Regina Qu'Appelle HEALTH REGION

HEALTH SERVICES	**CODE**: **T.5**
NURSING PROCEDURE	**TITLE: TUBE FEEDING** **A. Nasogastric (N/G)** **B. Percutaneous Gastrostomy (PEG)** **C. Percutaneous Jejunostomy (PEJ) & Percutaneous Gastrojejunostomy (PEG-J)** **D. Occlusions** **E. Medications** **F. Site Care** **G. Dislodgement**
	CATEGORY: RN – General **LPN – General** **RPN – General**

PURPOSE

- Method of feeding indicated for clients with disease or injury that may be unable to ingest a sufficient amount of food orally.

NURSING ALERT:

- A PEG, PEJ or PEG-J tube is considered mature when it is well healed and six weeks post insertion.
- **Reinsertion of a balloon type gtube is an SNP – refer to nursing procedure T.5.1.**
- PEG, J-tubes are to be reinserted by physician only.
- Weighted nasal feeding tubes/guide wire feeding tubes are inserted by a physician. Placement must be checked by x-ray before guide wire is removed. **DO NOT RE-INSERT GUIDEWIRE UNDER ANY CIRCUMSTANCES.**
- Gastrostomy and jejunostomy tubes are recommended for long term use.
- Feeding regimes are ordered by physician in consultation with dietitian. (See Adult Enteral Tube and Feeding form RQHR #132 or PP-390 for Adult ICU Feeding Protocol).
- Weigh client prior to initiation of new feed, then weekly or as ordered by physician. **PEDIATRICS**: Weigh client daily.
- Ensure head of bed is elevated a minimum of 30° - 45° during feed and one hour following feed. **PEDIATRICS:** Elevate head a minimum of 30-45 minutes during and following feed. If unable to maintain head elevation, place in right side lying position, or place in infant lounge chair.
- Bolus feeds by syringe barrel without the plunger should be infused over a minimum of 10 minutes and **should not be forced.**
- Intermittent feeds by gravity bag should be infused over a minimum of 30 minutes.
- Feeds can be given via syringe using gravity over 10-15 minutes, but should be done with gravity. Plunger is only used for flushing.
- Sterile water should be used for flushing of tubes in acute care settings.
- Tap water may be used in long term and home settings.

NURSING ALERT: (Continued)

- Feeding tubes must be flushed with a minimum of 25 mL water when feed is commenced, interrupted, completed, before and after medications or residuals, or q4h when feeds are continuous.
  PEDIATRICS: Flush q4-6h with 5-10 mL of water. (Smaller amounts of fluid may be necessary for fluid restricted clients.)
- It is acceptable to pre-program and administer a scheduled H_2O flush of 25 mL or less on the pump. If a larger volume of H_2O flush is ordered, it must be given using the "flush now" option on the pump or a manual flush.
- Following each intermittent feed: flush bag and tubing with water.
- When patients are on the Adult ICU Feeding Protocol pp-390, nurses are to follow the gastric feeding flow chart on page 2 of pp-390 for residual instructions, do not follow residual instructions within this procedure.
- Change tubing, solution bags and syringe every 24 hours in acute care setting and change a minimum of once weekly in long term or home setting.
- Enteral formula must not hang at room temperature for more than 6 hours. Open cans must be labelled, covered, refrigerated and used within 24 hours. Warm to room temperature prior to feeding.
- Closed systems, where the bottle of formula attaches directly to the pump tubing, may hang according to manufacturer recommended instructions.
- Do not add new formula to bag with formula currently infusing.
- Do not add medication directly to enteral feed.
- Mouth care and stimulation appropriate for clients must be done q2-4 h while awake.
- Oral stimulation (e.g. pacifier) is critical for pediatric clients; consult occupational therapy or speech language pathologist as required.
- For discharge instructions consult dietitian.

A. Nasogastric (N/G)

EQUIPMENT

1. Personal protective equipment (PPE)
2. Enteral infusion pump (optional for intermittent feeds)

   NOTE: Pediatrics – Enteral feeding pump/infusion pump must be used for acute care pediatric clients on continuous feeds.

