Commentary: FAQ on COVID-19 vaccinations

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EDITOR'S NOTE: The information contained in this article is not meant to take the place of advice or direction from your doctor or primary health care provider.

After a punishing winter surge of COVID-19 in our country, vaccines newly authorized by the FDA offer a great deal of hope. These vaccines were developed in record time due to the early genetic sequencing of the virus that causes COVID-19, SARS-CoV2.

In addition, federal support of the companies producing vaccine allowed them to proceed with research and development without the usual financial risks. These factors, plus many willing early clinical trial volunteers, have contributed to the early availability of vaccines.

Basic information about the vaccines

The first vaccines to be authorized are the mRNA—messenger RNA—vaccines from Pfizer/BioNTech and Moderna. This technology has been studied for decades and was put to use effectively, as these vaccines are, respectively, 95 percent and 94 percent effective.

The mRNA has genetic instructions on how to make the spike protein, which is the immunogenic antigen—protein that induces an immune response—of the SARS-CoV2 virus. This mRNA is encapsulated in lipids to protect it on the way to the cell. Once in the cell, instructions are delivered, and the mRNA is destroyed. When spike protein is produced, the body makes antibodies to it.

The mRNA vaccines require freezer storage due to the genetic material used in them.

The Johnson & Johnson and Astra-Zeneca vaccines are viral vector vaccines. This technology uses a virus that cannot reproduce to deliver genetic instructions for the spike protein to the cell.

Novavax uses a recombinant—made in the lab—protein plus an adjuvant—agent that enhances an immune response—to stimulate the immune system.

An advantage of the Johnson & Johnson, Astra-Zeneca and Novavax vaccines is they do not require freezer storage and can be stored in a refrigerator.

These are the leading vaccine candidates, and progress of these and other candidates can be followed in the Coronavirus Vaccine Tracker.

The Johnson & Johnson vaccine is in the final stages of study and likely will be the next vaccine candidate authorized for use in the United States. An advantage is it was designed to be a single dose.

Astra-Zeneca already is being used in some other countries, and studies in the United States are being completed.

Novavax will be completing its final clinical trials soon.

The efficacy rates of the three vaccines in preventing COVID-19 illness vary and, overall, are in the 70-85 percent range.

It is encouraging clinical trials suggest all the vaccines appear to prevent very severe cases and death from COVID-19. Studies are ongoing to determine if vaccines decrease transmission rates, as well, and this also looks promising.

Virus variants and vaccines

Variants to the virus are emerging, due to widespread transmission of the virus and so many cases occurring worldwide. The variants are appearing in this country and appear to be more transmissible.

Early studies indicate vaccines are effective against the variants, but there is some reduced efficacy against some of the variants.

One of the strategies in controlling further emergence of variants is enhanced control of the virus and disruption of its transmission. Vaccination can help accomplish this goal.

Common questions about vaccinations

There are some common questions asked about vaccination. **As always, consult your health care provider about what is right for you.**

What are the side effects of the vaccine and is it safe?

It is considered a safe vaccine. There are short term side effects that occur, including sore arm, fatigue, muscle aches and pains, headache, fever and chills. These typically occur within two to three days of the vaccine. Side effects are more common after the second dose and in younger people.

I have had allergic reactions in the past. Should I take the vaccine?

There are uncommon allergic reactions that can occur after the vaccine, and these have been treated and resolved. These reactions appear to be more common in those who have a history of allergy. Those with a history of allergies should be monitored for 30 minutes, instead of the usual 15 minutes of monitoring for other persons.

If there is a known allergy to a component of the vaccine, do not take the

vaccine. Polyethylene glycol (PEG) is in the mRNA vaccine. This compound is commonly found in foods, beverages, shampoos, toothpaste and some medications, and some people have a known allergy to it. Polysorbate is a similar compound, and those with a known allergy to it should also avoid the mRNA vaccines.

What if I experience side effects after getting a COVID vaccine?

Most of the side effects mentioned above are short-lived and can be treated successfully with acetaminophen or ibuprofen. Anyone with an immediate allergic reaction to the first dose of the vaccine should not receive a second dose of mRNA vaccine.

Can I take acetaminophen or ibuprofen before getting the vaccine to avoid side effects?

There have been some small studies of childhood vaccines that suggest taking acetaminophen or ibuprofen before taking vaccine can decrease antibody response, so it is not recommended to take these before the vaccine. But they can be taken at the onset of any side effects.

If I already have had COVID-19, should I get the vaccine?

Reinfection with COVID-19 is possible; so, vaccination is recommended. Some experts recommend waiting 90 days before getting a vaccination, since natural immunity typically lasts that long, and vaccine side effects could be higher before that time. Those who have received monoclonal antibodies or convalescent plasma for treatment of COVID-19 should wait 90 days before getting COVID-19 vaccine.

We are more than fortunate to have effective vaccines against this disease, which has killed more than 450,000 Americans. More than 35 million people in the United States have received the mRNA vaccines as of this writing.

As Louis Pasteur said, “Luck favors the prepared mind.” It has been a combination of hard work, American ingenuity and government support that has facilitated the rapid production of these vaccines.

Dr. Jan Patterson is a clinician in infectious diseases and integrative medicine with the UT Health San Antonio Long School of Medicine and University Hospital and clinics. She attends First Baptist Church in San Antonio. The information contained in this article is not meant to take the place of advice or direction from your doctor or primary health care provider.

EDITOR’S NOTE: The author’s bio was updated to clarify UT Health San Antonio Long School of Medicine and University Hospital are separate entities.