

## NASOGASTRIC & OROGASTRIC DECOMPRESSION (SUMP) TUBE

### Table of Contents

---

- [Critical Points](#)
- [Supplies](#)
- [Procedure](#)
- [Troubleshooting](#)
- [References](#)
- [Appendix A: Supplies \(PMM\) Numbers](#)
- [Appendix B: Nasal Securement with Skin Barrier](#)
- [Appendix C: Nasal Securement with NG Strips](#)
- [Appendix D: Replogle Bubble Trap Set-Up](#)

### Critical Points

---

1. A decompression (sump) tube ([Fig. 1](#)) tube is a **large bore**, double lumen tube, with multiple holes at the distal end and made of material that does not collapse when suction is applied. It is latex-free and radiopaque with centimeter markings. The small lumen has a single hole at the tip of the distal end of the tube to serve as an air vent that pulls air into the stomach when suction is applied, preventing the tip of the tube from adhering to the gastric mucosa. It is used for decompression and lavage, and in select circumstances, for instillation of irrigating solution or medications into the stomach.
2. Confirmation of placement is mandatory prior to instillation of medications or fluids. See [Verification Section](#).
3. Do not use these tubes for delivering feeds due to the multiple side openings along the distal end. Providing feeds through this type of tube causes aspiration. Only use small-bore feeding tubes to provide feeds.
4. Obtain a provider order specifying oral or nasal route for insertion, reinsertion, and removal of a decompression drainage tube. Orally inserted tubes are preferred for neonates and infants because they are obligate nose breathers.
5. Other types of large bore NG/OG tubes used for decompression (i.e., Sengstaken-Blakemore and Minnesota tubes) are not included in this procedure.
6. RNs cannot insert/reinsert a decompression tube, in a patient with:
  - Esophageal varices
  - Esophageal or gastric bleeding, known gastric perforation
  - Nasal abnormalities
  - Recent nasal/facial trauma
  - Recent basal skull fracture
  - Recent surgical procedures such as:
    - Cleft lip or palate repair
    - Esophageal or gastric surgery
    - Alveolar bone graft
    - Pharyngoplasty
    - Nasal revision
    - Transphenoidal surgery
    - Midface advancement

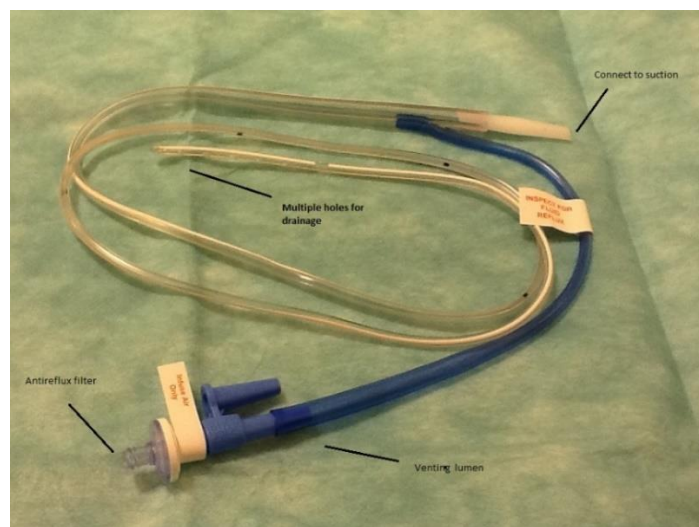
## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (*continued*)

7. A gastric decompression tube may be ordered to:
  - Improve ventilation by preventing gastric distention and decreasing pressure on the diaphragm
  - Decompress the bowel
  - Minimize postoperative nausea and/or eliminate vomiting
  - Decrease the risk of anastomotic leak after bowel surgery
  - Aspirate/lavage the stomach during gastric bleeding or drug overdose
  
8. Contact ordering provider if tube dislodged, is not draining, if patient develops abdominal distension or vomits with tube in place.

