

# mRNA Vaccines

## A Plain Language Guide



mRNA vaccines are a new type of vaccine that are able to protect our bodies from infectious diseases. The type of vaccine that has been used in the past would use a weakened or inactive germ in the vaccines that would go into our bodies. mRNA vaccines do not work like that. mRNA vaccines instead teach our cells how to make a protein, or even just part of a protein – that will trigger an immune response. That immune response, which produces antibodies, is what protects us from getting sick if the real virus enters our bodies.

### Lets look closer at how the COVID-19 mRNA vaccines work....

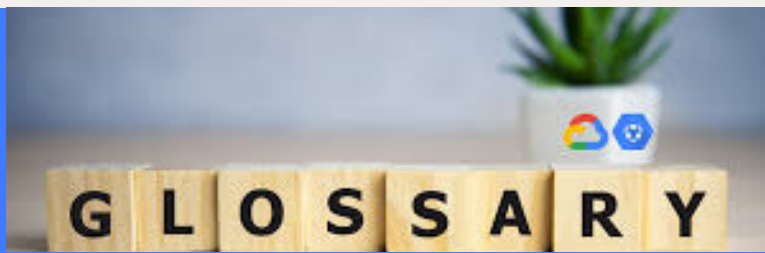
COVID-19 mRNA vaccines give instructions to our cells to make part of the spike protein that is harmless. The spike protein is found on the surface of the virus that causes COVID-19



- The COVID-19 mRNA vaccine is given in a shot in the upper arm muscle. Once the instructions (or mRNA) are inside the immune cells, the cells use them to make the protein piece. After the protein piece is made, the cell breaks down the instructions and gets rid of them.
- Next the cell displays the protein piece on its surface. Our immune system knows that it doesn't belong there and starts fighting it off. This is called building an immune response and making antibodies, like what happens in a natural infection of covid-19.



At the end of the process, our bodies have learned how to protect us against a future infection. The benefit of using an mRNA vaccine is that we can be protected from the disease without the risk of getting the disease.



**Immune Response** – how your body recognizes and defends itself against bacteria, viruses, and substances that appear foreign and harmful

**Immune System** – what defends your body against infection

**Antibodies** – a protein made by the body’s immune system when it detects harmful substances.

**Covid-19** – A newer illness spreading around the world. It is also called coronavirus

**mRNA** – messenger Ribonucleic Acid



Source:  
<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/mRNA.html>

## Key points:

mRNA COVID-19 vaccines **do not** use the actual virus that causes COVID-19.

mRNA do not affect or interact with our DNA in any way.

mRNA never enters the nucleus of the cell (center of the cell) that is making the protein piece. The nucleus or center of the cell is where our DNA or genetic material is kept.

The cell breaks down and gets rid of the mRNA soon after it is finished using the instructions. Our bodies are made to remember things without the instructions.

Learn more at:

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/mRNA.html>