



TYPES OF SAMPLES AND COLLECTION METHODS

Proper Collection of specimens is the most important step in the laboratory diagnosis of diseases. Quality results starts from the quality and integrity of the specimens. Improperly collected specimens may lead to false negative test results. The following specimen collection guidelines should be followed for proper specimen collection.

- Only trained health care worker should be involved in specimen collection.
- Determine if the patient meets the criteria for testing for COVID-19.
- Specimens should be collected as soon as possible once a suspected case is identified regardless of time of symptom onset.
- Consider all the clinical specimens as potentially hazardous / infectious.
- Place each specimen into a separate container labeled with the patient's name and a unique identification number, the collection site, the date and time of collection
- Do not contaminate the outside of the specimen container.
- Do not handle laboratory requisition forms with gloves.
- Personal protective equipment to be provided for sample collection includes:
 - Disposable surgical cap
 - N95 mask
 - Medical protective gown
 - Goggles
 - Face shield
 - Disposable gloves
 - Soap water/ alcohol-based hand-sanitizer
- All Biosafety precautions should be strictly followed during sample collection and packaging.
- For initial diagnostic testing for COVID-19, collection and testing of upper respiratory specimen is recommended.

I. Respiratory Specimens

A. Upper Respiratory Tract

1. **Nasopharyngeal swab/Oropharyngeal (Throat) Collection:** This is the preferred specimen type for RT-PCR due to higher diagnostic sensitivity although OP swabs are also acceptable. If both NP and OP swabs are collected, they should be combined in a single tube to maximize the sensitivity and limit use of testing resources.

Collection Technique.



Nasopharyngeal (NP) Swab: (Preferred specimen type)

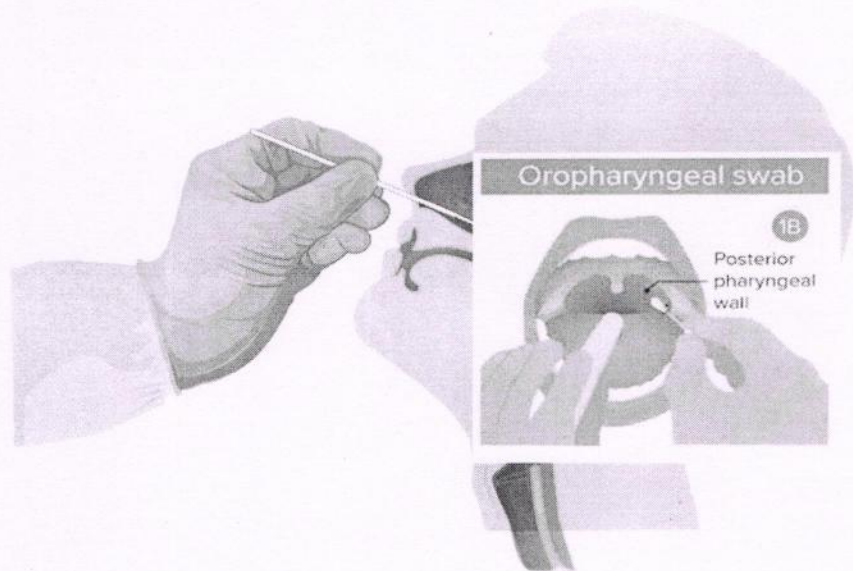
- a) Tilt patient's head back 70 degrees.
- b) Insert minitip swab with flexible shaft (wire or plastic) through the nostril parallel to the palate (not upwards) until resistance is encountered or distance is equivalent to that from the ear to the nostril of the patient, indicating contact with the nasopharynx.
- c) Swab should reach the depth equal to distance from nostrils to outer opening of the ear.
- d) Gently rub and roll the swab
- e) Leave the swab in place for several seconds to absorb the secretions
- f) Slowly remove swab while rotating it.

2. Oropharyngeal (OP) Swab

- a) Insert swab posteriorly

to reach the pharynx and tonsillar areas

- b) Rub swab over the posterior oropharynx and avoid touching the tongue, teeth and gums



A nasal mid-turbinate (NMT) swab

Collected by a healthcare professional or by onsite self-collection (using a flocked tapered swab).

METHOD: Tilt patient's head back to 70 degrees. Gently insert the swab by slow rotations. Push the swab gently until slight resistance is met at the level of turbinates. Rotate the swab several times against the nasal wall and gently remove the swab.



1. ***An anterior nares (nasal swab; NS) specimen***

- a. collected by a healthcare professional or by onsite self-collection (using a flocked or spun polyester swab). A single polyester swab with a plastic shaft should be used to sample both nares. At the moment, anterior nares and mid-turbinate specimen collection are only appropriate for symptomatic patients and both nares should be swabbed.

2. ***Nasopharyngeal wash/aspirate or nasal wash/aspirate***

- a. Attach catheter to suction apparatus. Have the patient sit with head tilted slightly backward. Instill 1 mL-1.5 mL of non-bacteriostatic saline (pH 7.0) into one nostril. Insert the tubing into the nostril parallel to the palate (not upwards). Catheter should reach depth equal to distance from nostrils to outer opening of ear. Begin gentle suction/aspiration and remove catheter while rotating it gently. Place specimen in a sterile viral transport media tube.

B. Lower Respiratory Tract

1. **Bronchoalveolar lavage, tracheal aspirate, pleural fluid, lung biopsy**

Collect 2-3 mL into a sterile, leak-proof, screw-cap sputum collection cup or sterile dry container. Due to the increased technical skill and equipment needs, collection of specimens other than sputum from the lower respiratory tract may be limited to patients presenting with more severe disease, including people admitted to the hospital and/or fatal cases.

2. **Sputum:** Educate the patient about the difference between sputum and oral secretions (saliva). Have the patient rinse the mouth with water and then expectorate deep cough sputum directly into a sterile, leak-proof, screw-cap collection cup or sterile dry container. DO NOT INDUCE patient for sputum sample collection.

II. Storage:

Store specimens at 2-8°C for upto 72 hours after collection. If a delay in testing or shipping is expected, store specimens at -70°C or below.

III. Shipping:





If specimens will ship without delay, store at 2-8⁰C. If a delay in shipping is expected more than 72 hours after collection, store specimens at -70⁰C or below.

Biohazard bag with two pockets is highly recommended for transport of specimen. The requisition form must be kept in the outer pocket and the specimen tube goes in inner pocket.

If biohazard bag is not available, double bagging is acceptable with specimen in inner bag and requisition in outer bag.

**The triple packed sample must be kept in an icebox with ice pack maintaining the temperature between +2 to +8⁰C during transport.*

Link to Video: <https://youtu.be/orRq1GbT0yI>