## Supplies

---

- Decompression tube of the appropriate size for the patient and as clinically indicated (see [supply list](#) for PMMs):
  - Neonate/Infant 6–10 French Replogle
  - Child 8-10 French
  - Teen 12-16 French
- 3M Cavilon No Sting Barrier Film
- Skin barrier Extra Thin Duoderm or Coloplast or NG strips (see supply list)
- 3M Medipore H tape or cloth adhesive tape (½ inch or narrower)
- Tegaderm
- Scissors
- pH strips (PMM 45345) – DO NOT use Gastrocult
- Clean gloves
- A cup of water and a straw for older children, when appropriate
- Pacifier for infants
- Permanent marker
- Suction, canister and tubing
- Water soluble lubricant



**NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (continued)**

Fig. 1

**Procedure**

---

**PREPARING FOR DECOMPRESSION TUBE INSERTION**

1. Obtain and review provider order.
2. Explain procedure to parents and child (as appropriate for age/condition). Contact Child Life for procedural support as appropriate.
3. Ensure patient is NPO 30 minutes prior to tube insertion, or re-insertion, to decrease likelihood of vomiting and aspiration.
4. Gather supplies.
5. Select nares for insertion (or mouth if appropriate).
  - As age appropriate, evaluate patency by occluding each nares.
  - If tube is being replaced, select opposite nares, if patent.
6. For nares placement apply Cavilon to upper lip and cheek of selected nares. Cut skin barrier and apply to patient's cheek. Prepare tape and cut Tegaderm to size.
7. For oral placement apply Cavilon to chin. Cut skin barrier and apply to patient's chin. Prepare tape and cut Tegaderm to size.
8. Position patient as appropriate.
  - Supine with head of bed elevated 30-45° as condition permits.
  - A small child or infant may need to be held for placement
9. Determine depth of tube insertion by the "Nose (or mouth)-Ear-Mid-Xiphoid-Umbilicus Span" method: measure from tip of nose (or mouth) to inferior attachment of ear or earlobe, to midpoint between the xiphoid process and umbilicus. Note centimeter (cm) marking at this point.

**DECOMPRESSION TUBE INSERTION**

1. For comfort and safety:
  - If developmentally appropriate, and not contraindicated, give child a cup of water with instructions to sip on straw and swallow during tube passage. Ask him/her to tip head forward to facilitate passage of tube. If appropriate, pre-arrange a signal (e.g., raising a hand) to indicate child feels s/he is about to gag or cough. You may pause advancing tube.
  - Infant may be consoled by non-nutritive sucking on a pacifier during insertion.
2. Prepare tube: lubricate end if inserting nasally.
3. To insert:
  - **Oral placement:** position end of tube downward and insert tube into oral cavity over the tongue. Aim tube back and down toward pharynx. When tube hits pharynx, flex head forward (must have mobile C-spine). If appropriate, ask child to take sips of water through a straw while tube is advanced to previously noted cm mark.

**NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (continued)**

- **Nasal placement:** Insert tube into patent nostril, aiming back and down. When tube hits pharynx, if child is able and has mobile C-spine, flex head forward and have the child swallow. Advance tube as child swallows to previously noted cm mark.
4. Auscultate air for audible swoosh over epigastric area. If no swoosh is heard, reposition decompression tube and listen again. This is done to rule out kink in tube and is not a placement verification method.
  5. If resistance is met consider one or more of the following actions:
    - Reposition the angle of insertion
    - Reposition patient's head
    - Use alternate nares
    - Use smaller diameter tube
  6. If patient experiences persistent respiratory distress or sudden onset of severe respiratory distress during or after insertion, immediately remove NG tube. **These signs and symptoms of distress may be subtle.**
  7. Secure tube to face and ensure tube is not placing pressure on any part of nares or corner of mouth if placed orally.
  8. For oral securement, apply skin barrier (Coloplast or Duoderm) square to corner of mouth, secure with clear dressing (Tegaderm).
  9. Documentation should include the following:
    - Time of decompression tube insertion
    - Insertion depth (cm marking at the nares or lip edge)
    - How the patient tolerated the procedure
    - Any problems associated with the insertion procedure
    - Method for placement verification
    - Clinician who placed decompression tube
    - Comfort measures used
  10. If tube placement is unsuccessful, notify ordering provider.

