Spike proteins trigger the production of antibodies

**mRNA COVID-19 Vaccine**
Contains genetically engineered messenger RNA to give your cells instructions on how to make the COVID-19 spike protein

mRNA enters the cell
causes the production of the spike protein
triggering production of antibodies
mRNA and spike protein degrade

**Protein subunit COVID-19 Vaccine**
Contains the spike protein and an adjuvant which helps boost the immune response

Spike proteins trigger the production of antibodies
After around 2 weeks, the body is then ready to fight if invaded in the future by the COVID-19 virus

**COVID-19 boosters** contain similar ingredients (formulation) as the current COVID-19 vaccines but may protect against additional variants of the virus and may require different dosages

(Mayo Clinic 2022)
COVID-19 Vaccines Prevent Severe Illness and Death

Over 2 years in the U.S., **COVID VACCINES PREVENTED** an estimated:

**120 MILLION COVID INFECTIONS**

**18.5 MILLION HOSPITALIZATIONS**

**3.2 MILLION DEATHS**

*(Fitzpatrick 2022)*

**United States: COVID-19 weekly death rate by vaccination status, 50+**

Death rates are calculated as the number of deaths in each group, divided by the total number of people in this group. This is given per 100,000 people.

*Unvaccinated*

*Primary vaccination only*

*Primary vaccination + 1 booster*

*Primary vaccination + 2 boosters*

*(Our World in Data 2022)*

Between January 2021 and April 2022, **COVID-19 VACCINES could have prevented** an additional **318,000 DEATHS** if all eligible individuals had been vaccinated.

*(Brown University 2022)*

---

**Available COVID-19 Vaccines** *(CDC 2022)*

**mRNA COVID-19 Vaccine**

-mRNA vaccine:
- first approved for emergency use in the U.S. in December 2020

These are the first mRNA based vaccines but are based off of technology that has been studied for decades. The technology is now being studied for use in other vaccines, cancer treatment, and more.

**Protein Subunit COVID-19 Vaccine**

-Protein-based vaccine:
- first approved for emergency use in the U.S. in July 2022

There have been other protein subunit vaccines approved and used before for diseases like hepatitis B and whooping cough.

Contains an adjuvant which helps produce a strong immune response.

---

**COVID‑19 Vaccines Prevent Severe Illness and Death**

Between January 2021 and April 2022, COVID‑19 VACCINES could have prevented an additional 318,000 DEATHS if all eligible individuals had been vaccinated.

*(Brown University 2022)*
Dangers of Misinformation and Disinformation

Misinformation and disinformation have plagued the COVID-19 pandemic. False information continues to be widely shared on social media, the Internet, on TV, and passed from person to person — making it difficult to make an informed decision. 

**MISINFORMATION**

is false information that is created and spread regardless of any intent to harm or deceive

**DISINFORMATION**

is a type of misinformation that is designed to be deliberately deceptive

Even Small Amounts of Misinformation/Disinformation Can Have an Impact

A brief exposure to COVID-19 vaccine misinformation/disinformation caused the number of people willing to get vaccinated to go down 6.4% (Loomba et al. 2021)

An analysis of millions of social media posts found that FALSE news stories were 70% MORE LIKELY to be shared than TRUE stories. (Vosoughi et al. 2018)

**MYTH**

67% of adults who had not yet received a COVID-19 vaccine had HEARD at LEAST ONE COVID-19 vaccine MYTH and either believed it to be true or weren’t sure if it was true, as of May 2021. (Hamel et al. 2021)
As of January 6, 2023, 69.1% of Americans were fully vaccinated but only 15.4% had received an updated booster.  

A variety of misinformation is leading to these low rates and includes old and new unfounded claims and rumors. It’s important to spread the truth about vaccines and help protect our loved ones. This section addresses some of the most common concerns people have today about COVID-19 vaccinations and provides a list of trusted partners for more information at the community level.

COVID-19 Vaccines Are Safe

There is no evidence that the COVID-19 vaccines affect fertility in men or women, and they are safe and recommended for use in pregnancy.

The vaccines can’t give you COVID-19. They contain only a piece of the virus or instructions for creating one of the virus’ proteins. People can still get infected by the virus after vaccination if they are exposed to the virus soon after vaccination, or if their immunity has started to decrease over time. However, the vaccine is never the cause of COVID-19.

Can’t change or influence our DNA. The messenger RNA (mRNA) used in some of the COVID-19 vaccines does not enter the nucleus (where our DNA is contained) and breaks down after a few hours.
Serious Vaccine Side Effects Are Rare

It’s not uncommon to have short-term pain, redness, or swelling at the site of the vaccine. People may also experience tiredness, headache, muscle pain, chills, fever, or nausea. These reactions are symptoms of the body building up protection against the virus, but serious side effects from the COVID-19 vaccines are rare.

Serious side effects like blood clots and related conditions, and myocarditis or pericarditis (swelling and inflammation of the heart) are EXTREMELY Rare.

On the other hand...

The risk of developing a blood clot is far higher during COVID-19 infection, than from the COVID-19 vaccine.

RISK OF DEVELOPING A BLOOD CLOT— that could lead to a heart attack or stroke — raises 22x WITH COVID-19

AFTER COVID-19 people are 65% MORE LIKELY to have CARDIOVASCULAR COMPLICATIONS like irregular heartbeats, heart failure, coronary disease, heart attacks, and more, even a year out from infection.

Boosters Help Maintain Immunity

It is not uncommon for protection from a vaccine to decrease over time, especially as new variants of a virus develop. Boosters give vaccinated individuals added protection against infection and serious complications.
You Still Need a Vaccine Even if You’ve Already had COVID-19

While previous COVID-19 does offer some protection against new infections, experts believe this protection begins to decline in as little as three months after infection. (Swartz 2023)

Reinfections from COVID-19 can be worse than previous infections.

**2x** DEATH, LONG COVID & **3x** HOSPITALIZATIONS, HEART PROBLEMS

RISK OF AND FATIGUE AND BLOOD CLOTTING

from COVID REINFECTIONS

(Bowe 2022)

People vaccinated for COVID-19 have a far lower risk of hospitalization and death than those who are unvaccinated.

When news reports say that more vaccinated than unvaccinated people are dying, this is because:

1) there are 3.8 times more fully vaccinated than unvaccinated people in the U.S.; and
2) fully vaccinated people are more likely to be older, frailer, and at higher risk of complications.

Vaccines Help Prevent Variants and Protect Others in Your Community

Variants of viruses develop as the virus is passed from person to person and mutates. If the virus can’t spread, it can’t mutate, which is why high vaccination rates are so important. The only way to stop new variants is to stop the spread of the virus.

MORÉ VACCINATED = LESS TRANSMISSION = FEWER NEW VARIANTS

Trusted Resources

To learn more about what COVID-19 vaccine is best for you, when you need your next shot or booster, how the vaccines work, and what other vaccines you need, visit these trusted resources:

**Vaccines.gov:**
find a vaccine appointment near you

**Centers for Disease Control & Prevention — About COVID-19 Vaccines:**
Updated information on which COVID-19 vaccines are approved for use, a tool for finding out if you’re due for any shots or boosters, and more

**CDC.gov — Vaccines and Immunizations:**
Includes a recommended vaccine schedule for different age groups, information about infectious diseases, details on how vaccines work, and more

**COVID-19 Vaccine Education & Equity Project:**
Resources and events providing transparent communication on COVID-19 vaccines

**Mayo Clinic — How Vaccines Work:**
Key takeaways on the how COVID-19 vaccines boost the immune system
References


