IDAHO DEPARTMENT OF HEALTH & WELFARE
DIVISION OF PUBLIC HEALTH

Idaho Guidance on Use of Antigen Tests for Serial Screening of Asymptomatic Populations for COVID-19

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What is asymptomatic serial screening?

Widespread testing, regardless of signs or symptoms, is a key component to preventing the transmission of SARS-CoV-2. Asymptomatic serial screening is an approach based on repeated testing performed at defined intervals for people without symptoms of COVID-19 and no recent known or suspected exposure to SARS-CoV-2. Serial screening is valuable because people with asymptomatic or pre-symptomatic infection are frequent contributors to community SARS-CoV-2 transmission. Screening enables identification and isolation of individuals who are asymptomatic, pre-symptomatic, or have only mild symptoms and might be unknowingly transmitting virus.[1]

Point-of-care tests, such as antigen tests, are ideal for screening due to the short turn-around time for results (typically less than 20 minutes). Multiple antigen tests (including prescription and over-the-counter options) are authorized for serial screening of asymptomatic populations[2] (see CDC antigen guidance for more details). Most screening antigen test manufacturers recommend testing occur with a minimum interval of 36 hours between tests. When setting up a screening program, local conditions should factor into the determination or modification of testing intervals.

Screening with antigen tests does have some limitations. Antigen test performance is optimal in the early stages of infection when viral loads are high, but their accuracy decreases as COVID-19 disease progresses and viral loads drop.[1] This means that antigen tests are less sensitive than RT-PCR tests at detecting the SARS-CoV-2 virus throughout the course of disease, but they should be able to accurately identify an infection when transmission is most likely. Serial testing approaches reduce the cumulative probability of a false negative antigen test result (discordancy where the antigen result is negative, but RT-PCR result is positive) by increasing the number of independent testing events.

When combined with other infection control measures (e.g., vaccination, masking, physical distancing, hand hygiene), asymptomatic serial screening is a valuable community mitigation strategy that can allow populations to more confidently and safely return to workplaces, schools, and other congregate settings.[3]

Is asymptomatic serial screening required for vaccinated populations?

No. CDC guidance indicates fully vaccinated individuals with no known exposure to someone with suspected or confirmed COVID-19 may refrain from asymptomatic serial screening programs where feasible.[4] If a fully vaccinated person becomes symptomatic, they should seek testing and follow relevant CDC guidelines. Employers may also choose to require employees to participate in screening testing, even if vaccinated.

Subsequent guidance in this document is applicable to unvaccinated populations.

Potential settings for implementation

Asymptomatic serial screening using antigen testing may be especially valuable in any congregate setting where there is consistent access to a defined population.

Noteworthy examples include:

- Schools
- Workplaces (including food processing and agricultural facilities)
- Colleges and universities
- First responder crews
- Homeless shelters (longer term residents / community members and staff)
- Congregate living facilities
- Correctional or detention facilities
- Sports teams

Asymptomatic serial screening can also be conducted at community testing sites during times of high COVID-19 transmission.

Protocol for asymptomatic serial screening using antigen testing

How frequently should the population be tested?

Screening frequency may vary depending on resources available for testing, including staff time and costs; the average incidence in the past 7 days and test positivity rate; and other known factors about the epidemiology of transmission in a particular community or cohort.[5] Depending on context, it may be appropriate to test the population 1-3 times per week. According to CDC guidance, more frequent testing is appropriate when there are substantial or high levels of community spread (see table 1). For example, weekly screening may be reasonable in areas with low or moderate transmission, while more frequent screening may be needed in areas with higher prevalence. In the highest risk settings, the maximum interval for testing could be every 36-48 hours.

Table 1. CDC Indicators and Thresholds for Community Transmission of COVID-19

Indicator[6]	Low	Moderate	Substantial	High
Cumulative number of new cases per 100,000 persons within the last 7 days[7]	<10	10-49	50-99	≥100
Percentage of NAATs that are positive during the last 7 days[8]	<5%	5%-7.9%	8%-9.9%	≥10.0%

When are follow up tests required?

If an antigen test returns a positive result, the individuals should be treated as a **presumed positive.** They should begin isolation and have a second sample collected for confirmation using RT-PCR testing. The individual should remain isolated until the RT-PCR result is received and may discontinue isolation only if the RT-PCR result is negative and the individual remains asymptomatic. In this instance, the antigen test result can be considered a false positive result. False positive results are rare; however, they can occur, especially in populations where the prevalence of SARS-CoV-2 infection is low.

A negative test in an asymptomatic individual does not require confirmatory testing. Symptomatic individuals should follow standard isolation and symptomatic testing protocols and are not discussed in this document.

The CDC has published an Antigen Test Algorithm to assist with test interpretation and determining the need for follow-up testing.

Can an individual who tests negative disregard other infection control measures?
No. A negative antigen test result should be considered a presumptive negative and should not be used as the sole criteria to permit the tested individual to engage in unprotected interaction with others, particularly in high-risk group settings such as congregate living facilities (e.g., long-term care facilities, correctional facilities, etc.), congregate employment settings, contact sports, schools, etc. It is essential that any currently recommended infection control mitigation measures remain in place (e.g., mask wearing, physical distancing, and hand hygiene) for the site in which serial testing is being done.

How should results be reported?
Results of all positive and negative antigen tests should be reported to local public health districts or the Idaho Division of Public Health, Bureau of Communicable Disease Prevention, Epidemiology Section. Please contact epimail@dhw.idaho.gov for questions about reporting. People who test positive for SARS-CoV-2 (either by antigen testing or RT-PCR) might be contacted by local public health authorities for case investigation and contact tracing purposes.

How can antigen tests and other supplies be procured?
Certain types of antigen tests may be available through the Idaho Division of Public Health, along with associated testing supplies. Test kits may also be directly procured from manufacturers or pharmacies.

Please contact the Idaho Bureau of Laboratories at statelab@dhw.idaho.gov if you need testing supplies or support procuring tests.

References

[1] https://www.cdc.gov/coronavirus/2019-ncov/hcp/testing-overview.html

[2] https://www.fda.gov/medical-devices/coronavirus-disease-2019-covid-19-emergency-use-authorizations-medical-devices/in-vitro-diagnostics-euas-antigen-diagnostic-tests-sars-cov-2

[3] Modeling evidence shows that outbreak control depends largely on the frequency of testing, the speed of reporting, and the application of interventions, and is only marginally improved by the sensitivity of the test. Additional evidence shows the value of repeat testing, using RT-PCR with fast turnaround times, for informing clinical and public health decision-making. For this reason, serial antigen testing may have benefits for early identification and controlling outbreaks in some situations, such as congregate living, compared to laboratory-based RT-PCR with prolonged turnaround times.

[4] https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated-guidance.html

[5] https://www.cdc.gov/coronavirus/2019-ncov/hcp/testing-overview.html

[6] Indicators should be calculated for counties or core based statistical areas, although in rural areas with low population density, multiple jurisdictions might need to be combined to make the indicators more useful for decision-making. The indicators listed can be found by county on CDC's COVID Data Tracker Website under "county view". If the two indicators suggest different transmission levels, the higher level should be selected.

[7] Number of new cases in the county (or other administrative level) in the last 7 days divided by the population in the county (or other administrative level) and multiplying by 100,000.

[8] Number of positive tests in the county (or other administrative level) during the last 7 days divided by the total number of tests resulted in the county (or other administrative level) during the last 7 days.