TEST

COVID-19 antibody test

A COVID-19 antibody test checks blood for immune proteins made after infection or vaccination.

WHAT IT MEASURES
Antibodies made after SARS-CoV-2 infection or vaccination

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually under 10 minutes for a blood draw

RESULTS IN
Same day to several days, varying by laboratory

USED FOR
Selected assessment of past infection, not current diagnosis

MAIN LIMITATION
Timing and vaccination can make results misleading

Overview

A COVID-19 antibody test is a blood test that looks for antibodies to SARS-CoV-2, the virus that causes COVID-19. Antibodies are proteins made by the immune system after infection or vaccination.

This test is also called a serology test. Unlike antigen and molecular tests such as PCR, which look for evidence of a current infection, antibody tests mainly show an immune response that developed in the past.

Some tests detect antibodies to the virus's spike protein. Infection and COVID-19 vaccines can both produce these antibodies. Other tests detect nucleocapsid antibodies, which generally develop after infection rather than vaccination.

An antibody result cannot confirm that you are protected from future infection.

Why the test is ordered

Antibody testing is not routinely needed after COVID-19 or vaccination. It may be ordered to:

Antibody tests should not usually be used for recently started symptoms because antibodies take time to develop. An antigen or molecular test is generally more appropriate for possible current infection.

They are also not recommended as a stand-alone way to decide whether you need vaccination, an additional dose, or precautions around other people.

- Support assessment of a past infection when earlier virus testing was unavailable or negative
- Help assess delayed complications, such as multisystem inflammatory syndrome
- Look for previous infection in a vaccinated person using a nucleocapsid antibody test
- Support public health research into how widely the virus has circulated

Who should have the test

A clinician may offer testing when evidence of an earlier infection could help assess your symptoms or medical history. Testing may also be used in research or public health surveillance.

Routine testing is generally not useful for checking whether a vaccine "worked." Antibody tests do not measure all parts of the immune response, and no single antibody level guarantees protection.

People with weakened immune systems may have low or undetectable antibody levels after infection or vaccination. Their results still do not provide a complete measure of protection and may require specialist interpretation.

How to prepare

You do not need to fast. You can usually eat, drink water, and take your regular medicines unless the testing service gives different instructions.

Tell the person arranging the test:

If you ordered the test privately, bring information about the exact test because different products measure different antibodies.

- When your symptoms or possible exposure occurred

- The dates and types of COVID-19 vaccines you received
- Whether you have a condition or treatment that weakens immunity
- Whether you recently received donated blood products, immune globulin, or antibody treatment
- Whether you take high-dose biotin supplements

What happens during the test

Most laboratory tests use blood taken from a vein in your arm. A healthcare worker cleans the skin, inserts a small needle, and collects blood into a tube. This usually takes only a few minutes.

Some rapid tests use a finger-prick sample and may provide a result during the appointment. Their performance can differ from laboratory tests.

The sample may be tested for one or more antibody types. Many tests measure total antibodies or immunoglobulin G, known as IgG.

Understanding your results

A positive or reactive result means antibodies were detected above the test's cutoff. This may reflect infection, vaccination, or both, depending on the viral protein tested.

Spike antibodies can develop after infection or vaccination, so a positive result usually cannot distinguish between them. Nucleocapsid antibodies generally suggest previous infection because commonly used vaccines do not contain this protein. However, some people never develop detectable nucleocapsid antibodies, and levels can fall over time.

A negative or non-reactive result does not completely rule out previous infection. Testing may have occurred too early, antibodies may have faded, or the person may have had a limited immune response.

Some reports provide a numerical value. Results from different test brands may not be comparable, and a higher number does not translate directly into a known level or duration of protection. There is no universal reference range; interpretation depends on the method used and the clinical context.

What affects the results

Timing has the greatest effect. Testing in the first days of illness may be negative because the body has not made enough antibodies. Levels can later fall below the test's cutoff, particularly months after a mild infection.

Vaccination also affects interpretation. A spike antibody result may reflect vaccination, infection, or both. A nucleocapsid test is more useful for looking for past infection in a vaccinated person, but it can still miss infections.

Other factors include:

Food, coffee, ordinary exercise, and the time of day do not usually have a meaningful effect.

- Conditions or medicines that suppress the immune system
- Cancer treatment, anti-rejection medicines, or immune-targeting medicines
- Individual differences related to age, pregnancy, or immune response
- Recent blood transfusion, plasma treatment, or immune globulin
- Previous laboratory-made antibody treatment for COVID-19
- Differences in the antibody and viral protein measured
- High-dose biotin supplements, which can interfere with some methods

Accuracy and limitations

Accuracy varies between tests and according to timing. Even a well-performing test can miss past infection if used too early, after antibodies have faded, or in someone with a limited immune response.

False-positive results can occur because of non-specific reactions, cross-reactions, or technical interference. They matter more when previous infection is unlikely. Laboratory tests generally undergo more detailed evaluation than some rapid or home-collection products, but authorized tests do not all perform equally in every situation.

Antibody testing cannot reliably show:

If you have current symptoms or a recent exposure, use an antigen or molecular test. Specialized neutralizing antibody tests are not routinely used to make personal decisions about immunity.

- Whether you currently have COVID-19
- Whether you can pass the virus to someone else
- Whether you are fully protected from infection

- How long protection will last
- Whether vaccination is unnecessary

Risks and complications

A blood draw may cause brief discomfort, a small bruise, or light-headedness. Serious complications are uncommon.

A finger-prick test may cause short-lived soreness at the puncture site.

What happens next

Your result should be considered alongside your vaccination record, symptoms, exposure history, immune health, and the specific antibody measured.

A positive result usually does not require treatment. Do not change vaccination plans, medicines, or infection precautions based only on an antibody result.

A negative result may need no further action. If testing occurred soon after suspected infection, a clinician may recommend waiting before repeating it or using a different test.

For new COVID-19 symptoms, use a test for current infection rather than waiting for antibody testing. Seek clinical advice if symptoms persist or you have a higher risk of severe illness.

Seek urgent medical help for difficulty breathing, persistent chest pain, new confusion, difficulty waking, or pale, grey, or blue lips or skin. These symptoms require assessment regardless of the antibody result.

Common questions

Can I drink coffee before the test?

Yes. Fasting is not normally required unless you are having another test that requires it.

Does the time of day matter?

Usually not. Blood can generally be collected whenever the laboratory is open.

Can I exercise beforehand?

Ordinary exercise is unlikely to affect the result. If blood draws make you feel faint, avoid unusually strenuous exercise immediately beforehand and drink enough water.

How soon after infection should I test?

Antibodies take time to appear, so early testing can miss them. The best timing depends on the test and why it was ordered. For current symptoms, use an antigen or molecular test instead.

Will a positive result tell me that I am immune?

No. It shows that certain antibodies were detected but does not measure every part of immunity or guarantee protection against future variants.

Can the test tell whether I had COVID-19 or was vaccinated?

Sometimes, but not with certainty. Spike antibodies can follow infection or vaccination. Nucleocapsid antibodies usually follow infection, but they may be absent or fade over time.

Sources

- Centers for Disease Control and Prevention. Overview of Testing for SARS-CoV-2
- US Food and Drug Administration. Coronavirus Disease 2019 Testing Basics
- US Food and Drug Administration. Antibody Testing Is Not Currently Recommended to Assess Immunity After COVID-19 Vaccination
- Infectious Diseases Society of America. Guidelines on the Diagnosis of COVID-19: Serologic Testing
- Deeks JJ, et al. Antibody tests for identification of current and past infection with SARS-CoV-2. Cochrane Database of Systematic Reviews. 2020