



white paper

UNDERSTANDING THE GLOBAL IMPACT OF COVID-19 FOR EMPLOYERS

A review of the different types of testing, who should be tested, and return to work strategies as of May 14, 2020.



There is no doubt that the COVID-19 pandemic has affected the life of every individual in some way, shape, or form.

The wide reach of its influence spans regions, races, ages, and socio-economic groups, with the total number of infected exceeding one million in the U.S. as of April 29, 2020¹. There is an urgent need to get ahead of this virus; experts indicate that to accomplish this a firm handle on the rate of infection in the U.S., both collectively and regionally, must be accurately determined. Knowing infection rates allows for the tracking of peaks, plateaus, resurgences and declines. Additionally, awareness of this data helps public officials create appropriate policies in response to the pandemic.

As such, employers may find themselves in a delicate situation that will require balancing. On one hand, employers need to keep employees and the population they serve safe. On the other, they are also responsible for maintaining operational, productive and financially-sound businesses.

Informed, safe decisions to protect employees, communities, and future business interests are vital. To that end, this paper will provide detail regarding the two different types of COVID-19 testing, along with who should be tested and why. It will also discuss cautious return-to-work strategies.

VIRAL VS. ANTIBODY TESTING

In evaluating advice from the Centers for Disease Control (CDC) and the World Health Organization (WHO), public health officials agree that the only true way to earnestly begin the tracking process is to test the population. This includes testing two population segments - those that may have the active COVID-19 virus and those previously exposed whose bodies created antibodies to fight the infection and ultimately recovered.

There are two broad categories of testing - viral and antibody. Please see chart on the next page for a comparison.^{2, 3, 4}

¹ "Cases in the U.S." Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html>

² "Testing for Covid19" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html>

³ "Test for current infection" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/testing/diagnostic-testing.html>

⁴ "Test for past infection" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/testing/serology-overview.html>

	Viral test (Molecular test, Nucleic acid test)	Antibody test (Serology test)
<i>What will this test tell a patient?</i>	Whether they have a current infection	Whether they had a previous infection or exposure
<i>What does it mainly detect?</i>	Viral particles	Antibodies —IgA, IgM, IgG
<i>What kind of test is used?</i>	The most commonly used viral test is RT-PCR (Reverse Transcriptase—Polymerase Chain Reaction).	Either ELISA or a similar chromatographic immunoassay. They also differ in what antigen is being used to detect the antibody present—there are 4 different antigens in COVID-19. Based on the antigen, the antibody detected will be different.
<i>What type of sample is collected?</i>	The most common samples collected for this test are nasal swabs, and oropharyngeal swabs ³ . Some saliva-based tests are also on the market.	Most common sample for this test is whole blood. Finger prick tests are on the market as well.
<i>How is the sample collected?</i>	Either at home (by the patient), or by a medical provider.	Usually collected at a medical facility, unless using the finger prick test.
<i>How is the sample tested?</i>	The test can be a rapid or instant test (similar to rapid flu), or sent to the lab for testing. A home based nasal swab kit that is sent to the lab is also available. ⁴	The test can be rapid (if using finger prick) or sent to the lab for testing.
<i>What does a positive result indicate?</i>	A positive test indicates active/acute infection. The test may remain positive even after complete recovery of symptoms, or the patient may have had the infection without any symptoms to begin with.	A positive test (especially for IgG) may indicate: <ul style="list-style-type: none"> a) A false positive test; or b) Immunity; however, this correlation is under research. In addition, the correlation of antibody to specific protective antigen is yet to be determined.
<i>What does a negative result indicate?</i>	A negative test may indicate: <ul style="list-style-type: none"> a) The patient does not have the infection; b) The result is a false negative (possible in 30% of cases); or c) An inadequate sample was collected. Hence, all tests need to be corroborated with patient history and symptoms of disease or exposure.	A negative test may indicate: <ul style="list-style-type: none"> a) The patient never had the infection (or exposure); b) The test was a false negative; or c) The patient was tested too early post-infection during the incubation period. This period usually lasts 10 days (1-3 weeks) after getting an infection, during which time a patient develops antibodies.

