



NASOPHARYNGEAL SWAB COLLECTION FOR COVID-19

# LEARNING OBJECTIVE

- ▶ BY THE END OF THE LEARNING ACTIVITY THE STUDENT WILL:
  - ▶ BE ABLE TO GATHER EQUIPMENT NEEDED FOR TESTING;
  - ▶ VERBALIZE STEPS REQUIRED FOR TESTING INCLUDING PRE AND POST PROCEDURE;
  - ▶ EDUCATE PATIENTS REGARDING THE PROCEDURE AND PARTICIPATION;
  - ▶ DEMONSTRATE PROPER TESTING TECHNIQUE; AND
  - ▶ DEMONSTRATE PROPER HANDLING OF SPECIMEN

# Supplies Needed

- ▶ Nonsterile gloves, gown, or face mask , and google or face shield<sup>(1)</sup>  
<sup>(2)</sup> <sup>(3)</sup> <sup>(5)</sup>
- ▶ Specimen collection kit(s) intended to detect SARS-CoV-2, including swabs with synthetic tip and plastic (not wooden) shaft<sup>(7)</sup> <sup>(8)</sup> <sup>(5)</sup> <sup>(7)</sup>
- ▶ Small sterile specimen container if collecting a sputum sample
- ▶ Biohazard bag

# Pre-Procedure Steps

- ▶ Review patient's identification and review the process with them:
  - ▶ Appropriate patient position and comfort
  - ▶ explain process and that there may be some slight discomfort
- ▶ Replace swab into the transport tube and secure
- ▶ Make sure that specimen is handed off to lab technician
- ▶ Follow [standard pre-procedure steps](#), as appropriate.<sup>(12)</sup>

# Procedure Steps

- ▶ Use meticulous hand washing and aseptic non-touch technique throughout procedure to prevent disease transmission.
- ▶ Put on a gown, gloves, face mask or, and [goggles or face shield in the correct order](#) before initiating specimen collection <sup>(1) (2) (3) (5)</sup>
- ▶ Have patient sit upright for specimen collection, if possible.
- ▶ **To obtain nasopharyngeal specimen** (priority specimen type for diagnosis):<sup>(1) (5) (7) (8)</sup>
  - ▶ Have patient tilt their head back 70°. Use non-dominant hand to support back of head, as needed.
  - ▶ Inspect nasal passages for obstruction. Avoid collecting specimen collection from an obstructed nostril.
  - ▶ If there is a lot of mucus in nose, have patient wipe or blow nose because mucus can interfere with obtaining a good specimen.
  - ▶ Open test kit and remove swab. Verify swab is intended for nasopharyngeal specimen collection. Do not allow swab to come into contact with any surface.
  - ▶ Holding swab at score line, insert swab into nostril parallel to palate until tip is roughly at level of anterior ear.
  - ▶ If resistance is met, withdraw swab slightly, elevate tip, and reinsert. Do not use force when inserting swab.
  - ▶ Rotate swab several times to obtain specimen. Leave in place a few seconds to allow absorption.
  - ▶ Remove swab and place in collection tube with sterile transport medium.
  - ▶ Break swab at score line. Place lid on collection tube and close tightly.



# PATIENT EDUCATION

- ▶ Inform individual that results will be sent to both them and employer  
(6) (7)
- ▶ Evaluate person briefly for any nasal injury

# POST-PROCEDURE

- ▶ Remove gloves, goggles or face shield, and gown in appropriate order
  - ▶ Discard personal protective equipment in an appropriate waste container.



# REFERENCES

## ▶ Case histories, case studies

- ▶ Holshue ML, DeBolt C, Lindquist S, et al: Washington State 2019-nCoV Case Investigation Team. First case of 2019 novel coronavirus in the United States. *N Engl J Med*. 2020;382(10):929-936. doi:10.1056/NEJMoa2001191
- ▶ Tang A, Tong ZD, Wang HL, et al. Detection of novel coronavirus by RT-PCR in stool specimen from asymptomatic child, China [published online June 17, 2020]. *Emerg Infect Dis*. 2020;26(2). doi:10.3201/eid2606.200301

