



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™




COVID-19

Pfizer-BioNTech COVID-19 Vaccine Overview and Safety

Updated May 10, 2021

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NOTICE: FDA [authorized](#)  the Pfizer-BioNTech COVID-19 Vaccine for emergency use in adolescents 12 and older. The [Advisory Committee on Immunization Practices](#) is meeting to discuss a recommendation for the use of this vaccine for the prevention of COVID-19 in persons aged 12 years and older.

General Information

Name: BNT162b2

Manufacturer: Pfizer, Inc., and BioNTech

Type of Vaccine: [mRNA](#)

Number of Shots: 2 shots, 21 days apart

How Given: Shot in the muscle of the upper arm

Does NOT Contain: Eggs, preservatives, latex

[Full List of Ingredients \[PDF – 6 pages\]](#) 

Who Should Get Vaccinated

- The Pfizer-BioNTech vaccine is recommended for people aged 16 years and older.
- Learn more about [how CDC is making COVID-19 vaccine recommendations](#) and [CDC's vaccine rollout recommendations](#).

Who Should NOT Get Vaccinated

- **If you have had a severe allergic reaction (anaphylaxis) or an immediate allergic reaction**, even if it was not severe:
 - **to any ingredient in an mRNA COVID-19 vaccine** (such as polyethylene glycol), you should not get an mRNA COVID-19 vaccine.*
 - **or after getting the first dose of the vaccine**, you should not get a second dose of either of the mRNA COVID-19 vaccines.
- An allergic reaction is considered severe when a person needs to be treated with epinephrine or EpiPen® or if they must go to the hospital. Learn about [common side effects of COVID-19 vaccines](#) and when to call a doctor.
- An immediate allergic reaction means a reaction within 4 hours of getting vaccinated, including symptoms such as hives, swelling, or wheezing (respiratory distress).

If you aren't able to get an mRNA COVID-19 vaccine, you may still be able to get a different type of COVID-19 vaccine. Learn more [information for people with allergies](#).

Possible Side Effects

In the arm where you got the shot:

- Pain
- Redness
- Swelling

Throughout the rest of your body:

- Tiredness
- Headache
- Muscle pain
- Chills
- Fever
- Nausea

These side effects usually start within a day or two of getting the vaccine. Side effects might affect your ability to do daily activities, but they should go away in a few days.

Get tips on [possible side effects after getting a covid-19 vaccine](#).

Other Authorized and Recommended COVID-19 Vaccines in the U.S.

- [Moderna](#)
- [Johnson & Johnson's Janssen](#)

You should get the first COVID-19 vaccine that is available to you. Do not wait for a specific brand. All currently authorized and recommended COVID-19 vaccines are [safe](#) and [effective](#), and CDC does not recommend one vaccine over another.

Safety Data Summary

- In [clinical trials](#), reactogenicity symptoms (side effects that happen within 7 days of getting vaccinated) were common but were mostly mild to moderate.
- Side effects (such as fever, chills, tiredness, and headache) throughout the body were more common after the second dose of the vaccine.
- Most side effects were mild to moderate. However, a small number of people had severe side effects—defined as side effects affecting a person's ability to do daily activities.
- Although few people in the clinical trials went to the hospital or died, data suggest that people who got the Pfizer-BioNTech vaccine were less likely to have these more serious outcomes compared to people who got the saline placebo.
- CDC will continue to provide updates as we learn more about the safety of the Pfizer-BioNTech vaccine in real-world conditions.

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

How Well the Vaccine Works

- Based on [evidence from clinical trials](#), the Pfizer-BioNTech vaccine was 95% effective at preventing laboratory-confirmed COVID-19 illness in people without evidence of previous infection.
- CDC will continue to provide updates as we learn more about how well the Pfizer-BioNTech vaccine works in real-world conditions.

Clinical Trial Demographic Information

Clinical trials for the Pfizer-BioNTech vaccine included people from the following racial and ethnic, age, and sex categories:

- 81.9% White
- 9.8% African American
- 4.4% Asian
- <3% other races/ethnicities
- <1% Native Hawaiian or Other Pacific Islander
- <1% American Indian or Alaska Native

Ethnicity

- 73.2% Not Hispanic or Latino
- 26.2% Hispanic or Latino
- <1% Not Reported

Age and sex breakdown:

- 50.6% male
- 49.4% female
- 21.4% 65 years and older

Age

- 57.9% 16 to 55 years
- 41.8% 55 years and older
- 21.4% 65 years and older
- 4.3% 75 years and older

The most frequent underlying medical conditions were obesity (35.1%), diabetes (8.4%), and pulmonary disease (7.8%).

Learn more about [demographic information for people who participated in the trials](#) [PDF – 53 pages] [↗](#).



For Healthcare Workers

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

Related Pages

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

More Information

[Pfizer-BioNTech COVID-19 Vaccine Fact Sheet for Recipients and Caregivers \[PDF – 6 pages\]](#)

[MMWR: Allergic Reactions Including Anaphylaxis After Receipt of the First Dose of Pfizer-BioNTech COVID-19 Vaccine — United States, December 14–23, 2020](#)

[Safety and Reactogenicity Data](#)

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Content source: [National Center for Immunization and Respiratory Diseases \(NCIRD\)](#), Division of Viral Diseases