3. Tubing and bag
4. 60 mL luer tip syringe (i.e. catheter tip)

   NOTE: 12 mL syringe for pediatrics.

5. Stethoscope
6. Water/sterile water
7. Enteral formula as ordered

PROCEDURE

1. Check physician's order for type, amount and rate of feeding.

2. Wash hands thoroughly.

3. Don PPE.

4. Confirm correct placement of N/G, q shift, prior to medication administration, prior to each bolus feed and PRN based on client assessment by **two or more** of the following:
   - 4.1 Aspirate for stomach contents (re-instill).
   - 4.2 Test gastric aspirate pH level. A pH level $\leq$ 4 is expected with correct placement.
   - 4.3 Inject 20-30 mL of air for an ADULT, 5-10 mL for PEDIATRIC client and auscultate with stethoscope over stomach area for whoosh sound.

   NOTE: Clients who are taking acid reducing drugs may have an altered pH.

   NOTE: Ausculatory method is least reliable in accurately determining correct placement of tubes.

5. Check residual amount:
   - 5.1 Measure and document gastric residuals q4h until goal volume tolerated for 24 hours post initiation of new feeds or when rate or volume orders are changed. **PEDIATRICS**: Measure and document gastric residuals q4h X 48 hours initially. When 48 hours passes with minimum residuals, check the residual volume q8h for 5 days while in hospital, then prn, unless otherwise ordered.
   - 5.2 Check residual PRN and when client exhibits signs of gastric intolerance for mature NG feeds.

   NOTE: Signs of intolerance include, but are not limited to: increased abdominal girth/abdominal distension, nausea, vomiting, reflux and for pediatrics increased irritability.

   NOTE: Residuals should not be done for soft, weighted, small bore feeding tubes, i.e. #8 Dobhoff® and Keofeed® may collapse or plug when aspirated.

   Monitor for signs of feeding intolerance, i.e. abdominal cramping, distension or diarrhea.

   NOTE: All water flushes through a small bore feeding tube must be done manually with a vigorous push pause technique creating a turbulent flow.

NOTE: Adults (Intermittent feeds):

- If residual is <250 mL, re-instill and continue with scheduled feeding.
- If residual is > 250 mL, do not re-instill. Hold feeds and re-check in 1 hour. If residual is still > 250 mL, do not re-instill. Notify physician and dietitian.

Adults (Continuous feeds):

- If residual is <250 mL, continue feeding if no other signs of intolerance.
- If residual is >250 mL, re-instill to a maximum of 400 mL and continue feeding.
- Repeat residual in 2 hours.
- If the second residual is <250 mL, continue feeding.
- If the second residual is >250 mL, do not re-instill. Hold feeds. Notify physician and dietitian.

NOTE: Adults on Adult ICU Feeding Protocol pp-390

- Nurses are to follow gastric feeding flow chart on page 2 of pp-360 for residual instructions, do not follow residual instructions with this procedure.

Pediatrics (Intermittent feeds):

- For residuals less than ½ volume of previous feed, re-instill residual.
- If residual volume is ½ volume of previous feed or greater, notify physician or dietitian**.**

NOTE: Do not discard residual unless directed by physician.

Pediatrics (Continuous feeds):

- For residuals that are <2 times the hourly infusion rate, re-instill residual.
- If residual volume is >2 times the hourly infusion rate, notify physician or dietitian.

NOTE: Do not discard residual unless directed by physician.

6. Flush with a minimum of 25 mL of water q4h. **PEDIATRICS:** Flush q4-6h with 5-10 mL of water.

   NOTE: Flushing with a vigorous push pause technique before and after residuals is imperative as gastric acids will bind with protein in formula and may clog tube.

7. Set up equipment according to manufacturer's instructions.

8. Prime tubing with enteral formula.

9. Connect to adapter.

10. Administer feed via gravity or pump at prescribed rate.

11. Flush with water volume as ordered, using vigorous push pause technique.

12. Document feed hung and flush amount.

B. Percutaneous Gastrostomy (PEG)

EQUIPMENT

1. PPE
2. Enteral infusion pump (optional for intermittent feeds)

   NOTE: Pediatrics – Enteral feeding pump/infusion pump must be used for acute care pediatric clients on continuous feeds.

