PURPOSE

Policy and procedure for the safe insertion of a nasogastric or orogastric tube.

POLICY STATEMENTS

Nasogastric tubes are contraindicated or used with extreme caution in people with particular predispositions to injury from tube placement. These may include:

- Patients with sustained head trauma, maxillofacial injury, or anterior fossa skull fracture. Inserting a Nasogastric (NG) tube blindly through the nose has potential of passing through the cribriform plate, thus causing penetration of the brain. An oral gastric tube may be considered in these cases.
- Patients with a history of esophageal stricture, esophageal varices, alkali ingestion are at risk for esophageal penetration.
- Comatose patients have the potential of vomiting during an NG insertion procedure, thus require protection of the airway prior to placing the NG tube.
- Caution should be utilized when passing an NG in patients with severe thrombocytopenia or mucositis.
- Caution should be utilized when passing an NG tube in a patient with suspected cervical spine injury.
  - Excessive manipulation or movement by the patient during placement including coughing or gagging may potentiate cervical injury.
  - Manual stabilization of the head is required during the procedure.

SITE APPLICABILITY

Applicable to all clinical areas where nasogastric/orogastric tubes may be inserted.

PRACTICE LEVEL/COMPETENCIES

Insertion of nasogastric/orogastric tubes is a foundational competency for Registered Nurses (RN). This skill is not within the scope of practice for Licenced Practical Nurses (LPN).

DEFINITIONS

Types of Nasogastric Tubes:

**PVC Tube** (made of a non-collapsible soft rubber or plastic (usually PVC) with a single lumen and holes at the tip and along the distal side) is typically used for decompression, lavage or for short-term feeding. Prolonged use of these tubes may result in stiffening of the tube which may increase risk of perforation.

*Replace tube every 72 hours.*

Polyurethane feeding tube without guidewire is ideal for long term Nasogastric (NG) feeding.

*Replace tube every 30 days.*
**Enteral Feeding Tube with guidewire** (made of silastic, silicone or polyurethane, with or without weighted ends) is used for long-term enteral feeding. **These tubes should generally be used when weighted ends are required or if guidewire is needed for insertion or if nasojejunal/transpyloric feeding is ordered/anticipated.**

**Replace tube every 30 days.**

Guide wires are used to stiffen soft pliable tubes as they travel through the nares to the stomach. Infants and small children have a short esophagus and there is less distance for the tube to travel. Therefore, in infants and children these tubes may be inserted without the use of the guide wire.

*Salem sump* tube is ideal for continuous suctioning because it does not adhere to and irritate the stomach's mucosal surface. It has 2 lumens, the second lumen serves as an air vent and allows atmospheric air to continually flow into the stomach, preventing the tip of the tube from adhering to the gut wall. Read package insert for instructions. **This tube is not used for feeding.**

**Replace PVC salem sump tube every 72 hours.** Prolonged use of PVC tubes may result in stiffening of the tube which may increase risk of perforation.

**Replace silicone salem sump tube every 30 days**

**EQUIPMENT**

- naso/oral gastric tube of appropriate size. Suggestions:
  - #5 Fr for infants less than 2.5 kgs
  - #6-8 Fr for newborns - 9 year old
  - #10 Fr for 9 years and up
  - 2 X 10 mL syringe sterile water if using feeding tube with guidewire
  - gloves
  - incontinence pad, towel and emesis basin
  - water-based lubricating jelly
  - glass of water with straw if patient able to drink
  - adaptor if required for attaching to suction tubing
  - 3 - 5mL syringe for aspirating (small syringe produces less negative pressure when aspirating)
  - 20-50 mL syringe for flushing (large syringe produces less positive pressure when flushing)
  - pH testing strip to test aspirate
  - Duoderm, tegaderm tape or tube securement device
  - waterproof tape and safety pin
  - permanent marker

**PROCEDURE**

1. **CHECK** chart for prescriber’s order to insert nasogastric or orogastric tube. The order must specify **indication** for tube insertion.

**Rationale**

Reason for tube insertion determines type of tube to use.

Use of a nasogastric tube is indicated to:
### NASOGASTRIC TUBE INSERTION

1. **Decompress the stomach by aspiration/suction of gastric contents** (fluid, air, blood).
2. **Introduce fluids** (lavage fluid, tube feeding formula, medications, activated charcoal into the stomach).
3. **Assist in the clinical diagnosis through analysis of substances found in gastric contents.**

**2. DETERMINE** if there are any contraindications to tube insertion and consult with physician in these cases. Prevents potential adverse events.

