

# What are mRNA vaccines and how do they work?

## What causes COVID-19?

COVID-19 is caused by a virus. This virus has spikes on its surface that make it look like a crown. That's why we call it a coronavirus: "corona" means "crown" in Latin. These spikes are "spike proteins." They make great targets for vaccines.

## What is mRNA?

mRNA is short for "messenger RNA." It sends orders to your cells. These orders tell your body how to make proteins.

## What is in the vaccine?

The vaccine is made of mRNA wrapped in a coating. It's like a piece of chocolate covered by a candy shell. This coating helps the orders get to your cells quickly and safely. Then, it melts away.

## How does the vaccine work?

The mRNA in the shot teaches your body how to make only the spike proteins—not the whole virus. If the real virus enters your body later, your body will remember these spikes and know how to deal with them.

The vaccine can't give you COVID-19. It does **NOT** contain the virus that causes it. The vaccine only teaches your cells how to make 'spikes' that your body can learn from—like a 3D model. It can't change DNA or make you sick from other diseases.

After you get the shot and your body trains to fight the real virus, you might feel tired or sore or even run a fever. These are normal signs that the vaccine is working.

**Antibody**

After the mRNA sends its orders, your body breaks it down and gets rid of it.

**Which COVID-19 vaccines are mRNA vaccines?**

The **Pfizer and Moderna vaccines** are the only mRNA vaccines authorized for use against COVID-19 in the U.S.



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**Getting vaccinated?**

For information about COVID-19 vaccine, visit: [cdc.gov/coronavirus/vaccines](https://www.cdc.gov/coronavirus/vaccines)