

How The Pfizer/BioNTech COVID-19 Vaccine Works

Understanding the virus that causes COVID-19.

Coronaviruses, like the one that causes COVID-19, are named for the crown-like spikes on their surface, called spike proteins. These spike proteins are ideal targets for vaccines.

What is mRNA?

Messenger RNA, or mRNA, is genetic material that tells your body how to make proteins.

What is in the Vaccine?

The COVID-19 mRNA Vaccine BNT162b2 contains:

- The active substance, which is BNT162b2 RNA. Each dose is 0.3 mL with 30 microgramsmRNA.
- The vaccine contains polyethylene glycol/macrogol (PEG) as part of ALC-0159

The other ingredients are:

- ALC-0315 = (4-hydroxybutyl)azanediyl) bis(hexane-6,1-diyl)bis(2-hexyldecanoate)
- ALC-0159 = 2[(polyethylene glycol) -2000]-N, N-ditetradecylacetamide
- 1,2-Distearoyl-sn-glycero-3-phosphocholine
- cholesterol
- potassium chloride
- potassium dihydrogen phosphate
- sodium chloride
- disodium hydrogen phosphate dihydrate
- sucrose

The vaccine does not contain:



Eggs



Preservatives



Mercury



Antibiotics

How does the vaccine work?

The mRNA in the vaccine teaches your cells how to make copies of the spike protein. If you are exposed to the real virus later, your body will recognize it and know how to fight it off.

Facts

The vaccine **does not contain any virus**, so it cannot give you COVID-19. It cannot change your DNA in any way.

When your body responds to the vaccine, it can sometimes cause a mild fever, headache, or chills. This is completely normal and a sign that the vaccine is working.

After the mRNA delivers the instructions, your cells break it down and get rid of it.

