

Please check all areas that apply:

- Meriter Hospital
- Meriter Outpatient Clinics (PM&R, etc...)
- Meriter Medical Group Clinics
- Department/Unit specific:
Newborn Intensive Care Unit

TITLE: Enteral Feeding Administration

EFFECTIVE DATE: April, 2014

APPROVED:


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Perinatal Services

I. POLICY STATEMENT

- A. To outline the procedure for inserting orogastric (OG)/nasogastric (NG) tubes. Infants who require a gastric tube to be placed for feeding will be assessed to determine whether an NG or OG tube best meets their physiologic, nutritional, and developmental needs. The goal of tube placement and management is to optimize the infant's feeding progress and success without compromising their pulmonary status.
- B. To outline care and maintenance of orogastric/nasogastric tubes
- C. To outline enteral feeding administration via orogastric/nasogastric tubes
- D. To outline assessment and guidelines surrounding feeding intolerance

II. IMPLEMENTATION

- A. OG/NG tube insertion and placement verification
 - 1. Gather supplies
 - a. Feeding tube
 - 1) <1000g, 4 or 5 Fr (4 Fr is better suited for very small preemies/ micropreemies or for patients transitioning to oral feeds)
 - 2) >1000g, 6.5 Fr or 8 Fr
 - 3) 16- or 20-inch feeding tubes are preferred over 36-inch feeding tubes in order to minimize the loss of nutrients in tubing.
 - b. Stethoscope
 - c. Syringe
 - d. Sterile water or water-soluble lubricant
 - e. Tape/transparent dressing
 - 2. Procedure
 - a. Wash hands, ID patient using two identifiers (i.e.: date of birth, MRN)
 - b. Don gloves
 - c. Position infant supine and swaddle, head of bed may be elevated
 - d. Determine depth of gastric placement by measuring from tip of nose for nasogastric or corner of the mouth for orogastric to earlobe and then from earlobe to midway between the xiphoid process and umbilicus. Insert tube to measured length.
 - e. Consider oral gavage tube placement for infant less than 1Kg and any infant on CPAP. Consider nasal placement for infants greater than 1Kg with mature gag reflex, and additionally breast or bottle feeding
 - f. Lubricate the distal tip of tube with sterile water, saliva, or water-soluble lubricant
 - g. Gently but steadily thread the tube through either the mouth or one of the nares (aiming posterior and parallel to nasal septum) to the previously identified mark. NEVER FORCE THE TUBE.
 - h. Confirm placement. Verify using auscultation or abdominal radiograph.

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| REVIEWED | | 1/2021 | | | | | | | |
| REVISED | 3/2018 | | | | | | | | |

- i. To verify using auscultation, inject small amount of air (1-2ml) into tube with syringe, while listening with stethoscope for rush of air into stomach. (Note: Air auscultation may be heard when tip of tube is in distal end of esophagus.)
 - j. Definitive verification of tube placement can be done with chest/abdominal radiographic imaging
 - k. Document initial centimeter (cm) marking upon tube insertion and confirm number prior to every feed.
 - l. Stabilize and secure tube with tape or transparent dressing. For patients with sensitive skin, apply hydrocolloid dressing prior to placing transparent film dressing.
3. Documentation
- a. Document insertion and length of the tube at the cm mark located at the mouth or nostril
 - b. Each time a tube is replaced "complete" the LDA for the old tube and initiate new LDA for new tube
- B. OG/NG tube care and maintenance
1. Remove polyurethane feeding tube and replace with new tube every 2 weeks or as needed per manufacturer guidelines. Measure placement depth with each insertion.
 2. Measure for growth every Sunday, and advance tube if needed for proper placement.
 3. Evaluate measurement if infant spitting or other there are other feeding tolerance concerns.
 4. Alternate nares when replacing NG tube
- C. Feeding solution preparation per Milk Tech
- Fortification may be utilized to meet calorie, protein, vitamin, and mineral needs of the premature or sick infant. Breast milk may be fortified with human milk fortifier, powdered/liquid formulas, and/or liquid protein fortifier per provider order. It is recommended that powdered infant formulas not be used for preterm or immunocompromised infants and that commercially sterile liquid formulas designed specifically for preterm infants be used if available.
1. Preparation of fortified milk can be done one feeding at a time or up to 24 hours in advance.
 2. If solution prepared in advance, or commercially sterile formula is opened, the feeding solution must be labeled and refrigerated. Refrigerated solutions are good for 24 hours.
In order to reduce potential contamination, disposable feeding supplies including bottles, syringes, tubing, and bags should not be reused except for specialty bottles. Bottles used to feed an infant should be discarded after that feeding, including any milk left in that bottle.
- a. Nurse verifies feeding solution
 - 1) Confirm feeding order in EHR
 - 2) Confirm ingredients and volumes are correct by verifying feeding label against what is ordered in EHR.
 - 3) Scan patient and bottle in Timeless Medical system prior to administering feeding to infant.
- D. Intermittent gavage feedings (Administering a prescribed volume of milk over a short period of time)
1. Indications for gavage feeding include:
 - a. Immature/uncoordinated suck, swallow, breathe feeding pattern
 - b. For premature or critically ill patients to reduce risk of aspiration and conserve energy
 - c. Respiratory distress/tachypnea
 - d. Inability to consume enteral feeding volumes orally
 2. Gather Supplies
 - a. Enteral syringe (choose appropriate size based on volume of feeding)
 - b. Enteral extension sets if using a feeding pump
 - c. Obtain a physician's order before using the feeding pump
 - d. Feeding solution
 - e. Stethoscope
 - f. Pacifier
 3. Feeding administration via orogastric/nasogastric tube
 - a. Perform gastrointestinal/abdominal assessment
 - b. Confirm placement prior to each feed
 - 1) Assure cm marking at mouth/nare is consistent to the measurement that was documented at initial tube placement

