



## COVID-19

# Moderna COVID-19 Vaccine (also known as Spikevax): Overview and Safety

Updated May 25, 2022

### Recommended for People 18 Years and Older

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## General Information

**Manufacturer:** ModernaTX, Inc.

**Type of Vaccine:** [mRNA](#)

**Number of Shots:** 2 doses in the primary series, given 4–8 weeks apart.

**How Given:** Shot in the muscle of the upper arm

People ages 18 years and older who are moderately or severely immunocompromised should get a third dose at least 4 weeks after their second dose.

**Does NOT Contain:** Eggs, preservatives, latex, metals  
[See full list of ingredients below](#)

**Name:** mRNA-1273

**Booster Shots:** People ages 18 years and older who received a Moderna primary series should get a booster. Some people should get a second booster.

**Brand name:** Spikevax

## Moderna (Spikevax) Name Change

Moderna (Spikevax) COVID-19 vaccine received U.S. Food and Drug Administration (FDA) approval on January 31, 2022, for individuals ages 18 years and older. Once vaccines are approved by the FDA, companies can market the vaccines under brand names. Spikevax is the brand name for the Moderna COVID-19 vaccine. The FDA-authorized Moderna COVID-19 vaccine for individuals ages 18 years and older will now be marketed as Spikevax. **No change has been made to the vaccine's formula** with the name change.

## Safety Data Summary

- COVID-19 vaccines have undergone—and will continue to undergo—the most intensive safety monitoring in U.S. history. Evidence from the hundreds of millions of COVID-19 vaccines already administered in the United States, and the billions of vaccines administered globally, demonstrates that they are [safe](#) and [effective](#).
- [Side effects](#) that happen within 7 days of getting vaccinated are common but are mostly mild. Some people have

reactions that affect their ability to do daily activities.

- Side effects throughout the body (such as fever, chills, tiredness, and headache) are more common after the second dose of the vaccine.
- [Severe allergic reactions](#) to vaccines are rare but can happen.
- There is a rare risk of [myocarditis and pericarditis](#) associated with mRNA COVID-19 vaccination, mostly among males ages 12 through 39 years. The rare risk may be further reduced with a longer interval between the first and second dose. Learn more about [the timing for your second dose](#).

Learn more about [vaccine safety monitoring](#) after a vaccine is authorized or approved for use.

## How Well the Vaccine Works

- Vaccines reduce the risk of COVID-19, including the risk of severe illness and death among people who are fully vaccinated.
- COVID-19 vaccines are effective, but studies have shown vaccine protection declines over time especially with the Omicron variant. Learn more about getting a [booster](#) shot to enhance or restore protection against COVID-19.
- All FDA-approved or authorized COVID-19 vaccines provide substantial protection against COVID-19 hospitalization and death.
- CDC will continue to provide updates as we learn more.

Learn about [demographic information for people who participated in the trials \[PDF – 54 pages\]](#) [↗](#).

## Moderna COVID-19 Vaccine Ingredients

All COVID-19 vaccine ingredients are safe. Nearly all the ingredients in COVID-19 vaccines are ingredients found in many foods—fats, sugars, and salts. The Moderna COVID-19 vaccine also contains a harmless piece of messenger RNA (mRNA). The COVID-19 mRNA teaches cells in the body how to create an effective [immune response](#) to the virus that causes COVID-19. This response helps protect you from getting sick with COVID-19 in the future. After the body produces an immune response, it discards all the vaccine ingredients, just as it would discard any substance that cells no longer need. This process is a part of normal body functioning.

All COVID-19 vaccines are manufactured with as few ingredients as possible and with very small amounts of each ingredient. Each ingredient in the vaccine serves a specific purpose as seen in the table below.

In the past, there has been one formula for the Moderna COVID-19 vaccine. A full dose of this formula (0.5 mL) is used for the primary series, and a half dose (0.25 mL) is given as a booster. Now, Moderna makes a second formula for booster doses only. This formula is 0.5 mL like the primary dose vaccine. It also includes all of the same ingredients, but some of the ingredients are in different amounts.

## Full list of ingredients

The Moderna COVID-19 vaccine contains the following ingredients:

Type of Ingredient	Ingredient	Purpose
Messenger ribonucleic acid (mRNA)	<ul style="list-style-type: none"><li>• Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2</li></ul>	Provides instructions the body uses to build a harmless piece of a protein from the virus that causes COVID-19. This protein causes an immune response that helps protect the body from getting sick with COVID-19 in the future.

Lipids (fats)	<ul style="list-style-type: none"> <li>• PEG2000-DMG: 1,2-dimyristoyl-rac-glycerol, methoxypolyethylene glycol</li> <li>• 1,2-distearoyl-sn-glycero-3-phosphocholine</li> <li>• BotaniChol® (non-animal origin cholesterol)</li> <li>• SM-102: heptadecane-9-yl 8-((2-hydroxyethyl) (6-oxo-6-(undecyloxy) hexyl amino) octanoate</li> </ul>	Work together to help the mRNA enter cells.
Salt, sugar, acid stabilizers, and acid	<ul style="list-style-type: none"> <li>• Sodium acetate</li> <li>• Sucrose (basic table sugar)</li> <li>• Tromethamine</li> <li>• Tromethamine hydrochloride</li> <li>• Acetic acid (the main ingredient in white household vinegar)</li> </ul>	Work together to help keep the vaccine molecules stable while the vaccine is manufactured, frozen, shipped, and stored until it is ready to be given to a vaccine recipient.

## Ingredients that are NOT used in COVID-19 vaccines

The above table lists ALL ingredients in the Moderna COVID-19 vaccine. There are NO ingredients in this vaccine beyond what is listed in the table. The Moderna COVID-19 vaccine has

- **No preservatives** like thimerosal or mercury or any other preservatives.
- **No antibiotics** like sulfonamide or any other antibiotics.
- **No medicines or therapeutics** like ivermectin or any other medications.
- **No tissues** like aborted fetal cells, gelatin, or any materials from any animal.
- **No food proteins** like eggs or egg products, gluten, peanuts, tree nuts, nut products, or any nut byproducts (COVID-19 vaccines are not manufactured in facilities that produce food products).
- **No metals** like iron, nickel, cobalt, titanium, rare earth alloys, or any manufactured products like microelectronics, electrodes, carbon nanotubes or other nanostructures, or nanowire semiconductors.
- **No latex.** The vial stoppers used to hold the vaccine also do not contain latex.

### Related Pages

- › [Possible Side Effects](#)
- › [Safety of COVID-19 Vaccines](#)
- › [Benefits of Getting Vaccinated](#)
- › [How Vaccines Work](#)
- › [mRNA Vaccines](#)



### For Healthcare Workers

[Moderna COVID-19 Vaccine](#): General information, schedule and administration overview.

### More Information

[Moderna's COVID-19 Vaccine Fact Sheet for Recipients and Caregivers \[PDF - 6 pages\]](#) 

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*MMWR*: Allergic Reactions Including Anaphylaxis After Receipt of the First Dose of Moderna COVID-19 Vaccine — United States, December 21, 2020–January 10, 2021

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Safety and Reactogenicity Data

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