

## COVID-19 mRNA Vaccines

### What are they?

**mRNA vaccines are a type of vaccine that protect against infectious diseases.**

Most vaccines help our bodies develop an immune response to a disease with a weakened or inactivated version of the disease. mRNA vaccines, however, work by giving our cells “instructions” to make a protein that triggers an immune response.

This immune response produces “antibodies” that protect us from getting infected if the real virus enters our bodies.

mRNA technology is new, but not unknown. It has been studied for more than a decade and mRNA vaccines have been studied in early stage clinical trials for other diseases such as influenza, Ebola, Zika, and rabies.

The COVID-19 mRNA vaccines have undergone the same **rigorous safety assessments** as all vaccines are required to before they are authorized for use in the United States by the Food and Drug Administration (FDA).

*Note: mRNA vaccines do not contain a live virus and do not carry a risk of causing disease in the vaccinated person.*

### How do they work?

**mRNA is used as the instruction manual for building immunity to the SARS-CoV-2 virus.**

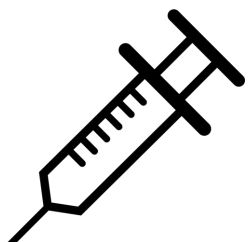
mRNA vaccines use a piece of messenger RNA (mRNA) as a set of instructions that tells our bodies to make a specific “spiked” protein on the surface of our cells - the protein that is found on the surface of the SARS-CoV-2 virus (the virus that causes COVID-19). After the protein is made, the cells break down the “instructions” and discard them.

Our immune system recognizes that the protein doesn't belong on the cell's surface and begins to **build an immune response** by creating antibodies.

If the real SARS-CoV-2 virus enters the body, these antibodies will bind to the virus to neutralize it and prevent it from entering the body's cells, preventing the COVID-19 disease.

**After vaccination**, continue to follow all preventive measures including: covering the mouth and nose with a mask when around others, staying at least 6 feet away from others, avoiding crowded places, and washing hands often.

## Can mRNA vaccines alter DNA?



**COVID-19 mRNA vaccines will not alter DNA.** The mRNA used in the vaccine never enters the nucleus of the cell (where our DNA is stored) and therefore has no interaction with the cell's DNA.

Once mRNA provides instructions to the cells in the body, the cells will build the protein specific to the SARS-CoV-2 virus on their surface and breakdown and discard the “instructions” (mRNA) after the protein is built.

