

	Policies and Procedures Title: ENTERAL TUBE FEEDING: ADULT I.D. Number: 1020
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DEFINITIONS

Patient means a patient, client or resident who is receiving care in a SHR facility/affiliate, or is a participant in a SHR recognized program or service.

1. PURPOSE

- 1.1 To provide consistent best practice guidelines for management of patients receiving enteral feeding.
- 1.2 To minimize complications associated with enteral tube feeding.

2. POLICY

ALERT - Inadvertent **placement in** the trachea can lead to severe complications: pleural injury, pneumothorax, tracheobronchial aspiration, pneumonia, and death if fluids or other agents are infused (Walsh et al, 2016).

Most Responsible Physician (MRP) or designate: Written Order Required	<ul style="list-style-type: none"> • For X-ray to confirm tube placement prior to use. Requisition MUST indicate reason for X-ray (i.e. Chest x-ray for confirmation of gastric tube placement) • For use of tube after tube placement is verified by x-ray. The MRP or designate MUST confirm placement with the Attending Radiologist, Radiology Resident or credentialed non radiologist. The confirmation MUST be written into the practitioners orders stating "tube placement verified by x-ray and may be used". (do not use NG/OG tube until order is written) • To start or discontinue tube feeding • For formula type, volume and flow rate • For flush type and amount • Blood work as appropriate • For consultation to Dietician and/or Nutrition Support Services • To give medications via tube • Enteral Nutrition Order Set –Dietician (adult Inpatient’s)-Form #103942 • Initiation of Nasogastric (NG)Tube feeding Order Set - Physician (adult inpatient’s) Form # 103941
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<p>Consult</p>	<ul style="list-style-type: none"> • Dietitian • At RUH consult Nutrition Support Service (NSS)
<p>Types of tubes</p>	<p>Nurse Inserted tubes:</p> <ul style="list-style-type: none"> • Nasogastric • Orogastric <p>Practitioner placed tubes:</p> <ul style="list-style-type: none"> • Nasogastric small bore feeding tube with stylet • Nasoduodenal (ND) • Nasojejunal (NJ) <p>Surgically placed tubes:</p> <ul style="list-style-type: none"> • Gastrostomy • Jejunostomy <p>Endoscopically placed tubes:</p> <ul style="list-style-type: none"> • Percutaneous Endoscopic Gastrostomy (PEG) • Percutaneous Endoscopic Gastrostomy with jejunal extension (PEG-J) <p>Radiologically placed tubes</p> <ul style="list-style-type: none"> • Percutaneous Gastrostomy (PG) • Percutaneous Gastrojejunostomy (PGJ)
<p>Method of Administration</p>	<ul style="list-style-type: none"> • Continuous: feeding for 24 hours continuously either by gravity drip or feeding pump • Bolus: feeding is infused over a short time period at specified intervals (less than or equal to 15 minutes) • Intermittent: similar technique to that of bolus feeding, but it is infused over a longer duration (greater than or equal to 30-120 minutes) • Cyclic: continuous feeding over a specified period (e.g. 8–20 hours per day, i.e. night time feeds)) <p><i>Note: administration set must be labeled with patient's name, formula type, rate, and date.</i></p>
<p>Processing Orders</p>	<ul style="list-style-type: none"> • Total Enteral Nutrition (TEN) blood work will be initiated using Bloodwork Order Guidelines for TEN Monitoring form number 101095 • The following information will be entered into Sunrise Clinical Manager (SCM) <ul style="list-style-type: none"> - For continuous feeds enter formula type, and goal rate - For intermittent and bolus feeds enter frequency, formula type, and amounts required (e.g.# of cans) - If protein powder is ordered, enter number of packets needed/day - Also include patient's oral diet (e.g. NPO, Clear fluids) • Rural: follow unit based processes

