



**UNIVERSITY OF NORTH CAROLINA HOSPITALS**  
Nursing Procedure Manual

**TITLE:**                    **Tube Feeding**

**PURPOSE:**                To outline nursing care of patient receiving enteral tube feedings.

**LEVEL:**                    This procedure is performed by the RN or LPN. Nursing students with NA II listing may administer after tube placement is verified by the licensed nurse.

**SUPPORTIVE**  
**DATA:**

A tube feeding introduces nutrients into the stomach when the patient is unable or unwilling to ingest sufficient calories and nutrients orally or if there is a volume intolerance or malabsorption problem.

Nasogastric tube feeding is the method of choice for patients with functional gastrointestinal tracts in view of low cost, simplicity and low risk of complications. Gastrostomy feeding is indicated when nasogastric or oral feeding is not possible or where extended enteral nutrition is required.

**GENERAL**  
**POINTS:**

- Tube feeding is a clean procedure.
- Formula and feeding sets should be handled with aseptic technique.
- Formula may be administered cold or at room temperature.
- Unused portions of formula may be stored in refrigerator for up to 24 hours in a closed container labeled with patient's name and date.
- Feeding sets (bag, tubing and/or syringe) should be changed every 24 hours.
- Feeding tube should be flushed with warm water (amount dependent on MD order):
  - at least every 8 hours during continuous feedings
  - after each residual check
  - before and after each medication administration
  - before and after intermittent/bolus feeding
- Blue dye should **never** be added to feedings
- Elevate head of bed at least 30 degrees when tube feedings are infusing  
and for 30-45 minutes after completion of feeding.
- **Checking Placement**
  - Verify placement by radiography with initial placement.
  - Verify placement by aspiration of gastric fluid before initiating any feeding or at least once per shift.

- Verify placement by auscultation of insufflated air only if unable to aspirate gastric fluid.

- **Checking Gastric Residual Volumes (GRV)**
  - Check residual prior to each intermittent feeding or every 4 hours for continuous feeds.
  - For patient  $\leq 12$  years of age: slow or stop feeding if GRV exceeds
    - > one hour infusion volume for neonates (< 29 days)
    - twice the hourly infusion volume of continuous feeding
    - 50% of the intermittent or bolus feeding volume
  - Use algorithm below for patients > 12 years of age

**Algorithm to Manage Gastric Residual Volumes (GRV) in Patients > 12 years**

GRV	Replace Residual Amount	Tube Feeding	Reassess GRV
$\leq 200$ mls	All	Continue current rate or advance, as ordered	In 4 hours
$> 200, \leq 300$ mls	200 mls	Continue at 1/2 rate or D/C if currently at 10 ml/hour	In 2 hours
$> 300$ mls	200 mls	Hold	In 2 hours

NOTE:

- Discuss adding a prokinetic agent and/ or easing sedation for patients with residuals > 200 mls. (Requires MD order).
- Correlate GRV with clinical assessment for abdominal pain, discomfort or cramping.
- Stop tube feeding immediately for nausea, vomiting or aspiration and notify MD

**Continuous feedings**

**EQUIPMENT:**

**Item:**

- Infusion Pumps: Kangaroo ePump or Medex Syringe pump
- Prescribed feeding/water
- Kangaroo feeding set or syringe with tubing
- Appropriate-sized syringe(to check placement)
- Stethoscope (if needed)

**CONTENT:**

**STEPS:**

**KEY POINTS:**

1. Obtain the prescribed formula.
2. Wash hands and cleanse any required

equipment, such as a can opener and top of formula can, before use.

**STEPS:**

3. Pour 4 X hourly infusion volume into the feeding bag or syringe using aseptic technique.
4. Prime tubing or feeding set.
5. Elevate the patient's head 30°-45°.
6. Implement Aspiration Precautions
- 7a. Check the feeding tube placement by aspirating GI fluid or auscultating the abdomen while insufflating air (gastric tubes only). Refer to UNC On-line Nursing Manual: Tube, enteral: Insertion and Removal.
- b. Measure gastric residual volume and flush.
8. Administer feeding at prescribed rate.
9. Flush tube with 5-20ml warm tap water (depends on patient's weight).
10. Monitor patient for intolerance to tube feeds, i.e. abdominal distension and/or discomfort/emesis.

