



WHAT IS A VACCINE?



A vaccine is a substance used to stimulate the production of antibodies and provide immunity against one or several diseases, prepared from the causative agent of a disease, its products, or a synthetic substitute, treated to act as an antigen without inducing the disease.

Ingredients & misinformation

None of COVID-19 vaccines can give you the virus. These vaccines contain material from the virus that causes COVID-19 that gives our cells instructions for how to make a harmless protein that is unique to the virus. After our cells make copies of the protein, they destroy the genetic material from the vaccine.

Pfizer vaccine

The Pfizer-BioNTech COVID-19 Vaccine includes the following ingredients: mRNA, lipids ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 2 [(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 1,2-Distearoyl-sn-glycero-3-phosphocholine, and cholesterol), potassium chloride, monobasic potassium phosphate, sodium chloride, dibasic sodium phosphate dihydrate, and sucrose.

Moderna vaccine

The Moderna COVID-19 Vaccine contains the following ingredients: messenger ribonucleic acid (mRNA), lipids (SM-102, polyethylene glycol [PEG] 2000 dimyristoyl glycerol [DMG], cholesterol, and 1,2-distearoyl-sn-glycero-3-phosphocholine [DSPC]), tromethamine, tromethamine hydrochloride, acetic acid, sodium acetate, and sucrose.

More info on ingredients can be found at: [fda.gov](https://www.fda.gov)





Identifying the source of the outbreak

The novel (new) coronavirus first appeared in Wuhan, China, and was named COVID-19 to show it was discovered in 2019. Epidemiologists—scientists who study diseases—determined that the virus possibly came from an animal sold at a market.

Since the virus has since spread across many countries and has affected a large number of people, it is now classified as a pandemic.



EPIDEMIC

An epidemic is the rapid spread of disease to a large number of people in a given population within a short period of time.



PANDEMIC

An epidemic that has spread over several countries or continents, usually affecting a large number of people.

How was the vaccine made so fast?

Collaboration combined with prior vaccine research helped develop a COVID-19 vaccine quickly, as well as research from the 2003 SARS outbreak. That information helped researchers understand how the coronavirus works. In January 2020, China gave scientists the genetic code for the virus. Once scientists had the genetic code, they were able to deploy new mRNA technology which had been in the works for the past ten years but not yet in vaccine form. The new technology has been called a game changer in vaccine development. Companies were also able to recruit thousands of volunteers for their studies. The number of trial participants at the same time was also a first in history.



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