Coronavirus Disease 2019 (COVID-19)

Serology Testing for COVID-19 at CDC

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CDC has developed a laboratory test to help estimate how many people in the United States have already been infected with SARS-CoV-2, the virus that causes COVID-19. Clinicians and researchers refer to this as a **serology test**, and many commercial laboratories call it an **antibody test**. CDC has also developed guidance for the use of antibody tests in clinical and public health settings.

An antibody test looks for the presence of antibodies, which are specific proteins made in response to infections. Antibodies are typically detected in the blood of people who are tested after infection; they show an immune response to the infection. Antibody test results are especially important for detecting previous infections in people who had few or no symptoms.

CDC scientists are conducting studies to determine how much protection (immunity) antibodies might provide against getting infected again. Based on what we know from similar viruses, some reinfections are expected. Confirmed and suspected cases of reinfection of the virus that causes COVID-19 have been reported, but remain rare.

CDC's serologic test has been designed and validated for surveillance and research purposes. It is designed to estimate the percentage of the U.S. population previously infected with the virus – information needed to guide the response to the pandemic and protect the public's health.

Commercial tests are available to provide test results to individuals.

CDC is evaluating the performance of commercial antibody tests

Commercially manufactured antibody tests check for SARS-CoV-2 antibodies in individuals and are available through healthcare providers and commercial laboratories. CDC is evaluating the performance of these tests in collaboration with the following federal organizations:

- Biomedical Advanced Research and Development Authority
- U.S. Food and Drug Administration (FDA)

- National Institutes of Health
- Results from the federal evaluation are included in FDA's EUA Authorized Serology Test Performance and will be updated as more tests are evaluated.

Read CDC's interim guidelines for using antibody tests in clinical and public health settings.

About CDC's serologic test

CDC's serologic test is an enzyme-linked immunosorbent assay (ELISA)-based test to detect SARS-CoV-2 antibodies in serum or plasma components of blood. The ELISA test uses purified SARS-CoV-2 S protein (no live virus) as antigen (designed by the Vaccine Research Center at the National Institutes of Health). This test is designed to minimize cross-reactivity to antibodies generated to other common coronaviruses that cause less severe illnesses, such as colds. However, potential cross-reactivity cannot be completely ruled out.

CDC's serologic test has a specificity of greater than 99% and a sensitivity of 96% based on performance evaluations. It can be used to identify past SARS-CoV-2 infection in people who were infected at least 1 to 3 weeks previously.

CDC serology surveillance strategy

CDC has a strategy for using serology testing as part of surveillance efforts to better understand how much of the U.S. population has been infected with SARS-CoV-2 and how the virus is spreading through the population over time.

Learn more about CDC's COVID-19 serology surveillance strategy.

Additional Resources

FAQs for Laboratories: Serology

How to Get CDC's COVID-19 Diagnostic Test and Supplies

Testing for COVID-19

FDA: Serology/Antibody Test FAQs

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