<p>Special Considerations</p>	<ul style="list-style-type: none"> • Salem Sump tubes are designed for gastric decompression and may be used for feeding and medication administration on a short term basis only. Small bore feeding tubes are preferred for enteral feed administration. • Keep the head of the patient's bed elevated at least 30-45 degrees unless contraindicated (Reverse Trendelenburg may be used if patient unable to tolerate bending at the waist) • If the patient's head of bed must be lowered for a procedure, return to elevated position as soon as able. [Consider length of procedure, patient tolerance of feed, and tube type to ensure risk of aspiration is minimized] • Administer tube feed formula at room temperature. • Kangaroo feeding pump requires a distance of 45 cm (18 inches) between the feeding bag to the top of the pump. • Do not use a stopcock with enteral feeding tubes.
<p>Medication Administration</p>	<ul style="list-style-type: none"> • Pharmacy will be notified that an order to give medications through tube (include type of tube inserted) has been obtained and suspensions for medications will be supplied when possible. • When a liquid suspension is not available medications should be crushed and mixed with sterile water • All oral medication suspensions will be prepared in, delivered and administered in a labeled oral syringe. Oral medications will not be prepared in syringes usually used for injections. • Do not give any sublingual, enteric coated or sustained release medication through the feeding tube. • Contact Pharmacy for reconstitution of Hazardous medications as per policy: Hazardous Drugs (non-Chemo) Administration & Precautions #1044 • Medications will be given one at a time. [Mixing of medications increases the risks of physical and chemical incompatibilities, tube obstruction and altered therapeutic drug responses.] • Flush with 15mL sterile water before and after each medication • If the patient requires a fluid restriction, notify pharmacy (to concentrate medications) if applicable.
<p>Infection Control</p>	<ul style="list-style-type: none"> • Wipe top of formula can with alcohol swab before opening. • Cover, label (with patient name date and time opened) and refrigerate remaining formula and use within 24hrs. • Wash hands and wear non-sterile gloves when accessing formula and feeding tube. • Maintain clean technique when accessing. • Clean each enteral tubing connection with an alcohol swab when accessing. • Formula will be suspended for no longer than 4 hours if reconstituted or premixed by Dietary. Formula that is sterile (e.g. canned formula) may be hung for no longer than 8 hours. • Do not add new formula to that remaining in administration bag. Before adding new formula, rinse bag with sterile water. • Change administration sets and additional medication and any additional administration supplies every 24 hours. <p>Types of water to be used:</p> <ul style="list-style-type: none"> • Use sterile water in Acute Care for ALL patients of ALL age groups for ALL purposes (drug preparation/administration, reconstituting formula and water flushes). • Use sterile water (or boiled tap water (NOT from the bathroom) in the community setting or LTC for drug preparation and before and after

	<p>medication administration for ALL patients of ALL age groups.</p> <ul style="list-style-type: none"> • Use sterile water (or boiled tap water (NOT from the bathroom) in the community setting or LTC) for reconstituting formula or for water flushes in high risk groups of All ages (including immunocompromised, those critically ill, and ALL neonates/infants). • Use tap water (NOT from the bathroom) or bottled water for reconstituting formula or for water flushes in the home or clinic (or LTC) if municipal water is safe for All ages, EXCEPT immunocompromised, those critically ill, and ALL neonates/infants who will still need sterile water (or boiled tap water (NOT from the bathroom) in the community setting or LTC).
<p>Flushing of Feeding Tubes</p>	<p>All types (NG,OG, ND,NJ, PGJ, PEG, J-tube, Buttons) [Flushes are provided to maintain tube patency, before and after gastric residual volume checks, before and after medication administration, before and after intermittent and bolus feeds and when providing additional free water.](See Infection Control section for appropriate water type)</p> <ul style="list-style-type: none"> • Flush with a pause/push technique to decrease clogging of tube. • Use 60 mL syringe to avoid high pressures. • Flush with 30mLs water every 4 hours (continuous feed) to maintain patency of feeding tube unless otherwise ordered. • Flush with 30mLs water before and after each feed (intermittent) to maintain patency of feeding tube unless otherwise ordered. • Flush with 30mLs water before and after checking residuals to maintain patency of feeding tube unless otherwise ordered. • Flush with 15mL water before and after each medication • If the patient requires a fluid restriction, notify the dietitian (to review concentration of formula and/or decrease water flushes) and pharmacy (to concentrate medications). • Flush unused tube with 30 mLs water BID. • Regular flushing can be programmed into the Kangaroo pump.
<p>Confirm Correct placement of Feeding Tube</p>	<ul style="list-style-type: none"> • Complete order for x-ray to confirm initial NG tube placement. Requisition MUST indicate reason for X-ray i.e. 'Chest x-ray for confirmation of gastric tube placement' • Initial placement: MRP or designate MUST check placement by reviewing x-ray with Attending Radiologist, Radiologist Resident, or credentialed non radiologist. Order MUST be written into Practitioners orders stating "Tube placement verified by x-ray and may be used" • Assess for correct placement of feeding tube prior to each intermittent feed, medication administration and at least every 4 hours when patient is receiving a continuous feed. • See procedure for methods

