

COVID-19 Polymerase Chain Reaction (PCR) Testing Swabs: Preferred Specimen Collection Methods



Objective

To provide an overview of the preferred specimen collection methods for novel coronavirus disease (COVID-19) polymerase chain reaction (PCR) testing



Key Messages

The following methods are preferred for specimen collection:

- **Nasopharyngeal (NP) swabbing** is the **optimal** specimen collection method for COVID-19 PCR testing
- **Combined swabbing of the throat AND both nostrils** (anterior nares) is a **preferred alternative** method when NP swabbings cannot be performed (e.g., may be considered for some children, when repeat sampling is likely, if NP swabs are unavailable)
- **Deep nasal swabbing** is also a **preferred alternative** method when NP swabbings or combined swabbing of the throat and both nostrils cannot be performed
- For further information on alternative specimen types, please refer to Public Health Ontario's evidence brief, *The Use of Alternate Specimen Collection Methods for COVID-19 PCR Testing*: <https://bit.ly/3nQ7fdQ>

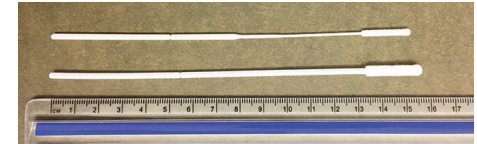


Important Considerations

- Anyone who is being tested (whether symptomatic or asymptomatic) should be counselled that an **NP swab is the recommended** specimen collection method, because specimens from this collection method are the **most sensitive**, resulting in more accurate results
- The collection of **NP and deep nasal swabs is a controlled act**; thus, only certain regulated health professionals or those to whom the act has been delegated may collect this type of specimen through a direct order or medical directive. The collection of **nostril and throat swabs is not a controlled act**, thus can be performed by anyone with appropriate training
- Nasopharyngeal swabs are intended for NP specimen collection; however, if NP swabs are the only type of swab available, they can also be used to collect deep nasal specimens and combined throat and nostril specimens
 - **The larger throat/nasal swabs cannot be used for NP specimen collection**
- To avoid testing delay or rejection, complete all fields of the COVID-19 Test Requisition, including specimen type and collection date: <https://bit.ly/312ImDj>

COVID-19 PCR Specimen Collection Kits

Typical nasopharyngeal swab (top) and typical throat/nasal swab (bottom)



Please see Public Health Ontario's website for more information on **COVID-19 PCR collection kits** for procurement.



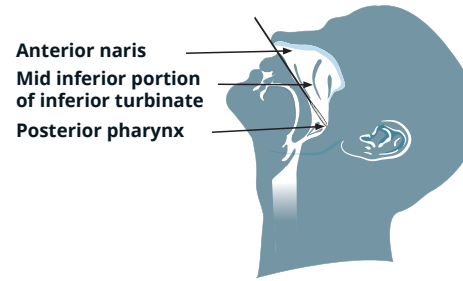
<https://bit.ly/36MYlrQ>

ISBN 978-1-4868-4807-2 (PDF)
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Preferred Swab Collection Specimen Types for COVID-19 PCR Testing

Nasopharyngeal (NP) **Optimal Method**

1. Tilt patient's head back 70°
2. Insert flexible shaft mini-tip swab through nares parallel to palate (not upwards) until:
 - a. Resistance is met, OR
 - b. Distance is equivalent to half the distance from the patient's ear to their nostril
3. Gently rub and roll the swab
4. Leave swab in place for several seconds to absorb secretions
5. Slowly remove the swab while rotating it and immediately place in sterile tube containing transport medium



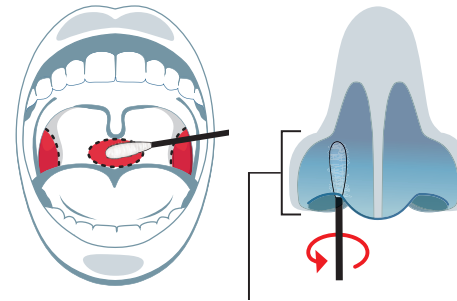
In a seated position, tilt the head back at a 70° angle as illustrated in the picture

Recommendation:
Optimal collection method
Sensitivity to Detect SARS-CoV-2:
Optimal sensitivity (**94.4%**)¹
Controlled Act:
Yes
Swab Type:
Nasopharyngeal swab only

Combined Throat and Both Nostrils (nasal/anterior nares)

Video Demo: <https://bit.ly/3kbKvmu>

1. Insert swab in posterior pharynx and tonsillar areas
2. Rub swab over posterior pharynx and bilateral tonsillar pillars; avoid tongue, teeth, and gums
3. Using the same swab, insert about 1 cm (0.5 in) inside nares*
4. Rotate swab and leave in place for 10-15 seconds
5. Using the same swab, repeat for the other nostril
6. Immediately place in sterile tube containing transport medium

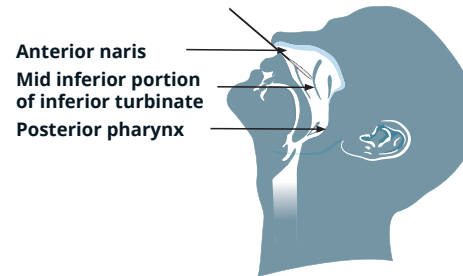


***Swab insertion distance will differ for paediatric patients**

Recommendation:
Preferred alternative when NP swab cannot be collected
Sensitivity to Detect SARS-CoV-2:
Approximates the sensitivity of an NP swab (**91.7%**)¹
Controlled Act:
No
Swab Type:
Nasopharyngeal swab **or** throat/nasal swab

Deep Nasal

1. Tilt patient's head back 70°
2. While gently rotating swab, insert swab about 2.5 cm (>1 in)* straight back (not up) into nostril until the collar/safety stopping point touches the outside of the nose
3. Rotate swab several times against the wall
4. Leave swab in place for several seconds to absorb secretions
5. Repeat for both nostrils using same swab
6. Immediately place in sterile tube containing transport medium



In a seated position, tilt the head back at a 70° angle as illustrated in the picture

Recommendation:
Preferred alternative when NP swab cannot be collected
Sensitivity to Detect SARS-CoV-2:
Approximates the sensitivity of an NP swab (**82.6%**)²
Controlled Act:
Yes
Swab Type:
Nasopharyngeal swab **or** throat/nasal swab

***Swab insertion distance will differ for paediatric patients**

Source: Adapted from Public Health Ontario, 2020 <https://bit.ly/3dnX3oh> | Detailed specimen collection instructions from Public Health Ontario: <https://bit.ly/2GUwTh8>

¹LeBlanc JJ, Heinstein C, MacDonald J, Pettipas J, Hatchette TF, Patriquin G. A combined oropharyngeal/nares swab is suitable alternative to nasopharyngeal swabs for detection of SARS-CoV-2. J Clin Virol. 2020;128: 10442. <https://doi.org/10.1016/j.jcv.2020.104442>

²Kojima N, Turner F, Slepnev V, Bacelar A, Deming L, Kodeboyina S, et al. Self-collected oral fluid and nasal swabs demonstrate comparable sensitivity to clinician collected nasopharyngeal swabs for covid-19 detection. medRxiv 20062372 [Preprint]. 2020 Apr 15 [cited 2020 Oct 09]. Available from: <https://doi.org/10.1101/2020.04.11.20062372>