How was the COVID-19 vaccine developed?

Although COVID-19 is a new virus, scientists have been developing the mRNA technology behind the COVID-19 vaccines for decades.

- **1990s** mRNA vaccine research begins
- **2000s & 2010s** mRNA vaccine research progresses for other viruses like influenza, Zika, and rabies

**2019** Scientists identify COVID-19

**Within weeks** Scientists are able to develop a COVID-19 vaccine based on existing technology

**2020**

- **Phase I** clinical trials begin; Vaccine is tested on a small number of people to make sure it is safe
- **Phase II** clinical trials begin; Vaccine is tested on a greater number of people to make sure it is producing the required immune response
- **Phase III** clinical trials begin; Vaccine is tested on thousands of people to prove it works

**YOU ARE HERE** The vaccine begins to be available to the public

How does the COVID-19 vaccine work?

Scientists focus on the genetic sequence for the virus’s “spike” protein. This is used to synthesize an mRNA sequence – instructions that cells can use to make the “spike” protein.

When you get your injection the vaccine particles bump into cells inside your body and bind to them, releasing the mRNA that was enveloped inside the vaccine. Your cells read the mRNA sequence and build spike proteins. The mRNA from the vaccine eventually goes away on its own, leaving no permanent trace in your body.

Then, if you are exposed to the virus after being vaccinated, your body’s immune system will recognize the spike protein and fight the infection.

These vaccines benefit from decades of prior virus research and have followed all of the standard stages of development. These vaccines had to complete each phase of a clinical trial and no stages of development were skipped.
How do I know the vaccine will work for me?

- Both of the vaccines authorized by the FDA have been found to be >94% effective in clinical trials.

- The clinical trials included a diverse group of people to make sure the vaccine was effective for everyone. Check out the data to the right!

- It is your decision whether to get the vaccine. We encourage you to talk to your primary care provider or other trusted health care team member about your specific health and medication concerns.

What should I expect after I get the vaccine?

Side effects after vaccination such as fever, fatigue, headache, and muscle aches are expected. These side effects are evidence that the vaccine is working as it should be and the body is building immunity! These symptoms typically resolve within 24–48 hours.

It takes a few weeks for the body to build immunity after vaccination. A person could be infected with COVID–19 just before or just after vaccination and get sick. This is because the vaccine has not had enough time to provide protection.

This is why it is important to continue to social distance, wash hands, and wear masks even after vaccination. For more information about COVID–19 and the vaccine, visit here: https://www.cdc.gov/vaccines/covid-19/index.html