



## COVID-19

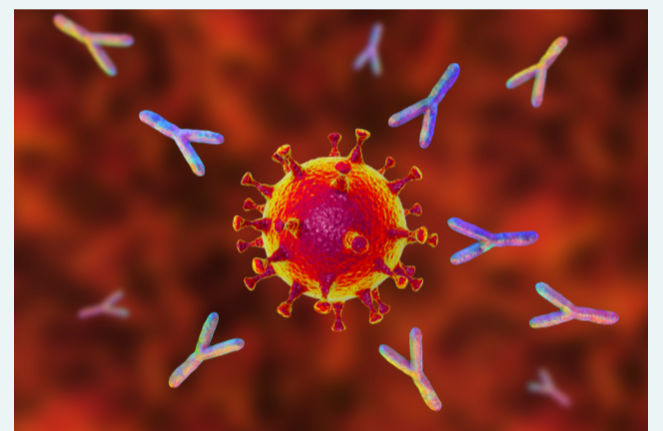
# Antibodies and COVID-19

Updated Nov. 10, 2021

## Antibodies and the immune system

### DEFINITIONS

- The **immune system** is a complex network of cells, tissues, and organs that work together to protect the body from infection.
- **Antibodies** are proteins that your immune system makes to help fight infection and protect you from getting sick in the future.



When you are infected with a virus or bacteria, your immune system makes antibodies specifically to fight it. Your immune system can also safely learn to make antibodies through vaccination. Once you have antibodies to a particular disease, they provide some protection from that disease. Even if you do get sick, having antibodies can protect you from getting severely ill because your body has some experience in fighting that disease. How long this protection lasts can be different for each disease, each person, or influenced by other factors. Antibodies are just one part of your immune response.

## Antibodies and COVID-19

Antibodies to [SARS-CoV-2](#), the virus that causes COVID-19, can be detected in the blood of people who have recovered from COVID-19 or people who have been vaccinated against COVID-19. Getting a vaccine is safer than getting COVID-19, and vaccination against COVID-19 is recommended for everyone 5 years of age and older. If someone has already had COVID-19, vaccination against COVID-19 increases their body's antibody response, which improves their protection.

It is important to remember that some people with antibodies to SARS-CoV-2 may become infected after vaccination ([vaccine breakthrough infection](#)) or after recovering from a past infection ([reinfect](#)). Based on what we know right now, risk of reinfection is low for at least the first 6 months following an infection with the virus that causes COVID-19 diagnosed by a laboratory test. When someone who is [fully vaccinated](#) gets COVID-19, it is called a [vaccine breakthrough infection](#). No vaccine is 100% effective, so some breakthrough infections are expected. The risk of infection, severe illness, hospitalization, and death are all much lower for vaccinated people compared to people who are unvaccinated. When reinfections or breakthrough infections happen, having antibodies plays an important role in helping prevent severe illness, hospitalization, and death.

For many diseases, including COVID-19, antibodies are expected to decrease or “wane” over time. After a long enough period of time, your level of antibodies can decrease below a level that provides effective protection. This level is called the “threshold of protection.” When antibodies decrease below the threshold of protection, you may become more vulnerable to severe illness. We do not yet know what the threshold of protection for antibodies is for the virus that causes COVID-19 or how long it takes these antibodies to wane. Even after antibodies wane, your immune system may have cells that remember the virus that can act quickly to protect you from severe illness if you become infected. These topics are being researched by scientists all over the world.

# I have COVID-19 antibodies. What does it mean?

A positive antibody test result can help identify someone who has had COVID-19 in the past or has been vaccinated against COVID-19. Antibody tests are not used if you have symptoms of COVID-19 or for diagnosing a current case of COVID-19. This is because it takes most people with a healthy immune system 1 to 3 weeks after getting COVID-19 to develop antibodies. A viral test is recommended to identify a [current infection](#) with the virus that causes COVID-19. More information about the role and [uses of antibody testing](#) is available.

Most people who have a positive antibody test result can continue with normal activities, including work, but they should still [take steps to protect themselves and others](#), including getting vaccinated.

Studies show that people who have antibodies from an infection with the virus that causes COVID-19 can improve their level of protection by getting vaccinated.

A positive antibody test result alone, especially one from an infection at an unknown time or that was determined by a viral test more than 6 months ago, does not necessarily mean that you are immune to getting COVID-19. If you have had an antibody test, it is important to review your test results with your healthcare provider.

## How do scientists study antibodies?

The science of antibodies is called “serology.” Antibody tests, also called “serology tests,” identify antibodies in blood samples. While other parts of the immune system also contribute to protection, it is easiest to test for antibodies.

As of August 2021, [more than 80 antibody tests](#) [🔗](#) have been granted FDA emergency use authorization (EUA) to detect antibodies to SARS-CoV-2. Scientists are using these antibody tests to learn more about the level of antibodies needed to protect people from COVID-19 (threshold of protection) and how long this protection lasts. Antibody tests are not currently recommended by FDA for routine, widespread use in making individual medical decisions while this information is being gathered and evaluated. If you have questions about whether an antibody test is right for you, talk with your healthcare provider or your state or local health department.

Not all antibody tests identify the same antibodies. Some antibody tests are more or less sensitive to specific sections of the antibody protein than others. This means that different antibody tests might not have the same results, even when they are both testing for antibodies to SARS-CoV-2. Scientists use these differences in tests to help answer different research questions about how immune systems respond to the virus that causes COVID-19 and to improve our understanding of COVID-19.

## What information do antibodies to SARS-CoV-2 tell us about how to respond to COVID-19?

As scientists learn more about the antibodies to SARS-CoV-2, we will understand a lot more about how to treat and control COVID-19.

[Serological surveillance](#) (studies that investigate antibodies in the population) provides information about how long antibody protection against COVID-19 lasts and if this protection is different among people who have antibodies from infection, compared with people who have antibodies from vaccination, or both.

We can also learn more about which groups of people might not produce as many antibodies or maintain them as long as others—for example, immunocompromised people compared with people who have healthy immune systems. This is important information for making decisions about whether or not additional vaccine doses or boosters are needed, when they would be recommended, and who would need them first.

We can also learn if antibodies to SARS-CoV-2 provide the same protection against [new variants of the virus that causes COVID-19](#).

## Antibody quiz

Now that you've learned about antibodies and COVID-19, test your knowledge with an interactive quiz.

## Test Your Knowledge

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Antibodies for the virus that causes COVID-19 are expected to decrease, or wane, over time.

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