

**NATIONAL INSTITUTES OF HEALTH
WARREN GRANT MAGNUSON CLINICAL CENTER
NURSING DEPARTMENT**

Standard of Practice: Care of the Patient Receiving Enteral Nutrition

Essential Information

- Assessments, interventions, and documentation actions in this SOP apply to any type of feeding tube including nasoduodenal, oral duodenal, nasogastric, oral gastric, gastrostomy or jejunostomy tube placed endoscopically or surgically.
- The use of food dye in tube feedings is prohibited.
- Use the smallest bore catheter possible for tube feeding based on patient size to reduce the risk of aspiration. The recommended tube size for enteral feeding is 8Fr, 10Fr, or 12Fr (Adults), 6Fr to 10Fr (Peds). If a Salem sump tube is used strictly for feeding an order to change to a feeding tube should be obtained.
- The use of an Intravenous Pump to deliver enteral feeding is prohibited by FDA.

I. Assessment

1. Discuss need for nutrition and GI consults with multidisciplinary team prior to feeding. Discuss type of tube and delivery and concentration of feeding i.e. bolus vs. continuous. Bolus feeding is not recommended when feeding is delivered directly into small bowel.
2. Assess patient and family understanding of need for tube feeding and process.
3. Assess for allergies.
4. Absolute confirmation of tube placement is done via x-ray with a prescriber order prior to starting any feeding.
5. Verify prescriber order for formula type, rate of infusion, and amount to be infused and parameters for excessive residuals (see NIH Nutrition Support Handbook).
6. Verify correct tube placement using auscultation method and measurement of tube length
 - a. every shift during continuous feeding
 - b. prior to bolus feeding or medication administration
 - c. as needed for suspected or actual complications such as: nausea/vomiting, coughing, shortness of breath
7. Monitor for signs of aspiration hourly during continuous feeding (shortness of breath, change in auscultation of breath sounds, choking, and oral pocketing/residual) or constantly during bolus feeding.
8. Assess breath sounds q 4 hours during continuous feeding or before and after bolus feeding.
9. Assess the presence of residuals every 4 hours for continuous feeding and prior to the start of each bolus feeding, except small bowel tube. Discuss with prescriber holding tube feeding for at least 2 hours for residuals of >200 cc. Residuals should be evaluated in conjunction with other signs/symptoms of potential intolerance.

10. Assess bowel sounds at start of each bolus feeding or every 4 hours for continuous feeding.
11. Monitor skin turgor, moisture of mucous membranes, thirst, and skin integrity.
12. Assess for constipation, diarrhea, nausea, vomiting, flatulence, abdominal distention, and/or cramps every shift and when feeding is complete.
13. Assess insertion site for skin integrity and tension on the feeding tube q 8 hours.
14. Weigh patient daily at approximately the same time or weekly depending on patient status.
15. Monitor lab results as ordered by prescriber

II. Intervention

1. Insert nasal or oral feeding tubes: (If using small bowel feeding tube with guidewire, flush lumen with normal saline to ensure guidewire removal after placement)
 - a. Refer to procedure manual.
 - b. If tube has a guidewire then it must stay in place until after confirmation of placement.
 - c. Provide developmentally appropriate care to pediatric patients
2. Elevate head of bed at least 30 to 45 degrees or have patient sit up, unless contraindicated, during feeding and 1 hour after feeding complete. If patient can't bend at hips then place patient in reverse trendelenberg.
3. Verify that suction equipment is available and functioning.
4. Use only 60cc or larger syringes for feeding tubes. Do not use plunger when gravity method is used in pediatric patients.
5. Hang only 4 hours of tube feeding in bag at one time. Store remaining formula/feeding in refrigerator properly labeled with name and expiration date. Discard unused portion of canned feeding. Specially mixed feedings should be refrigerated and discarded after 24 hours.
6. Administering tube feeding at room temperature.
7. Administer at prescribed rate.
8. Preferred method of delivery for continuous feeding is by **feeding pump**. Gravity method is also acceptable. If administration is by gravity then mark container with time tape noting beginning, middle and endpoint of feeding.
9. Bag, tubing, and syringe are to be changed every 24 hours, label with date and time. Rinse equipment with water and let dry between feedings.
10. If patient has cuffed Endotracheal or Tracheostomy tube, inflate cuff during feeding, unless contraindicated (see SOP Care of Patient with a tracheostomy re: cuff pressure/management).
11. Provide oral care to patients every 4 to 8 hours.
12. Check patient tolerance of feeding, infusion rate and volume, and residuals every 4 hours. Residuals are not checked on small bowel tubes.
13. Pediatric patients from infancy to 18 months old should be offered a pacifier and be held during bolus feeding.
14. Administer 30cc bolus of tap water (unless contraindicated) at completion of feeding and/or every 4 to 8 hours to maintain patency of tube, even if tube is not being used for feeding. Consider sterile water flush if neutropenic or otherwise immunocompromised. Amount of bolus for pediatric patients less than 50kg is 10 cc.
15. When giving medications via tube:
 - a. check with pharmacy if medication can be delivered via tube (example: Phenytoin interacts with formula)
 - b. use liquid medication preparations when available
 - c. hold tube feeding pre and post administration of medication as needed
 - d. flush tube with 30-60cc of water pre and post administration of medication (volume for pediatric patients to be determined by prescriber)

