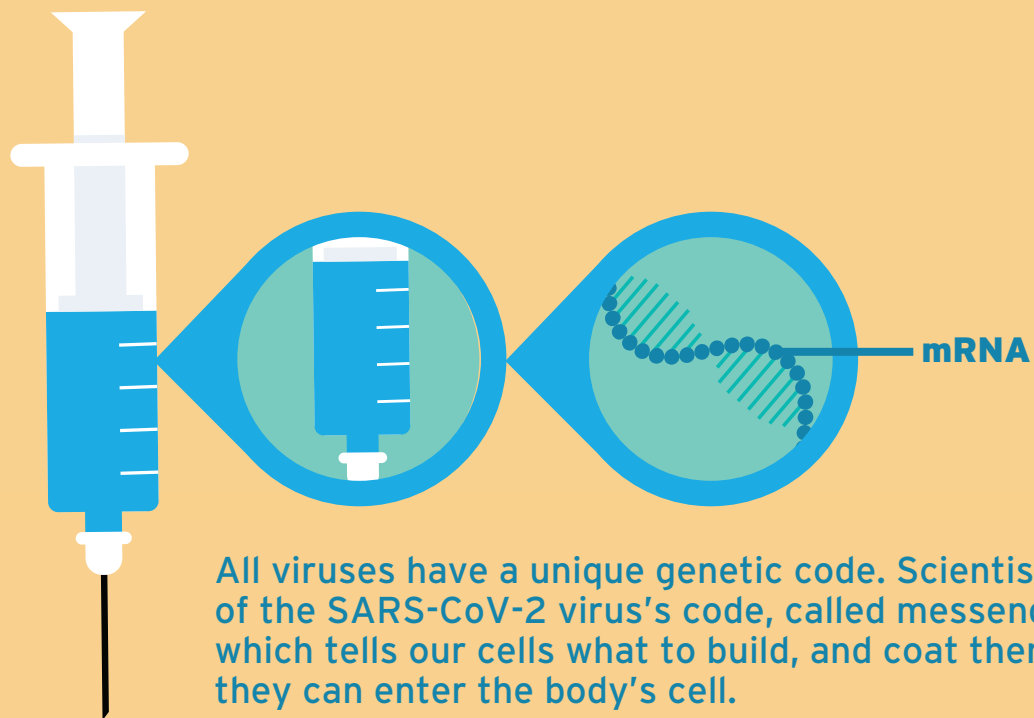


# How mRNA vaccines work

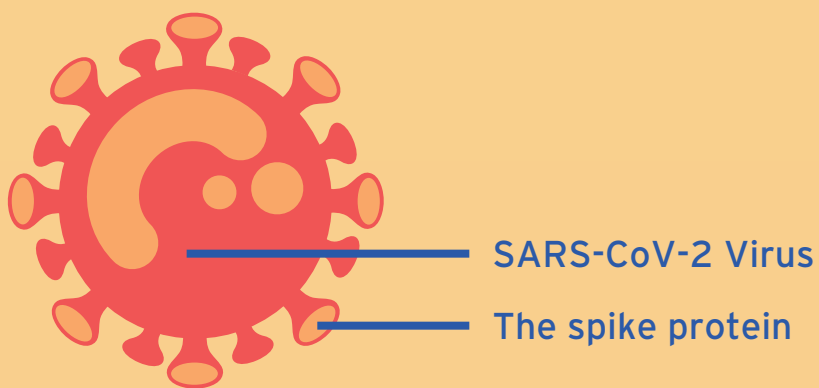
Every virus is different.

The virus that causes COVID-19 is called SARS-CoV-2.



