

The SARS-CoV-2 vaccines have been given to billions of people around the world, and both the clinical trials and the distribution of the vaccines after approval have been watched very closely. The fact that very rare side effects (less than 1 per one million doses) were discovered with the Johnson & Johnson vaccine indicates the safety process is working. There are really no plausible biological mechanisms for long-term side effects from a vaccine (in particular, mRNA molecules are notoriously unstable and degrade soon after being injected), so any side effects that are likely will have already been identified.

Myth: I'm healthy and the impact of COVID, if I were to contract it, would be minimal, therefore why take the risk of the vaccine?

Currently, we have a variant of the virus (Delta) that causes increased viral load and spreads more easily to others. Even if you are a healthy young individual you can experience symptoms severe enough to end up in the hospital or with post-COVID issues that can be severe enough to cause disability (including college athletes). A study published in JAMA Cardiology found the inflammatory heart condition myocarditis in 37, or 2.3%, of 1,597 Big Ten college athletes given a cardiac MRI after testing positive for COVID-19. The majority of those students reported no symptoms prior to the MRI.

Also, what if you are asymptomatic and pass the infection on to your family members and friends who may be more vulnerable? Your vaccination also protects the people around you!

Myth: The vaccine causes infertility.

There is no medical evidence that the vaccine causes infertility. Furthermore, there is no medical or scientific mechanism to explain how this vaccine could interact with a woman's reproductive organs or have any interaction with an egg that's been released or fertilized. This claim has been heavily promoted by an anti-vaccine activist who has made similar false claims about other vaccines.

*On the other hand, there is evidence that **t**he COVID-19 virus can be found in male sperm, impact male sex hormone production, and cause erectile dysfunction.*

Myth: The virus will always be with us, so we just need to find a way to live with it.

It is probably true that this virus will always be with us. That means you have two choices about how to develop immunity: 1) get vaccinated or 2) get sick. The risks of vaccination are thousands of times smaller than the risks of getting sick and you can control when you get the vaccine. Even with a mild case of illness, you may feel sick for a week and have lingering fatigue for several weeks. Do you have time for that in your schedule? How will it impact your academic career and extracurricular activities?

We also know vaccines produce better protection against infection compared to people who had immunity from a previous COVID infection. Getting vaccinated protects you from hospitalization and severe disease. An examination of data from 40 states showed that between 0.1%-5% of the hospitalized COVID patients were fully vaccinated. Furthermore, your vaccination protects others that are at high risk from getting COVID, ending up in the hospital, and potentially dying.