Debunking COVID-19 myths

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By Mayo Clinic Staff

Chances are good that you've heard a lot of ways to avoid, treat or cure COVID-19 (coronavirus disease 2019). If what you heard doesn't mention a COVID-19 vaccine or COVID-19 medicine from your healthcare professional, it could be a myth.

Myths are statements that aren't based in current facts. They are sometimes called misinformation.

COVID-19 myths spread early in the pandemic because the disease was new and information changed so quickly. Some of those myths are still spreading, along with new ones.

Before you take action to prevent or treat COVID-19, check with your healthcare professional. Vaccines and medicine to treat COVID-19 are now available. And more is known about medicines that don't work. Untested products that claim to treat COVID-19 also aren't likely to work. Some may cause serious harm.

Myth and misinformation

Misinformation is often a mix of true and false ideas. COVID-19 myths are no different. As new information comes out, not everyone learns about it at the same time. And a person may not know something they learned is false or may not remember it exactly.

Here are some known COVID-19 myths.

Do COVID-19 vaccines cause cancer or make cancer harder to treat?

No. COVID-19 vaccines are not linked to a rise in cancer or more aggressive cancer. This myth may be passed along as one person's experience. Or rarely, as a personal observation by a healthcare professional.

Researchers looked at the large groups of people who got a COVID-19 vaccine, and there is no evidence to support this myth.

Do COVID-19 vaccines cause heart problems, blood clots or stroke?

The COVID-19 vaccines available in the U.S. do not cause blood clots. COVID-19 vaccines are not linked to a higher risk of stroke. The benefits of COVID-19 vaccines outweigh the risks of rare cases of heart problems. Also, the risk of heart problems seem to be higher with COVID-19 infection than with COVID-19 vaccination.

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Among some groups of people and depending on the type of COVID-19 vaccine, getting vaccinated is linked in rare cases to side effects. But it is a myth to say that, in general, the vaccine raises health risks more than catching the virus that causes COVID-19.

Using vaccine surveillance systems, health agencies, such as the Centers for Disease Control and Prevention (CDC), can shed light on potential risks.

- **Myocarditis, pericarditis after COVID-19 vaccination.** In some people, COVID-19 vaccines are linked to inflammation of the heart muscle or the lining outside the heart. This is a rare side effect seen more often in young males than in other groups. These complications also may happen after getting sick with the virus that causes COVID-19.
- **Blood clot syndrome after Johnson & Johnson COVID-19 vaccination.** In 2021, vaccine tracking found that some people who got the J&J COVID-19 vaccine later got a blood clot disorder.

  Called thrombosis with thrombocytopenia syndrome, the disorder happened in about four people per one million doses of vaccine given. While the syndrome is rare, it is treated in the hospital and may result in death.

  Because of this link, health agencies in the United States recommended other COVID-19 vaccine options instead of the J&J COVID-19 vaccine. That vaccine is no longer available in the United States.

- **Stroke risk in older adults.** In January 2023, one vaccine safety tracking system noted a possible rise in stroke risk among people over age 65 who got a COVID-19 vaccine. The system, Vaccine Safety Datalink, is designed to quickly find patterns of concerns, also called sensitivity. But after review, no specific pattern or link was found between reporting a stroke and getting a COVID-19 vaccine. The databases that produced the statistical signal are early warning systems. In this case, the signal was a false alarm.

The benefits of getting a COVID-19 vaccine still outweigh the risks of serious side effects for most populations. Complications are rare. These issues also may happen after getting sick with the virus that causes COVID-19.

In general, research on the most used COVID-19 vaccines in the United States suggests the vaccines lower the risk of complications such as blood clots or other types of damage to the heart.

If you have concerns, your healthcare professional can help you review the risks and benefits specific to your health situation.

Can you get COVID-19 from the Pfizer, Moderna or Novavax vaccines?

No. Pfizer and Moderna COVID-19 vaccines only give your cells instructions for how to make a protein. Those instructions, called messenger RNA or mRNA, are for a protein on the surface of the COVID-19 virus. The Novavax vaccine takes a different approach. It contains one protein from the virus and another ingredient that boosts your immune system's response to the viral protein.

Some people may have side effects from vaccination, such as fever. But that's a sign that your body is building protection against the virus that causes COVID-19.

Can COVID-19 vaccines affect fertility?

No. COVID-19 vaccines do not cause fertility problems. After getting the vaccine, some women who get a period, also called menstruation, may have changes to their menstrual cycle. But these changes don't last and don't affect a person's ability to get pregnant.

If males have a fever after vaccination, they may produce less sperm for a short time. This is the case with fever from any cause, not just in response to a vaccine.

Do COVID-19 vaccines have a microchip?

No. COVID-19 vaccines are made only with ingredients that help the body recognize and clear out the virus that causes COVID-19. It is a myth that COVID-19 vaccines have microchips that track your location or movement.

Can COVID-19 vaccines affect your DNA?

No. COVID-19 vaccines cannot affect your DNA.

Pfizer and Moderna COVID-19 vaccines only give your cells instructions for how to make a protein found on the surface of the COVID-19 virus. Those instructions, called messenger RNA or mRNA, allow your muscle cells to make the protein pieces and display them on cell surfaces. This causes your body to make antibodies.

Once the protein pieces are made, the cells break down the instructions and get rid of them. The mRNA from the vaccine doesn't enter the nucleus of the cell, where your DNA is kept.

