

Inserting a Nasogastric Tube in Adults

Purpose

A nasogastric tube is a flexible tube that provides access to the stomach through the nose. They are inserted for a variety of reasons. Typically, the purpose is to decompress the stomach, provide drainage of gastric contents, or deliver nutrition and/or medications to patients with difficulty swallowing or to patients at risk for [aspiration](#). The 2 most commonly used types of nasogastric tubes are the single lumen and the double lumen (one for drainage and a smaller one that is left open to the atmosphere to provide ventilation).

Nasogastric tube insertion involves passing the tube through the nose, along the nasal floor, through the pharynx, and down the esophagus until the proximal tip of the tube rests in the patient's stomach.

Red Flags

- Use appropriate [methods to prevent an enteral misconnection](#) (errors such as connecting a feeding administration set to a [tracheostomy](#) tube, IV tube, or epidural tubing). ^{1, 2}
- **Do not** rely on auscultation method (injecting a small amount of air through tube and auscultating over stomach simultaneously to listen for influx of air) to verify tube placement. This method is not reliable. ^{1, 3}
- **Do not** preflush nasogastric tube with water prior to insertion unless tube includes a guidewire or stylet. ⁴ Water in the nasogastric tube can affect the pH of the aspirate, giving a false result. ⁵
- **Do not** instill any liquids or medications through nasogastric tube or connect it to suction until its placement in stomach has been confirmed. ⁴
- **Do not** interpret absence of respiratory distress during and after tube insertion as confirmation of proper tube placement. ³
- **Do not** insert nasogastric tube if there is significant facial trauma or basilar skull fractures. ⁶

Procedure

SUPPLIES



1. Check care plan, treating clinician orders, and facility practice for inserting a nasogastric tube. Note type and size of nasogastric tube.
2. Review patient's medical history/medical record for: ⁴
 - Indications/contraindications for nasogastric tube insertion, including impaired swallowing, pyloric stenosis, and risk of [aspiration](#)
 - History of any related surgery or injury to nose, nasal cavity, pharynx, esophagus, stomach, or head
 - Coagulation profile (risk of epistaxis if abnormal)
 - Medication use (some medications cannot be administered through nasogastric tube)
 - Lab tests to check CBC, PTT, prothrombin time
 - Allergies (use alternatives, as appropriate)
3. If possible, have a colleague help with procedure. ^{4, 5}
4. Follow [standard preprocedure steps](#), as appropriate. ^{7, 8, 9, 10}

PROCEDURE STEPS



1. Use [Standard-ANTT](#) to prevent infection throughout procedure. ¹¹
2. Create a [General Aseptic Field](#) by cleaning off and disinfecting working surface (or tray). Let surface dry before using. ¹¹
3. Perform hand hygiene. Put on nonsterile gloves. ¹¹
4. Perform patient assessments.
 - a. Perform abdominal assessment, assessing bowel sounds and noting any areas of tenderness. If there are any alterations from normal, notify treating clinician prior to proceeding. ⁴
 - b. Obtain vital signs, particularly oxygenation saturation. ⁴
 - c. Assess patient's nares for patency. Use a penlight to inspect nares. Occlude 1 side and have patient sniff. Repeat on opposite side. Choose naris that has best airflow for nasogastric tube insertion. ⁵
5. Position patient, as appropriate. Use: ⁴
 - High-Fowler position if patient is alert and there are no contraindications
 - Reverse Trendelenburg if patient is required to be supine
 - Semi-Fowler position if patient is comatose

6. Prepare patient.

- a. Stand on same side of bed as naris chosen for insertion. ¹²
- b. Place a towel or waterproof linen-saver across patient's chest as a protective barrier.
- c. Place emesis basin and facial tissues within patient's reach.
- d. Clear nares with cotton swabs or have patient blow nose.

7. Prepare supplies.

- a. Check condition of nasogastric tube for defects, such as rough edges.
- b. Measure length of nasogastric tube. Hold insertion end of nasogastric tube at tip of nose and measure to ear lobe. From ear lobe, measure to xiphoid process. Add 7.5-10 cm (3-4 in). Mark point with a marker or tape. ^{4, 12}
- c. Prepare tube fixation device or cut a strip of tape in half lengthwise leaving lower half intact. Have a temporary strip of tape to use while waiting on placement confirmation.

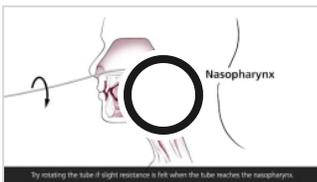
8. Verify [rights of safe medication administration](#) ^{7, 8, 13, 14} and administer prescribed anesthetic medication if ordered.

9. Apply water-soluble lubricant to proximal tip of nasogastric tube. If tube is coated with lubricant, activate coating by placing tip in sterile water.