3. Tubing and bag
4. 60 mL luer tip syringe (i.e. catheter tip)

   NOTE: 12 mL syringe for pediatrics.

5. Water/sterile water
6. Enteral formula as ordered

PROCEDURE

1. Check physician's order for type, amount and rate of feeding.

   NOTE: Feeds can be given via syringe using gravity over 10-15 minutes, but should NOT be done with gravity using plunger. Plunger is only used for flushing.

2. Wash hands thoroughly.

3. Don PPE.

4. Confirm correct placement by observing length of PEG/MIC and compare to length documented in care plan.

5. Check residual amount:
   - Measure and document gastric residuals q4h until goal volume tolerated for 24 hours post initiation of new feeds or when rate or volume orders are changed. **PEDIATRICS:** Measure and document gastric residuals q4h X 48 hours initially. When 48 hours pass with minimal residuals, check residual volume q8h for 5 days while in hospital then PRN.

   - Check residual PRN and when client exhibits signs of gastric intolerance, **for mature gastrostomy feeds.**

NOTE: Signs of intolerance include, but are not limited to: increased abdominal girth/abdominal distension, nausea, vomiting, reflux and for pediatrics, increased irritability.

NOTE: Adults (Intermittent feeds):

- If residual is <250 mL, re-instill and continue with scheduled feeding.
- If residual is > 250 mL, do not re-instill. Hold feeds and re-check in 1 hour. If residual is still > 250 mL, do not re-instill. Notify physician and dietitian.

Adults (Continuous feeds):

- If residual is <250 mL, continue feeding if no other signs of intolerance.
- If residual is >250 mL, re-instill to a maximum of 400 mL and continue feeding.
- Repeat residual in 2 hours.
- If second residual is <250 mL, continue feeding.
- If second residual is >250 mL, do not re-instill. Hold feeds. Notify physician and dietitian.

NOTE: Adults on Adult ICU Feeding Protocol pp-390:

- Nurses are to follow gastric feeding flow chart on page 2 of pp-360 for residual instructions, do not follow residual instructions with this procedure.

Pediatrics (Intermittent feeds):

- For residuals less than ½ volume of previous feed, re-instill residual.
- If residual volume is ½ volume of previous feed or greater, notify physician or dietitian.

NOTE: Do not discard residual unless directed by physician.

Pediatrics (Continuous feeds):

- For residuals that are <2 times the hourly infusion rate, re-instill residual.
- If residual volume is >2 times the hourly infusion rate, notify physician or dietitian.

NOTE: Do not discard residual unless directed by physician.

6. Flush using vigorous push pause technique with a minimum of 25 mL of water. **PEDIATRICS:** Flush with 5-10 mL of water.

NOTE: Flushing before and after checking residuals is imperative as gastric acids will bind with protein in formula and may clog tube.

NOTE: For PEG/MIC's not regularly used in adults, flush with 10 mL EOD. For PEG/MIC's not regularly used in pediatrics, flush with 10 mL OD.

7. Set up equipment according to manufacturer's instructions.

8. Prime tubing with enteral formula.

9. Connect to adapter.

10. Administer feed via gravity or pump at prescribed rate.

11. Flush using vigorous push pause technique.

12. Document feed hung and flush amount.

13. Document in care plan:
    - Insertion date.
    - Size, length and number of gtube.

C. Percutaneous Jejunostomy (PEJ) & Percutaneous Gastrojejunostomy (PEG-J)

NURSING ALERT

- Jejunostomy tube may be inserted endoscopically directly into jejunum (PEJ) or via stomach (PEG-J), or during intra-abdominal surgery.
- Jejunostomy feedings must be administered by continuous infusion using an infusion pump to prevent dumping syndrome.
- Monitor for abdominal cramping, distention or diarrhea.
- Residuals should not be done.
- Do not connect to suction.
- Do not rotate bolster.

EQUIPMENT

1. PPE
2. Enteral infusion pump
3. Tubing and bag
4. 60 mL luer tip syringe (i.e. catheter tip)

   NOTE: 12 mL syringe for pediatrics.