**3. GATHER** equipment. Facilitates completion of procedure in a timely manner.

**4. PREPARE** feeding tube with guidewire by flushing the tube with sterile water to dissolve internal lubricant. The tube may be inserted with or without the guidewire depending on clinician preference. If not using guidewire, remove it after flushing. Then flush with an additional 10 mL sterile water to remove any remaining lubricant gel and test for tube patency. Eases removal of guidewire after placement.

**5. IDENTIFY** patient and EXPLAIN procedure. Engage child life therapist as needed. Failure to correctly identify patients prior to procedures may result in errors. Reduces child and family’s anxiety. Evaluates and reinforces understanding of previously taught information and confirms consent for procedure.

**6. OBTAIN** help of second nurse as required.

**7. PERFORM** hand hygiene. Routine infection control practices; reduces transmission of microorganisms.

**8. DETERMINE** which nostril is most patent. A penlight may be used to check which nostril is more patent or occlude/ask child to occlude one nostril at a time and observe their breathing. Eases insertion.

**9. MEASURE** the distance with the gastric tube from the nares to the earlobe, to a point midway between the bottom of the sternum and the umbilicus. **MARK** tube with permanent ink. Estimate of distance from nose/mouth to stomach. Avoid using tape to mark tube as tape may become loose, fall off and present a choking hazard or may become dislodged in nares.

**NOTE:** With weighted tubes, measure from the feeding port openings, not the end of the weight.

**10. PLACE** incontinence pad or towel on patient's chest and have emesis basin available.

**11. PLACE** patient in high fowlers or sitting position or hold infant stabilizing the head in the neutral or “sniffing” position. Eases insertion.

**12. DON** clean gloves and coil the end of the tube around your index finger to produce a flexible curve. The curve helps ease insertion.

**13. LUBRICATE** tip of tube 2-4 inches. Minimizes injury to the nasal passages and eases insertion.

**14. INSERT** the tube:
   a. Instruct patient to hold head straight up with neck slightly hyper extended and facing forward or assist patient to hold this position.
b. Hold the end of the tube above the lubricant and with the curve pointing downward, carefully insert the tube along the floor of the nostril, on the lateral side. For oral insertion: direct to the back center of the mouth.

c. Offer the patient sips of water to help move the tube past the oropharynx. Infants may suck on a pacifier during the procedure.

d. Advance the tube each time the patient swallows until tube reaches marked length.

e. Observe patient throughout procedure for signs of tube mal-positioning (coughing, choking, inability to talk). Withdraw tube immediately if changes occur in patient’s respiratory status, if tube coils in mouth, or if the patient begins to cough, choke or changes colour.

f. Gently remove guidewire (when used) and retain at bedside for future use. **Never reinsert guidewire while tube is insitu.**

15. **CONFIRM** tube placement:
   a. flush tube with 1-5 mL of air using a 20-50 mL syringe. **DO NOT flush with liquid until placement confirmed**
   b. aspirate 1-5 mL of fluid using a 3-5 mL syringe and note visual characteristics of aspirate
   c. place a few drops on pH test strip - gastric pH should be 5.5 or less
   d. refer to algorithm if unable to obtain aspirate or if pH is 6 or above

   **Confirming correct tube placement before using the tube reduces harm caused by misplaced gastric tubes.**
   **Instilling air prior to aspirating clears tube of any fluid and eases aspiration.**

16. Once placement in stomach is confirmed, **SECURE** tube:
   a. Curve and tape the tube with transparent tape, or securement device, taped to the child’s cheek (on same side as nostril with tube) to prevent unnecessary tugging on the nostrils. (Do not tape to the patient’s forehead as this will put pressure on the nares).
   b. Wrap a small piece of tape around the tube near the connection creating a tab and pin to the patient’s gown/clothing.
   c. Measure the length of the tube from nose (or lip for oral insertion) to hub.

   **Prevents accidental dislodgement.**

17. **CLAMP** tube or **CONNECT** to suction or to feeds as ordered.

   **NOTE:** If a Salem sump tube is used it is important to remember that the blue pigtail must be kept at the level of the fluid in the patient’s stomach. This will prevent gastric contents from leaking back through vent lumen.

18. **REMOVE** equipment and **DISPOSE** appropriately. **PERFORM** hand hygiene.

   **Routine infection control practices; reduces transmission of microorganisms.**

**DOCUMENTATION**

**DOCUMENT** in appropriate record(s):
- procedure and time
- reason for tube insertion
- type and size of tube
- length of external tube from nose to hub
- nostril used
NASOGASTRIC TUBE INSERTION

- amount and character of aspirate or drainage
- pH testing result
- the type of suction and pressure setting if applicable
- patient's tolerance to procedure
- when tube is due to be changed
- any other pertinent actions or observations

REFERENCES