Occlusion of Feeding Tube	<p>Note: if tube occlusion occurs do not force irrigation.</p> <ul style="list-style-type: none"> Do not use carbonated beverages to attempt to clear occlusion Attempt to irrigate with 50mLs warm sterile water using a gentle back and forth motion. If above is unsuccessful, obtain order for pancreatic enzyme mixture: Recommended mixture: 1 tab of Pancrelipase (Cotazyme or Viokase-8) and 1 tab of sodium bicarbonate (325mg) with 5-10 mLs sterile water. (Note: for safety reasons wear gown and mask when preparing and administering this mixture) Infuse gently into feeding tube and leave for 5 minutes. Attempt to irrigate with warm sterile water. If still occluded repeat pancreatic enzyme and sodium bicarbonate solution as above. Attempt to flush. Notify practitioner if occlusion persists.
Insertion Site Care	<p>PG, PGJ, PEG, J- tube, Button</p> <ul style="list-style-type: none"> Follow post insertion orders. Check security of PGJ/PEG anchoring device frequently to prevent dislodging. Observe & assess PG, PGJ/PEG/Button insertion site every shift – assess skin condition, notify Practitioner of redness greater than 1 cm, swelling, drainage or leaking of gastric contents or tube feed. Clean insertion site q12 hours and prn with saline. Apply gauze dressing if required (change dressing prn). Rotate Buttons and PEG 360 degrees once daily. Button should turn freely. For PEG-Avoid a dressing if possible. If there is drainage or the bolster is 'digging' into the skin in one area the thickness of the dressing should be limited to one layer of a drain dressing. Excessive layers of dressing under the bolster can result in the internal bolster eroding into the stomach wall. The PEG should also be secured to the abdominal wall rather than left to 'hang' freely. If the tube is not secured the entry point into the skin will begin to enlarge/stretch increasing the potential for drainage at the site of entry. <p>NG, OG, Small Bore NG</p> <ul style="list-style-type: none"> Observe skin at nares, lips and oral mucosa for any redness or breakdown every shift. Alternate nares with re-insertion of nasal tube if possible.
Discharge Requirements	<ul style="list-style-type: none"> Require Home Care Dietician Consult Practitioner Order for tube feed product and site care Practitioner Order for Recommended mixture for occluded feeding tube: 1 tab of Pancrelipase (Cotazyme or Viokase-8) and 1 tab of sodium bicarbonate (325mg) with 5-10 mLs sterile water.

3. PROCEDURE

- 3.1 **Methods to check feeding tube placement: X-ray will be ordered to confirm initial tube placement prior to use.** (you may also refer to Clinical Nursing Skills & Techniques –8th Edition pages 782-785).

Note: Initial placement of feeding tube cannot be **verified by any other method. Obtain an order for an x-ray to confirm placement.**

Note: Using insertion of air as a method to check for placement is no longer used.

3.1.1 Nasogastric (NG) or Orogastric(OG) Tubes:

- 3.1.1.1 Check external length of feeding tube (tube must be marked with permanent marker or tape at insertion site) and compare to length documented on nursing care plan.
- 3.1.1.2 Aspirate and visualize gastric contents. Gastric aspirates often grassy green or colorless with sediment. Intestinal aspirates often yellow or bile stained and either clear or cloudy.
- 3.1.1.3 Test pH of gastric contents (pH of 5.5 or below indicates correct placement in most patients).