5. Water/sterile water
6. Enteral formula as ordered

PROCEDURE

1. Check physician's order for type, amount and rate of feeding.

2. Wash hands thoroughly.

3. Don PPE.

4. Set up infusion pump.

5. Connect pump tubing to jejunostomy tube.

6. Administer feed via pump at prescribed rate.

   NOTE: Feeding tube must be flushed SLOWLY (using push pause technique) with 25 mL of water when feed is commenced, interrupted, completed, before and after medications and q4h during continuous feeds. PEDIATRICS: Flush q4-6h with 5-10 mL of water.

D. Occlusions

NURSING ALERT:

- If tube occlusion occurs **do not** force irrigation.

EQUIPMENT

1. PPE
2. Water/sterile water
3. 35 mL luer tip syringe (or larger) (i.e. catheter tip)

   NOTE: A smaller syringe may rupture feeding tube

4. Ordered medication

PROCEDURE

1. Wash hands.

2. Don PPE.

3. Attach empty syringe to feeding tube and gently pull back on plunger.

4. Attempt to irrigate feeding tube with 50 mL warm water using a gentle back and forth motion. **PEDIATRICS**: 10-20 mL of warm water.

5. Obtain physician's order for a pancreatic enzyme mixture if above unsuccessful.

6. Mix pancreatic enzymes in medication cup with 50 mL of water until dissolved.

7. Draw dissolved pancreatic enzymes up into luer tip syringe (catheter tip).

   NOTE: Recommended adult mixture: 1 pancrealipase capsule (Cotazym®) and Sodium bicarbonate (500 mg tab).

8. Infuse dissolved pancreatic enzymes gently into feeding tube and leave in 5 minutes.

9. Attempt to irrigate feeding tube again, as in step 4.

10. Repeat steps 5 and 6 if occlusion persists.

11. Notify physician if tube occlusion persists.

12. Document.

E. Medications

NURSING ALERT:

- Use medications in liquid form whenever possible.
- If pills or capsules must be used, crush to a fine powder and dissolve in warm water prior to administering.
- **DO NOT crush extended release, enteric coated and sublingual or buccal forms of medication (see Nursing Pharmacy Manual).**
- **Contact pharmacy for additional medication concerns.**
- Most liquid medications may be diluted with water before administration to minimize development of diarrhea and gastric irritation.
- Some medications will be rendered inactive when administered in conjunction with enteral feeding. See Appendix 1.
- Consult dietitian for adjustment of feeding regimes PRN.

PROCEDURE

1. Flush feeding tube using vigorous push pause technique with 25 mL water **before** medication administration. **PEDIATRICS**: Flush with 5-10 mL of water.

2. Administer dissolve diluted medication via syringe into feeding tube/medication port.

3. Flush feeding tube using vigorous push pause technique with 25 mL water following **EACH** medication administration. **PEDIATRICS:** Flush with 5-10 mL of water.

4. Document.

F. Site Care

EQUIPMENT

1. PPE
2. Soap and water
3. Normal saline (N/S) or Sterile Water (S/W)
4. Sterile gauze
5. Luer tip 6 mL syringe (i.e. catheter tip)

PROCEDURE

1. Wash hands.

2. Don PPE.

3. Inspect skin surrounding tubing for signs of skin breakdown or infection.

   NOTE: Applying antacids (i.e. Maalox) around the insertion site will help to protect the skin.

4. Cleanse site at least daily with soap and water.

   NOTE: Avoid harsh cleansing solutions (i.e. povidone iodine, alcohol and hydrogen peroxide).

   NOTE: Rinse soap off well to prevent fungal infections.

5. Dry well (sterile gauze may be used).

6. Apply dressing to site PRN. **DO NOT** tape or dress well healed stoma.

7. Rotate **mature gastrostomy tube** or bolster one quarter turn daily to prevent irritation and pressure ulcers.

NURSING ALERT:

- Do not rotate jejunostomy tube.
- Do not check balloon inflation on jejunostomy tubes.