- 2) Auscultate over stomach while administering 1 ml of air through NG/OG tube
- c. Provide developmental support during feeding
 - 1) Hold infant during gavage feeding if physiologically stable
 - 2) Offer nonnutritive sucking with pacifier during feeding
- d. Attach syringe to feeding tube. Pour feeding solution into syringe and allow feeding to flow by gravity, push feeding, or use pump to infuse feeding per physician's order
- e. Warming feeding is not recommended for feedings run for 60 minutes or longer
- f. Avoid infusing feeding too rapidly allow feeding to be delivered over 10-20 minutes, (similar to duration of an oral feeding)
- g. Clear tube with minimal amount of air after complete volume of feeding is infused
- h. Inspect the end of tubing when disconnecting and clean as needed using sterile water and/or cleaning tool
- i. Venting of feeding tubes after feedings should be done after feeding has infused in order to prevent gaseous distention of abdomen. Venting of feeding tubes should be continuous on all infants on nasal CPAP, and high flow NC>2 L.

E. Continuous Gastric Feedings

Continuous gastric feedings may be used as an alternative to intermittent gavage feedings for some infants. The decision to initiate continuous gastric feedings and/or deliver feedings on a pump over a prescribed duration of time requires a provider order.

1. Gather Supplies

- a. Enteral feeding pump
- b. Enteral feeding tubing
- c. Syringe or bag
- d. Feeding Solution

2. Administration

- a. Check OG/NG placement as outlined above
- b. Fill syringe/bag with up to 4 hours of enteral feeding volume and prime feeding tubing with feeding solution
- c. Warming feeding is not recommended for continuous feedings.
- d. Label syringe/bag with date, time hung, and feeding solution
- e. Insert syringe or bag into pump and set pump at ordered hourly infusion rate
- f. Connect feeding tubing to OG/NG tube and begin infusion
- g. Continue to assess OG/NG tube placement hourly and document infusion rate in EHR
- h. Assess feeding tolerance every 3-4 hours.
- i. Change tubing syringe or bag every 3-4 hours
- j. Formulas containing probiotics should be fed by bolus administration; it is recommended that they not be fed by continuous infusion

F. Breast milk considerations

Do not overfill syringe more than necessary to ensure patient receives nearly all the breast milk in the syringe and tubing, including the fat. A method to accomplish clearing the tubing at the end of the feeding would be to fill the syringe with 2 ml of air behind the feeding solution considering feeding tubing volume of 1.8 ml.

G. Feeding Intolerance Assessment

1. Assessing feeding tolerance in the neonate requires continuous surveillance and assessment. Feeding intolerance can manifest itself in a constellation of signs and symptoms.
2. Notify a provider for the following signs and symptoms of feeding intolerance
 - a. Billious/bloody residual/emesis.
 - b. Residual exceeding one-half of feeding volume. (Avoid routine checking of gastric residual to prevent risk of damage to stomach lining).
 - c. Physical assessment findings including abdominal distention, increased abdominal girth, or abdominal tenderness
 - d. Blood in stools: occult or frank
 - e. Change in clinical status (i.e.: increase apnea/bradycardia, lethargy, irritability, temperature instability, etc...)

III. REFERENCE/RESOURCES

Merenstein and Gardner's Handbook of Neonatal Intensive Care 9th Edition, 2021.

IV. REVIEWED/APPROVED BY

NICU Nursing Practice

V. LINKS TO OTHER MERITER POLICIES/STANDARDS/PROTOCOLS/GUIDELINES