**INITIAL VERIFICATION FOR DECOMPRESSION USE ONLY**

1. Observe appearance of aspirate.
2. If aspirate is consistent with gastric contents (i.e., clear, tan, yellow or green color) place tube to suction.
3. If no aspirate obtained, contact provider for order for a chest/abdominal x-ray to verify placement.
4. If tube suspected in airway, notify provider and make plan for removal. Removal of a tube in the airway may result in pneumothorax and respiratory insufficiency.
5. After verification of correct placement, clearly identify exit point at nares with permanent marker. Exit point mark needs to be visible at all times.

**INITIAL VERIFICATION FOR INSTILLATION USE:**

1. X-ray verification is required for PICU & CICU patients.

**NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (continued)**

2. pH verification is required for all acute care and ICN patients.
3. For pH verification, obtain sample of aspirate for pH testing.
  - If pH results are 5 or less, tube is considered to be in stomach and can be used to instill any fluid or medication.
  - If pH results are greater than 5, obtain order for chest/abdominal x-ray to verify placement.
4. Following x-ray verification by a radiologist and pediatric attending, obtain order “OK to use NG tube” before instilling medication.
5. After verification of correct placement, clearly identify exit point at nares with permanent marker. Exit point mark needs to be visible at all times.
6. If tube suspected in airway, notify provider and make plan for removal. Removal of a tube in the airway may result in pneumothorax and respiratory insufficiency.

**ONGOING VERIFICATION**

1. Frequency – verify tube placement by confirming exit mark is visible at nares:
  - At beginning of each shift
  - Before instilling fluid, or medication
2. pH re-verification of placement is required when:
  - Mark is not visible at nares and tube must be pushed in or pulled out to return mark to the nares.
  - Patient has severe vomiting
3. Radiographic re-verification of placement is required:
  - pH is greater than 5
  - Patient’s condition changes acutely, even if mark is visible at nares. **These symptoms may include and be subtle:**
    - Coughing or cyanosis (aspiration is suspected)
    - Signs of acute respiratory distress
    - Any changes in patient’s color, behavior, cry or voice
    - Decreased oxygen saturation (only when monitored by pulse oximetry)
  - Following x-ray verification by a radiologist and pediatric attending, obtain order “OK to use NG tube” before instilling medication.

**MAINTENANCE**

1. Tube can be placed to drainage, per provider order, by: 1) gravity; 2) low continuous; or 3) low intermittent suction.
  - If setting suction control do not exceed: 60 mm Hg for neonates or 80 mm Hg for pediatric patients.
2. Ensure vent port remains above level of child’s stomach. Keep air vent lumen dry and free of fluid to ensure function.
  - Do NOT inject fluid through the anti-reflux filter.

## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (*continued*)

- Anti-reflux filter should be attached to end of vent lumen (unless provider orders filter removal).
- 3. Ensure it is adequately draining at a minimum every 4 hours and PRN. Failure to clear obstructions, maintain the air filled vent lumen, and a wet anti-reflux filter may cause gas and fluid accumulation in stomach.
- 4. Assess tape or anchor device on nose or mouth daily to ensure it is still well adhered to tube. Re-secure as needed.
- 5. Inspect condition of nares or lip/oral mucosa each shift and PRN. Report any skin irritation or damage and re-tape tube to relieve pressure.
- 6. If tube is attached to wall suction, measure output at end of shift or as frequently as ordered. Subtract irrigation or flush volumes from volume in canister when measuring content.
- 7. Capping NG/OG tube is necessary: after instillation; during patient transport and ambulation; when suction has been discontinued by provider
- 8. Cap tube by either:
  - Inserting transport plug on anti-reflux filter housing into main (suction) lumen
  - Using Lopez valve and turning stopcock off to patient.
- 9. Decompression tube can be placed to gravity drain by leaving flared end open and wrapped in disposable diaper.

