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:

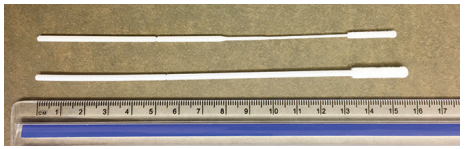
- **Nasopharyngeal (NP) swabbing** is the **optimal** specimen collection method for COVID-19 PCR testing
- **Combined swabbing of the throat AND both nostrils** (anterior nares) is a **preferred alternative** method when NP swabbing cannot be performed (e.g., may be considered for some children, when repeat sampling is likely, if NP swabs are unavailable)
- **Deep nasal swabbing** is also a **preferred alternative** method when NP swabbing 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

- The collection of an **NP specimen** 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 **throat, nasal, and deep nasal specimens are not controlled acts**, 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 nasal 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/312lmDj

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

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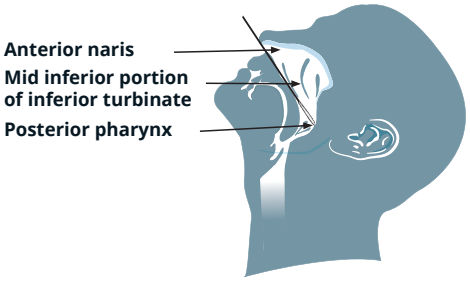
Preferred Swab Collection Specimen Types for COVID-19 PCR Testing

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/buffer



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]

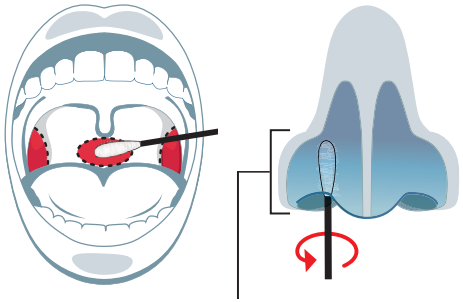
Controlled Act:
Yes

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 several times against the nasal wall
5. Leave swab in place for several seconds to absorb secretions
6. Using the same swab, repeat for the other nostril
7. Immediately place in sterile tube containing transport medium/buffer



***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]

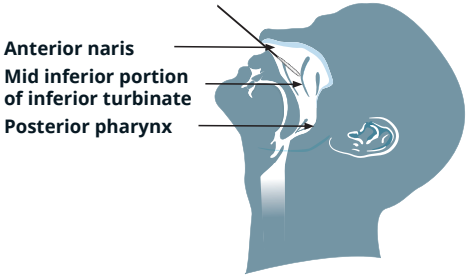
Controlled Act:
No

Swab Type:
Nasopharyngeal swab **or** throat/nasal swab

Deep Nasal

1. Tilt patient's head back 70°
2. Insert swab about 2.5 cm (~1 in)* straight back (not up) into nostril – stop when you meet resistance (at turbinates)
3. Rotate swab several times against the nasal wall
4. Leave swab in place for several seconds to absorb secretions
5. Using the same swab, repeat for the other nostril
6. Immediately place in sterile tube containing transport medium/buffer

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



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:
No

Swab Type:
Nasopharyngeal swab **or** throat/nasal swab

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

[1]LeBlanc 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

[2]Kojima 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

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