Note: *patients taking acid reducing drugs (e.g. Pantoprazole, Ranitidine) may have an altered pH. PH testing is of minimal value for continuous feeds.*

- 3.1.1.4 See pH testing procedure pg. 782-785 Clinical Nursing Skills & Techniques –8th Edition. SHR ordering of PH testing strips :SKU # 204370
- 3.1.1.5 Assess patient for signs & symptoms of inadvertent respiratory migration of tube: coughing, choking or cyanosis.
- 3.1.1.6 Assess for coiling of tube in back of throat with a flashlight and tongue depressor.

3.1.2 Small Bore Feeding Tubes

- 3.1.2.1 Confirm correct placement by measuring external length of tube and compare to length documented in nursing care plan.
- 3.1.2.2 Small bore soft lumen tubes should be carefully assessed in unconscious or disoriented patients since it is difficult to aspirate stomach contents to confirm placement.
- 3.1.2.3 Assess for coiling of tube in back of throat with a flashlight and tongue depressor.

3.1.3 Gastrostomy Tubes (PG,PEG)

- 3.1.3.1 Confirm correct placement by ensuring gastrostomy flange is flush to the skin.
- 3.1.3.2 PEG: compare the level of which the flange is placed (cm markings on the tubing) to that recorded in the nursing care plan at the time of PEG insertion
- 3.1.3.3 PG: check for discoloration of the tube shaft; this indicates that the tube may have been pulled out. Tubing that has been exposed to gastric contents will be brown in color in comparison to the usual cream color of the tube. If the discoloration measures less than 7.5 cm (3 inches) in length an x-ray should be done to confirm placement. If discoloration of the tube measures greater than 7.5 cm (3 inches), consult interventional radiology for a tube check. Hold feed until placement is confirmed

3.1.4 Jejunostomy (Surgical J-tubes, PGJ)

- 3.1.4.1 Confirm correct placement by measuring external length of tube and compare to length documented in the nursing care plan.
- 3.1.4.2 Check for discoloration of the tube shaft. Tubing that has been exposed to gastric contents will be brown in color in comparison to the usual cream color of the tube. If the discoloration is less than 7.5 cm (3 inches)in length and x-ray should be done to confirm placement. If discoloration of the tube is greater than 7.5 cm (3 inches), consult interventional radiology for a tube check. Hold feed until placement is confirmed

3.1.5 Button feeding tubes:

- 3.1.5.1 Check balloon volume per unit specific protocol and /or manufacturers recommendations.

3.2 **Administering Tube Feedings:** Refer to Clinical Nursing Skills & Techniques –8th Edition pages 788-792.

3.3 **Administering Medication through a Feeding Tube:** pages Clinical Nursing Skills & Techniques –8th Edition pages 500-504.

3.3.1 Contact Pharmacy for best dosage form for type of tube.

3.4 Displaced Tubes

3.4.1 Nasogastric (NG) or Orogastic (OG):

3.4.1.1 Notify practitioner

3.4.1.2 Reinsert if ordered

3.4.1.3 X-ray for gastric tube placement will be done and MRP or designate MUST confirm placement with the Attending Radiologist, Radiology Resident or credentialed non radiologist prior to use. Order must be written by MRP or designated physician that “tube placement verified by x-ray and may be used”

3.4.2 Small Bore Feeding Tubes:

3.4.2.1 Notify practitioner

3.4.2.2 Obtain order for X-ray for tube placement check. MRP or designate MUST confirm placement with Attending Radiologist, Radiology Resident or credentialed non radiologist. The confirmation order MUST be written into the practitioners orders stating “tube placement verified by X-ray and may be used”

3.4.3 Gastrostomy (PEG/PG)/Jejunostomy (PGJ):

3.4.3.1 For PG and PGJ notify practitioner or NSS at RUH. Radiology will need to be consulted for tube reinsertion. It is recommended that Radiology is notified as soon as possible.