## REMOVAL OF THE DECOMPRESSION TUBE

- Obtain and review provider order for tube removal.
- Inform patient and family of procedure.
- Turn off suction, if applicable.
- Remove tape and skin barrier using adhesive remover if necessary.
- Pull tube out of nose in a steady motion. If resistance is met, stop, secure tube, and notify provider.
- Documentation should include the following:
  - Tube removal
  - Any associated challenges/complication

## Troubleshooting

Problem	Suspected issue	Action
Leaking vent port	<ul style="list-style-type: none"> <li>• Reflux into vent lumen indicates an obstructed main lumen.</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigate vent lumen with air only to clear secretions.</li> <li>• If that does not stop leaking contact ordering provider.</li> </ul>
Little or no drainage	<ul style="list-style-type: none"> <li>• Clog</li> <li>• Kink</li> <li>• Suction malfunction</li> <li>• Wet anti-reflux filter</li> </ul>	<ul style="list-style-type: none"> <li>• Check suction apparatus for proper functioning and suction tubing for clogging.</li> <li>• Check tube for kinks.</li> <li>• Irrigate lumen with normal saline, or air, to check patency.</li> <li>• Replace anti-reflux filter</li> </ul>

## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (*continued*)

### References

Level of Evidence	Level*	Reference
	E3	DeWald, H. (2008). Decompression Tube: Insertion and Care. In J. T. Verger. AACN Procedure Manual for Pediatric Acute and Critical Care (pp. 815-821). St. Louis, Missouri: Saunders.
E4	Prabhakaran S. et al. (2013). Nasoenteric tube complications. Scandinavian Journal of Surgery, 102(3): 215.	

\* FAME Scale details: See nursing policy [Policy, Procedure, & Competency Development, Review, & Approval](#)

### Procedure History

Author: Barbara Bratton, RN, MS, PNP; Shelley Diane, RN, MS, CNS; Maura O'Day, RN, MS, C-PNP

Originated: 12/12

Resources: Lisa Tsang, RN, MN; Shelley Diane, RN, MS, CNS; Stephanie Mazely, RN

Reviewed: 2/14 Shelley Diane, RN, MS, CNS

Reviewed / Revised: 4/16 Shelley Diane, RN, MS, CNS  
9/19 Shelley Diane, MS, RN, CCNS  
1/22 Jeannie Chan RN, MS, CNS; Shelley Diane, RN, MS, CCNS

## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES *(continued)*

### Appendix A: Supplies with Ordering (PMM) Numbers

---

DECOMPRESSION TUBES:		
PMM #	French Size	Description
2107	6 Fr.	Argyle Replogle Suction Catheter 24" Length
2108	8 Fr.	Argyle Replogle Suction Catheter 24" Length
30894	10 Fr.	Argyle Replogle Suction Catheter 24" Length
2114	10 Fr.	BARD Nasogastric Sump Tube 36" Length
2113	12 Fr.	BARD Nasogastric Sump Tube 48" Length
2117	14 Fr.	BARD Nasogastric Sump Tube 48" Length
2110	16 Fr.	BARD Nasogastric Sump Tube 48" Length
39994		NG Strip, Adult
43673		NG Strip, Peds



## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (continued)

### Appendix B: Nares Tube Securement with Skin Barrier

---

**Cavilon Application #1**



**Skin Barrier Application #2**



**NG Tube Insertion #3**



**Tape Application #4**



**Pinch Tape Application #5**



**Completed Taping #6**



**Cavilon Over Tape #7**



**Film Dressing Application #8**



**Mark at Nare #9**



## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES (*continued*)

### Appendix C: Nares Tube Securement with NG Strips

---



**NG strip #1**



**NG strip small end to side of nose #2**



**Wrap wide end of NG strip around tube #3**



**Mark at Nare #4**

## NASOGASTRIC & OROGASTRIC DECOMPRESSION TUBES *(continued)*

### Appendix D: Replogle Bubble Trap Set-Up

## Replogle Bubble Trap Use a Kendall Argyle DeLee Mucus Trap



Cut the tip to allow a snug fit into the blue vent port of the Replogle

Pull this tube out until it is located just beneath the cap

- Cut tube
- Pull tube out
- Turn the tube upside down
- Re-insert to secure a tight fit
- Tube should be below the water line
- Water will bubble when suction working



Add water

- If bubbling stops, push
- 2-3 mL of air thru blue vent port
- **DO NOT ASPIRATE** through the blue vent port