- e. if fiber is prescribed then administer as a bolus diluted in water—do not add to tube feeding in bag. Flush with 30-60cc water (except pediatric patients) before and after administration.
- 16. If symptoms such as nausea, vomiting, diarrhea, abdominal distention, cramping, pallor, sweating, or changes in vital signs develop turn off feeding and immediately notify prescriber.
- 17. If constipation noted, notify prescriber for changes in water requirements, stool softeners, fiber, or changes in formula type.
- 19. Notify prescriber for absent or diminished bowel sounds.
- 20. If aspiration (as noted by symptoms below) is suspected, stop feeding and notify provider
- 21. Insertion sites
 - a. Remove dressing after first 24 hours post insertion of gastrostomy tube.
 - b. If excessive leakage at stomach insertion site then use softwick gauze applied loosely around site and change every 24 hours. Use tape sparingly, skin barrier is optional. Do not apply occlusive dressing.
 - c. Secure tube (e.g. chevron technique). Prevent tube from being pulled by securing in a pouch (PEG holder with belt) or clothing to prevent accidental dislodgment of tube.
 - d. Clean insertion site with mild soap/water and pat dry
 - e. Obtain enterstomal nurse consult if site care is a problem
 - f. If note redness, granulation, bleeding, purulent drainage, excoriation, compromised skin, tears or fissures notify provider.
 - g. Pad tubing with gauze around stomach insertion site whenever placing patient prone.
 - h. If tube is dislodged, call prescriber.
- 22. Patient discharge teaching includes:
 - a. how to administer tube feeding
 - b. care of equipment and supplies
 - c. symptoms to report to physician
 - d. what to do if can not take tube feeding or tube is dislodged
 - e. care of stoma (tube site)

III. Documentation

Document care provided at least every shift

Documentation to reflect:

1. Intake and Output
2. Tolerance of tube feeding
3. Breath and bowel sounds
4. Skin integrity and dressing care at site
5. Type of feeding tube
6. Verification of placement
7. Formula strength and amount
8. Delivery method
9. Flush amount and time

10. Patient teaching

IV. References

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Bowers, S.(2000). *All about tubes: your guide to enteral feeding devices*. Nursing 2000 (December, 2000).

Chima, C.S.(2001). *The safety of blue dye as a method for detection of pulmonary aspiration in hospitalized patients*. Clinical Nutrition Management, 20 (2) 1-5.

Adverse reaction from addition of food dye to enteral nutrition. (2000). Adverse Drug Reaction Bulletin, 5 (12).

Society of Gastroenterology Nursing and Associates. (1993). Gastroenterology Nursing, A Core Curriculum Mosby, St. Louis, MO

NIH, CC, Nursing Department Oral Care for the “at risk” research patient Standard of Practice, 11/99.

NIH, CC, Nursing Department Tracheostomy procedure

NIH, CC, Nutrition Support Handbook

Sentinel Event Alert. Joint Commission on Accreditation of Healthcare Organizations. Nov 30, 2000 issue 15

Association for the Advancement of Medical Instrumentation. New standard on enteral feeding set connectors and adapters. Dec. 11, 1996

V. Additional Educational Points

- Assess patient for candidacy for enteral feeding including: bowel function, advanced directive, social support, type of tube/delivery method, allergies to food, drugs, latex, or adhesive tape, obtain Nutrition and GI consult
- Labs to review include glucose, electrolytes, BUN, creatinine, transferrin, pre-albumin, total protein, cholesterol, triglycerides, liver enzymes, CBC.
- Insertion of NG tube can be more comfortable if nose is prepared with water soluble lubricant, topical decongestant and/or anesthetic spray or jelly.
- Administering cold tube feedings may cause abdominal pain and cramping.
- For pediatric patients less than 50 kg the amount of flush should be determined by size of tube and size of patient dictates size of tube.
- Infants may need a pacifier to maintain sucking strength.
- Residuals: can not be obtained from J-tubes, should be less than 2 hours of feeding for pediatric patients and twice hourly rate for adult patients, consider with multidisciplinary team decreasing volume and/or rate delivered, use of promobility agents, or continuous small bowel feeding if signs of intolerance or high residual volume.
- Hydration requirements: Adults require 1500ml/m²/day, Pediatrics depending on weight require 1500-1800ml/m²/day
- Some conditions that increase need for fluid are diarrhea, fever, large draining wounds
- Some conditions that decrease need for fluid are hepatic or renal failure, congestive heart failure, pulmonary edema
- Multidisciplinary team is to evaluate hydration status and prescribe additional fluids as needed.
- Symptoms of aspiration: productive or nonproductive cough, respiratory rate changes, choking, oxygen saturation changes, shortness of breath, wheezing/rhonchi/upper airway gurgling, fever, oral pocketing/residual
- Symptoms of dumping syndrome: nausea, weakness, vomiting, sweating, diarrhea, dizziness, bloating, shortness of breath

- Discharge Teaching may also include: flushing of tube with 30-60cc(Peds <50kg = 10cc) water twice a day even if not being used, type of formula, rinsing of tubing and bag at completion of feeding with water, method to check tube placement and residuals, need for daily oral care, method of tube feeding delivery including amount, rate, and duration of feeding, pump users must know settings, alarms, and trouble shooting, use of at least a 60cc syringe for bolus feeding, pediatric patients should use gravity method without plunger, flush with water before and after medications and after completion of feeding, maintain supply of adapters and replacement kits specific to patient's needs

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