3.4.3.2 For PEG consult NSS (at RUH) or Surgeon (at SPH) for reinsertion.

3.4.3.3 Cover site with a sterile dressing.

3.4.3.4 Practitioner may consider insertion of a Foley catheter to maintain a tract for a short period of time. An individualized care plan for the patient must be developed and all other options considered prior to use of a Foley Catheter as a replacement device. Foley is Not intended for feeding

Note: See **Appendix A** for Considerations/cautions

3.4.4 Button Feeding tubes:

3.4.4.1 Notify practitioner if the button is not useable because of a broken balloon

3.5 Assessing Tolerance of Tube Feed

3.5.1 Nasogastric(NG) or Orogastic(OG) Feeding Tubes

3.5.1.1 Check gastric residual volumes every 4hrs X 48hrs post initiation of new continuous feed.

3.5.1.2 If the residual is less than or equal to 350mL, refeed the aspirated volume and continue feeding as before.

3.5.1.3 If the residual is greater than or equal to 350mLs, refeed 350mLs, discard remaining aspirated volume, and hold feed x 4 hours. Restart the feed at 10mL/hr and increase by 10mL/hr q1h back to the previous tolerated rate.

3.5.1.4 If the residual is greater than or equal to 350mLs a second time, refeed 350mLs, discard remaining aspirated volume, and hold feed x 6 hours.

Consider a promotility agent in adult patients. Re-check residuals after 6 hours and if less than 350mLs, restart feed as above.

3.5.1.5 If intolerance (residual greater than or equal to 350mLs) occurs a third time, consider a small bowel feeding tube. At RUH, consult the NSS.

3.5.1.6 For established gastric feeds (greater than 48 hours), check residual when patient exhibits signs of gastric intolerance (abdominal distension, nausea, and vomiting). Diarrhea could indicate formula is being administered too rapidly.

3.5.1.7 Critically ill patients require continuous monitoring of gastric residual volumes q4h.

3.5.2 Nasoduodenal (ND), Nasojejunal (NJ), Jejunostomy (J-tube) and Percutaneous Gastro-jejunoscopy (PGJ) Feeding Tubes:

3.5.2.1 Do not aspirate as cannot obtain gastric residuals, instead check patient for abdominal distension

3.5.3 Buttons:

3.5.3.1 Do not aspirate, check patient for abdominal distension and vent tube prn.

3.6 Documentation

- Document type of feeding tube being utilized
- Document initial external length of feeding tube in nursing care plan.
- If feeding tube requires rotation document time and date rotated.
- Record formula type, hourly intake, flush volume, aspirate volume
- Symptoms of feeding intolerance: vomiting, diarrhea, abdominal distension and/or pain, large residual volume.
- Document insertion site assessment and care.
- Document feeding system changes.

4. REFERENCES

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Database:Nursing Reference Center Plus. Retrieved January 19, 2017

Appendix A

Considerations/cautions if using a Foley Catheter for a purpose other than the labelled use

1. Can feeding tube be replaced within 1-2 hours? If reinsertion of a feeding tube can be done then it may not be necessary to maintain the tract with an alternate tube.
2. Potential complications when a Foley is used off label :
 - a. Enteral misconnection – an inadvertent connection between an enteral feeding system and a non-enteral system, such as an intravenous line, peritoneal dialysis catheter that can result in life-threatening events in the clinical area
 - b. Risk of misplacement due to wide variation in length of tube required, due to individual anatomy
 - c. Inward migration of the Foley that can cause a pyloric or small bowel obstruction
 - d. Pancreatitis due to migration of the Foley catheter into the duodenum resulting in obstruction of the pancreatic and biliary tract.
 - e. Peritonitis due to gastric content and enteral formula leaking into peritoneum when temporary tube is not the correct length or Fr. Size.
3. Feeding the patient through the Foley catheter is risky because verification of placement may be difficult
4. As soon as possible arrangements should be made for the appropriate feeding tube to be placed.

Note: For clients with frequent dislodgements, consideration should be given to replacement of tube with one that can be safely replaced by certified nurses at the bedside