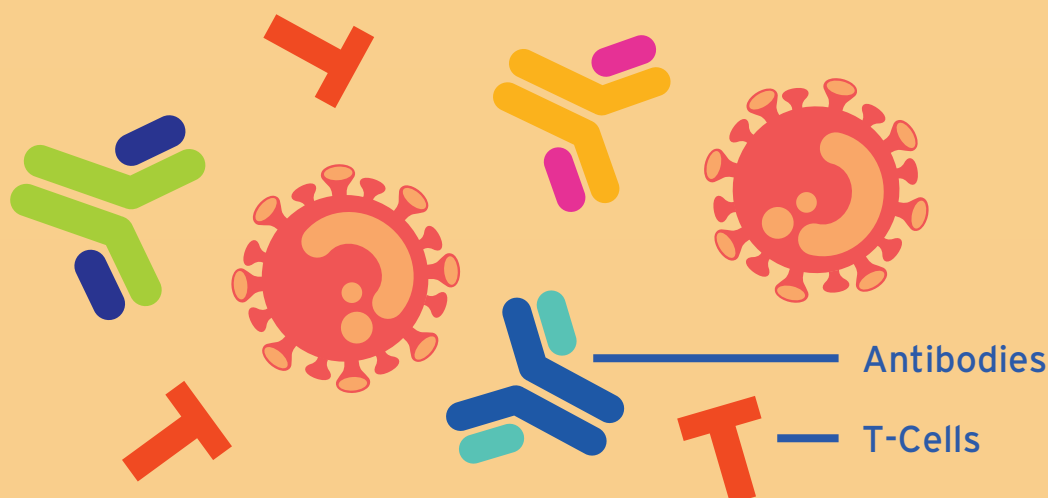
All viruses have a unique genetic code. Scientists take part of the SARS-CoV-2 virus's code, called messenger RNA (mRNA), which tells our cells what to build, and coat them in a lipid so they can enter the body's cell.

This is what is included in the vaccine to help build an immune response.



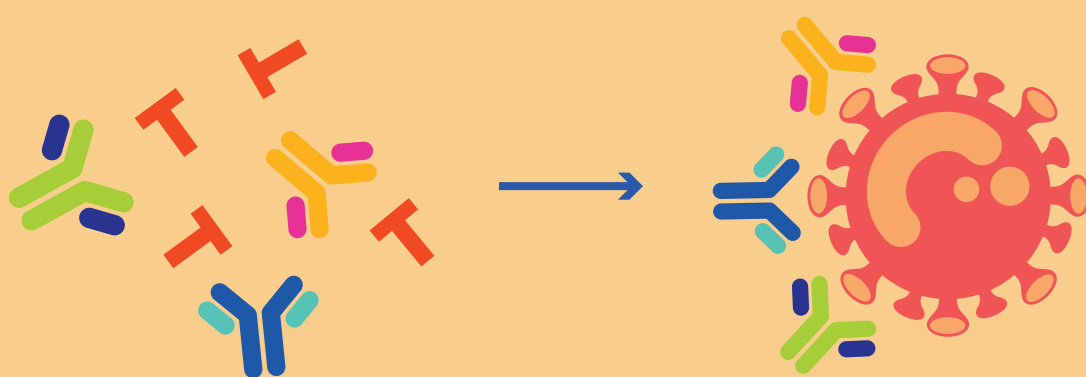
## CREATE

The mRNA tells the cells to make a specific part of the SARS-CoV-2 virus: the spike protein.



## LEARN

The immune system then produces antibodies and activates T-cells to destroy the spike proteins.



## PROTECT

If you are exposed to the virus in the future, your immune system will quickly recognize the spike protein and has the antibodies and T-cells ready to begin destroying the virus.

## The Benefit of Getting Vaccinated

The virus that causes COVID-19 replicates quickly. Without the vaccine, your body has to identify the virus, learn how to fight it and carry out an immune response. In the meantime, the virus can replicate to a level beyond what your immune system can handle – which means you feel sick. With the vaccine, your body can more quickly identify the virus and skip straight to starting its immune response.

## mRNA technology isn't new.

mRNA vaccines are a product of decades of study on RNA therapies and treatment by medical scientists. mRNA therapies are being used to develop personalized cancer treatments, as well as vaccines for infectious diseases such as Zika virus. Researchers are also exploring whether mRNA treatments can be used as protein-replacement therapies for rare conditions such as the blood-clotting disorder haemophilia.