ANTIBODY AND IMMUNITY TESTING

The CDC is actively looking at serologic data to validate the antibody tests and provide recommendations for their use⁵. The CDC's validation study of various antibody tests and their use in making clinical decisions with regards to immunity will shed more light as time passes⁶. Also, community antibody testing is becoming more available as commercial laboratories increase their capacity to perform such tests.

There is no data as of the date of this paper to support use of any particular test to detect immunity and hence, make return to work decisions. However, reasonable decision-making protocols can be developed based on information that will become available in the near future as testing increases.

PRIORITIES FOR COVID-19 TESTING FOR CURRENT INFECTION

The CDC has stated that not everyone requires COVID-19 testing. Most patients with mild illness recover at home and therefore may not need to be tested⁷. Unless the subject has had known COVID-19 symptoms or a history of exposure, testing is not

required. The following list (adapted from the CDC) of priority personnel are being tested, followed by asymptomatic patients as per medical provider discretion.

High Priority

- Hospitalized patients
- Healthcare facility workers, workers in congregate living settings, and first responders **with** symptoms
- Residents **with** symptoms in long-term care facilities or other congregate living settings, including prisons and shelters
- Persons identified through public health cluster and selected contact investigations

Priority

- Persons **with** symptoms of potential COVID-19 infection, including: fever, cough, shortness of breath, chills, muscle pain, new loss of taste or smell, vomiting or diarrhea and/or sore throat
- Persons **without** symptoms who are prioritized by health departments or clinicians, for any reason, including but not limited to: public health monitoring, sentinel surveillance, or screening of other asymptomatic individuals according to state and local plans.

⁵ "Covid19 serology surveillance strategy" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/serology-surveillance/index.html>

⁶ "Serology testing for Covid19" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/lab/serology-testing.html>

⁷ "Testing for Covid19" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html>



RETURN TO WORK STRATEGIES

The examples of return to work strategies used for HCP (Healthcare Personnel) based on CDC guidelines⁸ are mainly divided in two categories:

1. Symptom-Based or Time-Based Strategy:

In symptomatic cases:

- At least 72 hours have passed *since recovery* (defined as resolution of fever without the use of fever-reducing medications); **and**
- Improvement in respiratory symptoms (e.g., cough, shortness of breath); **and**
- At least 10 days have passed *since symptoms first appeared*.

In asymptomatic positive cases:

10 days have passed since the date of their first positive COVID-19 diagnostic test, assuming they have not subsequently developed symptoms since their positive test.

2. Test-Based Strategy:

In symptomatic cases:

- Resolution of fever without the use of fever-reducing medications; **and**
- Improvement of respiratory symptoms (e.g., cough, shortness of breath); **and**
- Two consecutive negative nasopharyngeal swab specimen results collected ≥ 24 hours apart using a FDA - EUA⁹ molecular test for COVID-19.

In asymptomatic positive cases:

Two consecutive negative nasopharyngeal swab specimen results collected ≥ 24 hours apart using a FDA-EUA molecular test for COVID-19.

As such, the industry specific criteria can be adapted to make return to work decisions. As noted by the CDC, unless the subject has had known COVID-19 symptoms or history of exposure, testing is not required. Therefore, using a symptom-based questionnaire that includes history of close contact with COVID-19 cases should serve as a screening tool to make reasonable return to work decisions.

Simultaneously, all social distancing protocols, use of face coverings and hand hygiene, and cleaning procedures should remain in effect as per CDC guidelines. Employers must also adhere to the legal requirements and guidelines in their respective states in regards to social distancing protocols, such as wearing masks at the workplace. ■

⁸ "Criteria for return to work for healthcare personnel with suspected or confirmed Covid19 (interim guidance)" Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html>

⁹ "Emergency Use Authorizations" U.S. Food & Drug Administration, <https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations>

