

# Nasogastric Tube Insertion Procedure

## PURPOSE

To create access for administration of medications or nutrition into the stomach.

## POLICY

1. Insertion of a nasogastric tube requires close observation of the patient while the tube is passed, followed by verification of proper placement.
2. When any type of nasoenteric tube is placed for enteral feeding, it is mandatory to check for proper placement. The easiest method is to aspirate gastric contents.
3. Nasogastric tubes with stylets should not be inserted in the home, without x-ray verification of placement.
4. The most accurate method to determine correct placement of a nasogastric tube is by x-ray verification. The evidence is inconclusive in studies and literature regarding the accuracy of aspiration of stomach contents versus auscultation of air injected into the tube. Auscultation over the stomach can pick up sound transmitted through a tube that has inadvertently been passed into the bronchial tree. Flexible small bore tubes may pass through the glottis and trachea without noticeably interfering with phonation or respiration. Both aspiration and auscultation are widely used in the alternate care setting; if incorrect placement of the tube is suspected, feedings should not be administered.
5. The nasogastric tube shall not be taped to the patient's forehead, as the pressure on the nostril can cause tissue necrosis.
6. The proper position for tube placement for gastric feedings is in the body or fundus of the stomach.
7. Nasogastric tubes shall be changed routinely according to the manufacturer's recommendations.

## EQUIPMENT

Liquid hand soap or hand sanitizing gel

1 pair of exam gloves

Appropriate size of nasogastric tube (per order)

Penlight or flashlight

Cup of water with a straw (unless contraindicated)

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Catheter tip syringe

Water soluble lubricant (i.e. K-Y® jelly)

Tape

Emesis basin or bowl

Tissues or towel

Stethoscope

OPTIONAL: Catheter clamp, plug, or three-way stopcock

Skin protector

Litmus paper

## PROCEDURE

1. Obtain physician orders. Explain the procedure to the patient. As some discomfort may be felt during the procedure, establish a signal that the patient can use to stop the procedure momentarily.
2. Wash hands thoroughly with soap and water. Dry with a clean paper towel.
3. Assemble supplies on a clean surface.
4. Test the tube's patency. Check for rough spots or ragged edges. If the tube is too stiff to insert gently, place in warm water for a few minutes to increase flexibility. If the tube is too flexible or soft, chill in a basin of ice for a few moments.
5. Place the patient in a sitting position with the head tilted back slightly.
6. Cover the patient's clothing and bed linen or furniture with a towel and place tissues and basin nearby.
7. Using a penlight or flashlight, inspect the patient's nares for possible obstruction or deformity. Occlude one nostril at a time and choose the nostril with the better air flow.
8. Determine the length of tube to be inserted. Mark tube to provide a baseline for daily assessment. Measuring the total distance from the tip of the nose to the ear to the xiphoid process will provide an estimate of distance from the nose to the stomach in 98% of patients (including pediatrics).

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9. Put on exam gloves.
10. Coil the first 3-4 inches around your fingers to curve the tube, which makes it easier to pass.
11. Lubricate the distal end of the tube for about 6-8 inches (15-20cm) with water or a thin coat of water soluble lubricant.
12. Stabilize the patient's head with one hand, using the other to insert the catheter. Push nose up slightly to widen the nostril. Pass the tube gently along the floor of the nose, toward the ear and downward.
13. When the tube reaches the pharynx, the patient may gag. Allow patient to rest a few moments if necessary. If the patient swallows, passage of the tube should be synchronized with swallowing.
14. Unless contraindicated, ask the patient to sip water as you advance the tube into the stomach. Advance the tube 3-5 inches each time they swallow, until the pre-measured mark on the tube is reached.
15. While advancing the tube in the unconscious patient (or in any patient that cannot swallow), tilt the head toward the chin to close the glottis to prevent the tube from entering the trachea. While advancing the tube, watch for a swallow or stroke the patient's throat.

***Pediatric consideration:*** In the infant, observe for vagal stimulation (i.e. bradycardia) and apnea.

16. **If you meet resistance at any point, immediately stop advancing the tube.** Rotate the tube 180° and try advancing again. If you are unsuccessful, remove the tube, re-lubricate and try inserting in the other nostril, providing it is unobstructed.
17. While passing the tube, observe for signs that the tube has entered the trachea: choking or difficult breathing in the conscious patient and cyanosis in the unconscious patient or patient without a gag reflex. If these signs occur, stop immediately and remove the tube. Allow the patient time to rest before reinsertion.
18. To check for placement of the tube:

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- a. Attach the syringe to the tube and attempt to aspirate stomach contents. If necessary, position the patient on his left side to move the contents in the stomach to the greater curvature.
  - b. The pH of gastric contents may assist in verifying placement of the NG tube (normal range = 1.5-5.5). Some medications (e.g., cimetidine) may alter the results of pH monitoring.
19. When correct placement of the tube is confirmed, secure the tube.
  20. The nasogastric tube may be connected to the tube feeding as prescribed by the physician, or occluded using a clamp, catheter plug or three way stopcock.

***Pediatric Considerations:*** The correct feeding position for an infant is right side lying, with the chest and head slightly elevated. Feeding time should be approximately as long as when the corresponding amount is given by nipple. (5ml over 5-10 minutes).

***NOTE:*** Intermittent nasogastric feeding is often preferred to indwelling nasogastric feeding. An indwelling tube may coil and knot, perforate the stomach and cause nasal airway obstruction, ulceration, irritation of mucous membranes, incompetence of the esophageal-cardiac sphincter, and epistaxis. However, if intermittent intubation is not well tolerated and the indwelling method is used, the tube should be clamped to prevent loss of feeding or entry of air, and changed every 48-72 hours. (Use alternate side of the nares). Constant alertness to the above problems should be stressed. The indwelling method may be preferred with an older infant or child.

21. Document the procedure in the patient's medical record.

### RESPONSIBILITY

The Clinical Specialist has the responsibility for approval of, compliance with, and revisions to this policy.

### MODIFICATION/REVISION

This policy is subject to modification or revision in part or its entirety to reflect changes in conditions subsequent to the effective date of this policy.

### REFERENCES

1. Infusion Nursing Standards of Practice – Revised 2016; Journal of Infusion Nursing, Supplement to January/February 2016, Volume 39, Number 1S.
2. Infusion Nursing: An Evidence-Based Approach, Third Edition edited by Mary Alexander, Ann Corrigan, Lisa Gorski, Judy Hankins, and Roxanne Perucca.

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3. INS (Infusion Nurses Society) Policies and Procedures for Infusion Nursing, 3<sup>rd</sup> Edition.
4. "Nasogastric Tube Placement Verification In Pediatric and Neonatal Patients", Pediatric Nursing: January/February 2009/Vol. 35/No 1. Farrington, Michele; Lang, Sheryl; Cullen, Laura; Stewart, Stephanie.