10. Encourage patient to hold head upright. Support patient's head with your nondominant hand while inserting nasogastric tube. ⁴

11. Have patient hold a cup of water with a straw if not contraindicated.

12. Insert nasogastric tube into selected nostril. Pass along floor of nasal passage on lateral side, pointing toward ear. ¹²

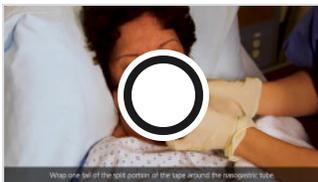


13. When tube reaches nasopharynx, note there will be some mild resistance. Continue inserting tube but do **not** force it. ^{4, 12}

14. Ask patient to start taking sips of water to prevent gagging. As patient swallows, advance nasogastric tube using a rotating motion. ^{12, 15}

15. While advancing tube, have patient flex neck with chin down to help with passage of tube. ^{11, 13}

- If patient develops respiratory distress during advancement of tube (sign that tube is in respiratory tract), pull nasogastric tube back until normal breathing resumes.
 - Reattempt to advance tube once patient begins breathing normally.
16. Once tube is in place, use temporary tape to secure nasogastric tube to nose.
 17. Use penlight and tongue blade to check for position of tube in back of throat. It should not be twisted or in the mouth.
 18. Ask patient to speak. Normal speech is a positive sign, although not confirmatory, that tube has not entered respiratory tract. ^{4, 12}
 19. Verify proper tube placement immediately after insertion using evidence-based, facility-approved method (typically abdominal x-ray or pH testing of aspirate). ^{1, 3, 16, 17} Note a fasting pH value of 1-5.5 generally indicates gastric placement (although cutoff may vary per facility and among age groups).
 20. Use a combination of evidence-based, facility-approved [methods for ongoing tube placement verification](#), including checking tube markings and comparing length of tube from exit site against documented insertion length. ^{1, 3, 16, 18}
 21. Do not rely on auscultation method to confirm gastric tube placement. This method is not reliable. ^{1, 3}
 22. Once placement is confirmed, secure nasogastric tube to patient's nose.
 - a. Verify skin is clean and dry. Apply benzoin or other type of skin preparation to stabilize and promote better tape or securement device adhesion to skin.
 - b. Allow benzoin to become "tacky" prior to tape application. ⁴
 - c. If using strips, cut in half and wrap slit ends around nasogastric tube and apply other end to nose. Secure with another piece of tape over bridge of nose.
 - d. **Avoid** placing pressure when taping nasogastric tube to nose. Pressure from the tube can cause necrosis. ⁵



23. If a guidewire or stylet was used with nasogastric tube, remove it once placement is confirmed and nasogastric tube is secured. ⁵
24. If nasogastric tube is only for suction, attach to appropriate suction device as ordered.
25. Position nasogastric tube so distal end is facing upward and attach it to patient's gown or clothing, per facility protocol.

26. Remove and discard gloves. Perform hand hygiene.

27. Position patient with head of bed elevated at 30° if not contraindicated.

PATIENT/FAMILY EDUCATION ^

- Explain purpose of nasogastric tube insertion and steps involved.
- Inform patient presence of a nasogastric tube can be mildly uncomfortable but should not be painful or cause breathing difficulties, coughing, or choking.
- Advise patient they may feel some discomfort as tube moves through nose, but tube will be lubricated and a topical anesthetic applied to ease passage.
- Explain patient will be given a cup of water to sip or ice chips to swallow once tube reaches pharynx. The swallowing action will facilitate passage of tube and minimize risk of gagging or vomiting.
- Provide patient education resources, if available, to reinforce verbal education.

POSTPROCEDURE STEPS ^

1. Follow [standard postprocedure steps](#), as appropriate. ^{7, 8}
2. Due to risk of tube displacement, always [confirm tube placement](#) prior to each intervention. ^{1, 3, 16, 18}
3. Provide oral hygiene regularly since nasogastric tubes tend to cause mouth breathing. ⁵

DOCUMENTATION ^

Update patient's plan of care and medical record, as appropriate. Include:

- Date/time of procedure
- Type and diameter of nasogastric tube, record length of tube inserted
- Following initial placement, information about date/time position was checked, if aspirate was obtained, pH value, and external or internal length of tube
- Patient assessment information, including patient's tolerance of procedure

- Any unexpected patient events or outcomes, interventions performed, and whether treating clinician was notified
- Patient/family education, such as topics presented, response to education, plan for follow-up education, any communication barriers, and techniques that promoted successful communication

Care Considerations

- It may be helpful to have the patient signal if discomfort occurs during insertion. A method should be agreed upon on before the nasogastric tube is inserted. ¹²
- Patients on proton pump inhibitors or those who have had previous gastric surgery must have an x-ray to confirm placement. Proton pump inhibitors alter the pH, thus making the pH test inaccurate as a check for placement. ^{19, 20}
- ISO-compliant adapters are standard connectors used with feeding tubes, feeding tube sets, and syringes. They do not fit on luer connections and, therefore, cannot inadvertently allow instillation of tube feeding or medications into an IV line. ²¹
- The 2 most commonly used types of nasogastric tubes are single lumen and double lumen (one for drainage and a smaller one that is left open to the atmosphere to provide ventilation). ⁶
- Guidelines for nasogastric tube placement confirmation vary depending on locale. In the United Kingdom, Europe, and Australia, radiographic confirmation is only done if the pH method fails or a patient is considered high-risk (that is, older, critically ill, or with altered LOC). In the United States, radiographic confirmation is generally performed regardless of the pH results. ³