# Antigen Proficiency Testing for SARS-CoV-2 Virus

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**Julie McDowell:**

As more antigen testing methods become available in the market, the laboratory remains at the center of testing and ensuring accurate results for optimal patient care. Introducing a new antigen proficiency testing program for SARS-CoV-2 virus to compliment existing programs from molecular and serology pt. The CAP now offers laboratories a complete suite of PT and quality improvement programs for all COVID-19 related testing.

In this CAPcast, Dr. Daniel Rhodes, section head of microbiology, the Cleveland Clinic, and a member of the CAP's Microbiology committee, speaks with us about antigen testing for SARS-CoV-2 and the new PT program that the CAP offers its customers.

Dr. Rhodes, when is antigen testing most appropriate?

**Dr. Daniel Rhoads:**

Thanks, Julie. Yeah, antigen testing is most appropriate when a rapid result is needed. These assays are typically designed to be able to be performed in a point of care or a CLIA waived setting. So some of the antigen tests need to be performed within an hour of collection, which again makes it most feasible when using it in a point of care test model.

It's important to point out that the antigen assays available in the US are only FDA authorized for use in symptomatic individuals. And the instructions for use describe some circumstances in which negative antigen results should be treated as presumptively negative.

Generally, antigen assays for respiratory viruses like SARS-CoV-2 have the best sensitivity in the first several days after symptom onset, when the viral burden in the patient is typically near its peak and antigen levels are highest. Testing individuals late in their disease course is more likely to produce a false negative result.

So it's important to recognize that the performance of antigen assays in the real world setting has not yet been well described by independent evaluations.

**Julie McDowell:**

Can you explain the differences between molecular and antigen testing for SARS-CoV-2?

**Dr. Daniel Rhoads:**

Yeah, absolutely. So both molecular and antigen tests are performed on respiratory specimens like a nasal swab or a nasal pharyngeal swab. But antigen assays on the market are currently only able to be used with a dry swab. So once the swab is tested, then the specimens used up.

So in contrast, most molecular tests are performed on the liquid medium in which the swab is placed, which enables retesting if needed, or testing for other viruses using other assays if desired.

Like I had mentioned, there have not been a lot of studies on antigen testing for SARS-CoV-2 yet, but in general, antigen testing for respiratory viruses is less sensitive than molecular testing. However, antigen testing often has a shorter turnaround time, so there are trade-offs.

**Julie McDowell:**

What is the value of a proficiency testing or PT program for antigen testing?

**Dr. Daniel Rhoads:**

Yeah, PT is an important part of the quality management system of testing, so it helps to ensure accurate and reliable results are coming from the laboratory, and it helps laboratories see how they compare with their peers in the performance of their testing.

It's an important part to help make sure that the staff performing the testing is competent and able to issue accurate results.

**Julie McDowell:**

Finally, Dr. Rhodes, can you tell us some more about the new antigen PT programs design?

**Dr. Daniel Rhoads:**

Yeah. Currently, the FDA, EUA methods on the market target nuclear capsid antigen and whole virus, hold killed viruses, included in the PT material. So it's going to have this nuclear capsid antigen and it will be able to be used with these antigen tests on the market.

The product can be shipped internationally. In 2020, the CAP is going to ship one shipment of the antigen assay to be tested, and in 2021 there will be two shipments from the CAP for this PT material.

**Julie McDowell:**

Thank you, Dr. Rhodes. You can order the new antigen proficiency testing program today. The program code is COVAG.

For more information about specifications of an enrollment in the CAP’s COVID-19 related PT programs for antigen, molecular, and serology testing, please visit the CAP’s COVID-19 page at CAP.org for the latest information and resources, including those for proficiency testing.

The CAP’s COVID-19 webpage also offers links to helpful tools and resources to help you clarify rules and compliance, as you implement testing in your laboratory.

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