The Novavax COVID-19 vaccine uses only the parts of a virus that best stimulate your immune system. This type of COVID-19 vaccine contains harmless S proteins. Once your immune system recognizes the S proteins, it creates antibodies and defensive white blood cells.

Is getting COVID-19 better than getting a vaccine?

No. Unless your healthcare professional has said to avoid it, a COVID-19 vaccine is less risky than catching the virus that causes COVID-19. Vaccines lower the health risk of getting a disease by showing a weakened germ or part of a germ to your immune system. That way, the immune system can clear out the germs faster in the future.

Vaccine side effects can be planned for and are often mild. But the COVID-19 illness varies from person to person. And some people can get seriously ill. People who catch the COVID-19 virus instead of getting vaccinated may be at higher risk of post-COVID-19 syndrome.

Getting a COVID-19 vaccine after recovering from COVID-19 may give you better protection than just the vaccine or just the infection. That's called hybrid immunity. So even if you've had COVID-19 in the past, staying up to date with your COVID-19 vaccines is important to keep you protected. But if you haven't ever had COVID-19, don't get it to boost your immune response.

Will hot or cold temperatures keep me from getting COVID-19?

No. The virus that causes COVID-19 spreads mainly from person to person. The virus spreads when other people breathe in infected droplets or when the droplets land in their eyes, noses or mouths.

It is a myth that hot or cold temperatures can keep you from catching the COVID-19 virus. People all over the world, in winter and summer, get COVID-19.

Will foods, drinks, or supplements prevent or treat COVID-19?

No. COVID-19 vaccines help prevent the disease. You can lower your chance of getting COVID-19 even more by taking other steps, such as washing your hands and improving air flow.

Adding hot peppers to your diet or garlic or taking in alcoholic drinks will not protect you from getting COVID-19 or treat the disease.

Dietary or herbal supplements are not recommended to prevent or treat COVID-19. Colloidal silver supplements aren't safe or effective for treating any disease. Oleandrin, an extract from the toxic oleander plant, is poisonous and shouldn't be taken as a supplement or home remedy.

Does COVID-19 spread through wireless or mobile networks?

No. Viruses can only spread between living beings and can't travel on radio waves and mobile networks. Most often, this myth calls out 5G mobile networks. But the COVID-19 virus has spread in many countries that lack 5G mobile networks. Avoiding exposure to or use of 5G networks doesn't prevent infection with the COVID-19 virus.

Will getting the vaccines to prevent pneumonia and flu prevent COVID-19?

No. Vaccines are made to protect against a specific germ. So pneumococcal vaccination protects against pneumonia. The influenza vaccination protects against flu viruses.

The COVID-19 vaccines available in the United States are:

- 2023-2024 Pfizer COVID-19 vaccine.
- 2023-2024 Moderna COVID-19 vaccine.
- 2023-2024 Novavax COVID-19 vaccine.

COVID-19 Cleaning Myths

Are ultraviolet (UV) disinfection lights the best way to prevent COVID-19?

If someone in your home has COVID-19, clean and disinfect surfaces using products made for each surface. Follow the manufacturer's directions for disinfection.

Some types of UV light are used to disinfect surfaces, especially in healthcare settings. But in homes, it isn't clear how long some surfaces need to be exposed, and there are risks to using UV lights. Ultraviolet lights can expose you to unsafe levels of radiation. These wands also can damage your skin or eyes after just seconds.

Can I use disinfectant chemicals on or in my body?

No. When applied to surfaces, disinfectants can help kill germs such as the COVID-19 virus. But it is dangerous to use disinfectants on your body, inject them into your body or swallow them.

Spraying alcohol or bleach on your body won't kill viruses that have entered your body. These substances also can harm your eyes, mouth and clothes. Disinfectants can irritate the skin and may be toxic if swallowed or injected into the body. Also, don't wash produce with disinfectants.

COVID-19 treatment myths

Misinformation about COVID-19 treatments has led to serious harm and death.

Claims that ivermectin, hydroxychloroquine or chloroquine can treat COVID-19 are false. These medicines are still useful for treating other illnesses. But only medicines approved or authorized by the U.S. Food and Drug Administration (FDA) to treat COVID-19 are useful for that illness.

Ivermectin treats or prevents certain parasite infections in animals and in humans. These drugs don't treat viruses. Taking large doses of this drug can cause serious harm.

Hydroxychloroquine and chloroquine are malaria medicines. Early in the pandemic, when no treatments existed, the FDA authorized these medicines for emergency use. But the FDA withdrew that authorization when clinical trials showed that the drugs weren't effective for treating COVID-19. They also can cause serious heart problems.

Also, antibiotics are not used for viruses. They target another type of germs called bacteria.

Focus on facts

The FDA continues to remove products with misleading claims from store shelves and online marketplaces. In the meantime, keep in mind that stories from friends and family or celebrity testimonials aren't a substitute for scientific evidence. A miracle cure that claims to contain a secret ingredient is likely a hoax.

Talk to your healthcare professional if you have questions about COVID-19 treatment or prevention.

The CDC recommends a COVID-19 vaccine for everyone age 6 months and older. The COVID-19 vaccine can lower the risk of death or serious illness caused by COVID-19.

COVID-19 medicine helps people who are at risk, diagnosed or who have symptoms of the disease.

You can get medicine to manage symptoms. Some medicines stop the virus that causes COVID-19 from spreading in the body. And some COVID-19 medicines help manage the body's immune system response.

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