8. Check balloon inflation once per week on **mature** gastrostomy tubes that have a balloon with a luer tip syringe.
   - 8.1 Check care plan and/or gastrostomy tube for appropriate inflation amount.
   - 8.2 Deflate balloon using a syringe and discard fluid.
   - 8.3 Re-inflate with appropriate amount of sterile H_2O.
   - 8.4 Document.

NOTE: For pediatrics: Check with physician or family regarding appropriate balloon inflation volume as it may be less than recommended amount.

G. Dislodgement

NURSING ALERT:

- The guidelines below are only applicable if gtube stoma is **more** than 6 weeks old.
- If less than 6 weeks old, cover insertion site with gauze and contact surgeon/physician for reinsertion.
- Insert same size or smaller foley catheter until a balloon type gtube can be inserted by certified RN or physician.

EQUIPMENT

1. PPE
2. Foley catheter (same size or smaller than gtube)
3. Luer tip syringe (i.e. catheter tip)
4. Sterile water for insertion into balloon
5. Water soluble lubricant
6. Tape

PROCEDURE

1. Perform hand hygiene.

2. Don PPE.

3. Check balloon on foley catheter.

4. Lubricate foley catheter tip.

5. Insert foley catheter into open stoma.

   NOTE: The catheter should be inserted to approximately depth of previously inserted tube.

6. Inject sterile water into foley catheter balloon.

   NOTE: DO NOT use until placement confirmed.

   NOTE: Pediatric patients should never have more than 5 mL inserted into balloon unless previously noted by family.

7. Confirm correct placement of foley catheter by following:
   7.1 Aspirate for stomach contents and re-instill.
   7.2 Test pH level.

   NOTE: A pH level < 4 is expected with correct placement.

8. Call physician.

   NOTE: If unable to confirm placement by these methods, do not use foley.

   NOTE: An x-ray will be ordered to check placement.

REFERENCES

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Approved by:
Date:

APPENDIX 1a

Adult Administration of Drugs via Enteral Tubes

1. Verify tube placement.
2. Do not add drug directly to enteral feed.
3. Whenever possible, use liquid dosage forms.
4. Flush feeding tube with 25 mL sterile water prior to administration.
5. Give each medication separately via the feeding tube and flush with 25 mL sterile water between medications.
6. Flush feeding tube with 25 mL sterile water to clear residual medication.
7. The amount of water used should be documented on input and output sheets and enteral feeding resumed.

Table 1: List of medications that require tube feeds to be held 2 hours pre and 2 hours post dose for adult clients.

Medication	Drug Preparation
Alendronate	Disperse **tablets** in 10 mL water for 2 - 5 minutes, then administer immediately.
Ciprofloxacin	**Tablets:** Crush tablet and mix with 30 mL (250 mg and 500 mg tablets) to 50 mL (750 mg tablets) of water. **Oral Suspension:** DO NOT ADMINISTER via feeding tube as it will clog it.
Etidronate	Disperse tablet in water.
Levofloxacin	**Tablets:** Crush tablet and mix with 20 - 60 mL of water and administer immediately. **Oral Suspension:** Request 50 milligram/mL suspension from pharmacy.
Levothyroxine	**Tablets**: Disperse tablet with water and administer immediately. **Oral Suspension:** Request 25 microgram/mL suspension from pharmacy.
Phenytoin	**Capsules (phenytoin sodium, extended release):** Open capsules (DO NOT CRUSH), mix with water and administer immediately. **Solution (phenytoin acid, immediate release):** Request 25 mg/mL suspension from Pharmacy.
Rifampin	**Oral suspension:** Request 25 mg/mL suspension from Pharmacy.
Risedronate	Disperse tablets in 10 mL water for 2 - 5 minutes, then administer within 15 minutes.
Sucralfate	**For nasogastric or orogastric administration only.** **Oral suspension**: Request 200 milligram/mL suspension.
Tetracycline	**Oral suspension:** Request 25 milligram/mL suspension. Shake suspension thoroughly and administer down feeding tube.
Voriconazole	**Tablets**: Crush tablet and mix with water, and administer immediately. **Oral Suspension:** Request 40 mg/mL suspension.