How do COVID-19 antibody tests differ from diagnostic tests?

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Q: I've heard about new antibody testing for COVID-19. What is antibody testing? Is it the same as testing to diagnose COVID-19?

A: With all the talk about coronavirus disease 2019 (COVID-19) testing in the news, it's not surprising that there's confusion about tests and how they differ. Antibody testing determines whether you had COVID-19 in the past and now have antibodies against the virus. A test to diagnose COVID-19 determines if you currently have the disease. Here's what you need to know about testing.

When is antibody testing done and why is it important?

Antibody testing, also known as serology testing, is done after full recovery from COVID-19. Eligibility may vary, depending on the availability of tests. A health care professional takes a blood sample, usually by a finger prick or by drawing blood from a vein in the arm. Then the sample is tested to determine whether you've developed antibodies against the virus. The immune system produces these antibodies—proteins that are critical for fighting and clearing out the virus.

If test results show that you have antibodies, it indicates that you were likely infected with COVID-19 at some time in the past. It may also mean that you have some immunity. But the World Health Organization cautions that there's a lack of evidence on whether having antibodies means you're protected against reinfection with COVID-19. The level of immunity and how long immunity lasts are not yet known. Ongoing studies will eventually reveal more data on this.

The timing and type of antibody test affects accuracy. If you have testing too early in the course of infection, when the immune response is still building up in your body, the test may not detect antibodies, so you may have to wait several days to get tested. Also, the U.S. Food and Drug Administration (FDA) authorized and verified certain antibody tests, but many tests with questionable accuracy are now on the market.

Another benefit of accurate antibody testing is that people who've recovered from COVID-19 may be eligible to donate plasma, a part of their blood. This plasma could be used to treat others with severe disease and boost the ability to fight the virus. Doctors call this convalescent plasma. In the U.S., the COVID-19 expanded access program is recruiting participants for this promising treatment study, already used in some severe cases on an experimental basis.

What tests are used to diagnose COVID-19?

The FDA approved two types of tests for diagnosing COVID-19—molecular and antigen.

Molecular test. This test detects genetic material of the virus using a lab technique called polymerase chain reaction (PCR). Also called a PCR test, a health care worker collects fluid from a nasal or

throat swab or from saliva. Results may be available in minutes if analyzed onsite or one to two days if sent to an outside lab. Molecular tests are considered very accurate when properly performed by a health care professional, but the rapid test appears to miss some cases. The FDA also approved certain COVID-19 at-home test kits, available only with doctor approval: A nasal swab kit and a saliva kit. The sample is mailed to a lab for testing. The FDA warns consumers against buying unapproved home tests, because they may be inaccurate and unsafe.

Antigen test. This newer COVID-19 test detects certain proteins that are part of the virus. Using a nasal or throat swab to get a fluid sample, antigen tests can produce results in minutes. Because these tests are faster and less expensive than molecular tests are, some experts consider antigen tests more practical to use for large numbers of people. A positive antigen test result is considered very accurate, but there's an increased chance of false negative results—meaning it's possible to be infected with the virus but have negative antigen test results. So antigen tests aren't as sensitive as molecular tests are. Depending on the situation, the doctor may recommend a molecular test to confirm a negative antigen test result.

What do I do if I'm interested in a COVID-19 diagnostic test or an antibody test?

Contact your doctor or other health care professional to discuss your situation and whether he or she thinks you need a COVID-19 diagnostic test or an antibody test. Before seeking a COVID-19 test in person, contact your doctor to discuss your situation and describe any symptoms.

Typically at this time, most doctors only suggest a test to diagnose COVID-19 if you have symptoms or you've had exposure to someone with COVID-19. To get antibody testing, you have to be fully recovered from COVID-19. But in a limited number of communities, people who never had symptoms of COVID-19 are included in testing. Some have positive results, meaning they likely were infected by the COVID-19 virus at some time.

Access to either test depends on where you live, test availability and whether you're viewed as eligible. In the U.S., collaborative efforts to make more tests available are ongoing. The nationwide goal is to test more people as more tests become available.

How can diagnostic and antibody testing help reduce the spread of COVID-19?

When more COVID-19 diagnostic tests are available, people who test positive and have symptoms can get care earlier. Contacts can be traced and self-isolation or quarantine started sooner to help stop the spread of the virus.

But no COVID-19 test is 100% accurate. It's possible to test negative yet actually be infected (false-negative result). So it's vital to continue to follow COVID-19 guidelines from the Centers for Disease Control and Prevention, such as social distancing, until further notice.

When accurate antibody tests become widely available, results will indicate how many people had COVID-19 and recovered, including those who didn't have symptoms. This aids in determining who might have immunity. It can also help in contact tracing to assess who else is at risk of infection and how far the disease spread. All of this data will help improve strategies to curb the COVID-19 pandemic.