## ▶ Published guidelines

- ▶ Centers for Disease Control and Prevention (CDC). Interim infection prevention and control recommendations for patients with suspected or confirmed coronavirus disease 2019 (COVID-19) in healthcare settings. <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>. Updated April 1, 2020. Accessed April 2, 2020.
- ▶ Centers for Disease Control and Prevention. Evaluating and testing persons for coronavirus disease 2019 (COVID-19). <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-criteria.html>. Updated March 14, 2020. Accessed April 2, 2020.
- ▶ Ontario Agency for Health Protection and Promotion. Coronavirus disease 2019 (COVID-19) testing. <https://www.publichealthontario.ca/en/laboratory-services/test-information-index/wuhan-novel-coronavirus>. Updated March 17, 2020. Accessed April 2, 2020.
- ▶ The Joint Commission (TJC). National patient safety goals effective January 2020: hospital accreditation program. [https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/npsg\\_chapter\\_hap\\_jan2020.pdf](https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/npsg_chapter_hap_jan2020.pdf). Published 2020. Accessed April 2, 2020.
- ▶ Public Health England. Suspected COVID-19 cases: sampling and packaging. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/866632/COVID-19\\_Sample\\_Packaging\\_Instructions\\_PHE\\_A3\\_poster\\_12.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/866632/COVID-19_Sample_Packaging_Instructions_PHE_A3_poster_12.pdf). Published 2020. Accessed March 20, 2020.
- ▶ Maryland Department of Health. COVID-19 (2019 novel coronavirus) guidance. <https://health.maryland.gov/laboratories/Pages/Novel-Coronavirus.aspx>. Accessed April 2, 2020.

## ▶ General or background information/texts/reports

- ▶ World Health Organization (WHO). Q&A on coronaviruses (COVID-19). <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses#:~:text=symptoms>. Published March 9, 2020. Accessed April 2, 2020.
- ▶ Lynn, P. Laboratory specimen collection. In: *Taylor's Clinical Nursing Skills: A Nursing Process Approach*. 5th ed. Philadelphia, PA: Wolters Kluwer; 2019:1036-1037.
- ▶ Centers for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19). Frequently asked questions about laboratory biosafety and SARS-CoV-2: specimen handling. <https://www.cdc.gov/coronavirus/2019-ncov/lab/biosafety-faqs.html>. Updated March 19, 2020. Accessed April 2, 2020.
- ▶ Food and Drug Administration. Fact sheet for healthcare providers: CDC - 2019-nCoV real-time RT-PCR diagnostic panel. <https://www.fda.gov/media/134920/download>. Published February 4, 2020. Updated April 2, 2020. Accessed April 2, 2020.

## ▶ Published government report

- ▶ European Centre for Disease Prevention and Control (ECDC). *ECDC technical report: personal protective equipment (PPE) needs in healthcare settings for the care of patients with suspected or confirmed novel coronavirus (2019-nCoV)*. ECDC: Stockholm; 2020. <https://www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-personal-protective-equipment-needs-healthcare-settings.pdf>. Accessed March 20, 2020.

## ▶ Policies, procedures, protocols

- ▶ Centers for Disease Control and Prevention. Sequence for putting on personal protective equipment (PPE). <https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf>. Accessed April 1, 2020.
- ▶ Yukon Health and Social Services. Nasopharyngeal swab procedure. <http://www.hss.gov.yk.ca/pdf/npswab.pdf>. Published October 2015. Accessed April 2, 2020.
- ▶ State of Rhode Island Department of Health. 2019-novel coronavirus (COVID-19) specimen collection kit instructions. <https://health.ri.gov/publications/instructions/COVID-19-Specimen-Collection-Kit.pdf>. Published March 2020. Accessed April 2, 2020.

## ▶ Published research (not randomized controlled trial)

- ▶ Chen N, Zhou M, Dong X, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet*. 2020;395(10223):507-513. doi:10.1016/S0140-6736(20)30211-7
- ▶ Xu XW, Wu XX, Jiang XG, et al. Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARS-CoV-2) outside of Wuhan, China: retrospective case series. *BMJ*. 2020;368:m606. doi:10.1136/bmj.m606
- ▶ Smieja M, Castirciano S, Carruthers S, et al. Development and evaluation of a flocced nasal midturbinate swab for self-collection in respiratory virus infection diagnostic testing. *J Clin Microbiol*. 2010; 48(9):3340-3342. doi:10.1128/JCM.02235-09
- ▶ Li Z, Yi Y, Luo X, et al. Development and clinical application of a rapid IgM-IgG combined antibody test for SARS-CoV-2 infection diagnosis [published online February 27, 2020]. *J Med Virol*. doi:10.1002/jmv.25727

## ▶ Published systematic or integrative literature review

- ▶ Pang J, Wang MX, Ang IYH, et al. Potential rapid diagnostics, vaccine and therapeutics for 2019 novel coronavirus (2019-nCoV): a systematic review. *J Clin Med*. 2020;9(3):E623. doi:10.3390/jcm9030623