

COVID-19 Nasopharyngeal (NP) vs Nares Collection Method 12.23.20 1600

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Background

The CDC supports the collection of several different upper respiratory specimens for COVID-19 molecular testing including nasopharyngeal (NP), anterior nares (nasal), and oropharyngeal (throat) swabs. NP is historically regarded as the best collection for test performance, however, the CDC removed their preference for NP swab collection on April 29, 2020.

Rationale for Nares Collection

A review of published literature comparing NP vs. nares swab sensitivity for detecting SARS-CoV-2 and other respiratory viruses concluded that the sensitivity of a nares collection is approximately 90% as compared to a NP swab. In the setting of low to moderate community prevalence of 5%, nares swab testing would still have a high negative predictive value of 99.5% indicating that nares testing would rarely miss true positive patients. The use of a nares collection has several benefits related to ease of collection, ability to expand collection efforts, patient discomfort, and required PPE for healthcare personnel.

	NP Swab	Nares Swab
Test performance	Gold standard collection	Approximately 90% sensitive as compared to NP
Negative predictive value	100% (assuming 100% sensitivity)	99.5% (5% prevalence)
Collection process	Requires specially trained personnel	May be self-collected with observation in a healthcare setting
Collection PPE	See PPE Guide	See PPE Guide
Patient Satisfaction	Significant discomfort	Less invasive, better tolerated
CDC Supported	Yes	Yes

Recommendation

Laboratory and clinical leaders have reviewed the best use cases for NP and nares collections with CDC and state guidelines, internal risk stratification, throughput, and response time to hot spots as factors in the decision to suggest the use of one collection method over another.

NP swabs remain the preferred collection for symptomatic individuals that are more likely to have COVID-19 and in hospital settings that routinely perform this technical collection.

Nares sampling is an attractive alternative for the serial screening of asymptomatic individuals (i.e. nursing home residents and staff), those in which collection of an NP swab is anatomically challenging, and for those who decline or refuse an NP collection.

References

- 1.) CDC Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for COVID-19. <https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html>
- 2.) Tu YP, Jennings R, Hart B, et al. Swabs Collected by Patients or Health Care Workers for SARS-CoV-2 Testing [published online ahead of print, 2020 Jun 3]. *N Engl J Med.* 2020; NEJMc2016321.
- 3.) Kojima N, Turner F, Slepnev V, et al. Self-Collected Oral Fluid and Nasal Swabs Demonstrate Comparable Sensitivity to Clinician Collected Nasopharyngeal Swabs for COVID-19 Detection. [published online, 2020 April 15]. <https://doi.org/10.1101/2020.04.11.20062372>