**KEY POINTS:**

4. Kangaroo feeding set must be primed on ePump<sup>®</sup>.
5. If bending at the hip is contraindicated, place patient in reverse Trendelenburg position to elevate head.
6. Refer to On-line Nursing Manual: Aspiration Precautions Procedure.
7. a. G-tubes with buttons have a valve that prevents aspiration.
- b. Report following feeding residuals to MD (or as ordered by physician):
  - neonates: >1hr. volume
  - infants to 12 years:  
-2 X hourly infusion volume
  - > 12 years: follow algorithm above
9. Feeding ports should be flushed every 4 hours.

**Intermittent feedings****EQUIPMENT:****Item:**

- Infusion Pumps: Kangaroo ePump or Medex Syringe pump
- Prescribed feeding/water
- Kangaroo feeding set or syringe with tubing
- Appropriate-sized syringe(to check placement)
- Stethoscope (if needed)

**CONTENT:****STEPS:****KEY POINTS:**

- |  |  |
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| <ol style="list-style-type: none"> <li>1. Obtain the prescribed formula.</li> <li>2. Wash hands and cleanse any required equipment, such as a can opener and top of formula can, before use.</li> <li>3. Pour feeding volume into the feeding bag or syringe using aseptic technique.</li> <li>4. Prime tubing or feeding set.</li> <li>5. Elevate the patient's head 30°-45° during feeding and for 30 minutes after feeding</li> <li>6. Implement Aspiration Precautions</li> <li>7a. Check the feeding tube placement by aspirating GI fluid or auscultating the abdomen while insufflating air (<u>gastric tubes</u> only). Refer to UNC On-line Nursing Manual: Tube, enteral: Insertion and Removal.</li> <li>b. Measure gastric residual volume.</li> </ol> | <ol style="list-style-type: none"> <li>4. Kangaroo feeding set must be primed on ePump<sup>®</sup>.</li> <li>5. If bending at the hip is contraindicated, place patient in reverse Trendelenburg position to elevate head.</li> <li>6. Refer to On-line Nursing Manual: Aspiration Precautions Procedure.</li> <li>7. a. G-tubes with buttons have a valve that prevents aspiration.</li> <li>b. Report following feeding residuals to MD (or as ordered by physician): <ul style="list-style-type: none"> <li>• ≤ 12 years: &gt; 50% of feeding volume</li> </ul> </li> </ol> |
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**STEPS:**

8. Flush tube with 5-20ml warm tap water (depends on patient's weight).
9. Administer feeding at prescribed rate.
10. Flush tube with 5-20ml warm tap water (depends on patient's weight).
11. Monitor patient for intolerance to tube feeds, i.e. abdominal distension and/or discomfort/emesis.

**Bolus feedings****EQUIPMENT:****Item:**

- Prescribed feeding/water
- Appropriate-sized syringe (for feeding and to check placement)
- Stethoscope (if needed)

**CONTENT:****STEPS:**

1. Obtain the prescribed formula.
2. Wash hands and cleanse any required equipment, such as a can opener and top of formula can, before use.
3. Measure feeding volume into the graduated container or cup.
5. Elevate the patient's head 30°-45° during feeding and for 30 minutes after feeding.
6. Implement Aspiration Precautions

**KEY POINTS:**

- > 12 years: follow GRV algorithm
8. Feeding ports should be flushed every before and after each intermittent feeding.
  5. If bending at the hip is contraindicated, place patient in reverse Trendelenburg position to elevate head.
  6. Refer to On-line Nursing Manual: Aspiration Precautions Procedure.

**STEPS:**

- 7a. Check the feeding tube placement by aspirating GI fluid or auscultating the abdomen while insufflating air (gastric tubes only). Refer to UNC On-line Nursing Manual: Tube, enteral: Insertion and Removal.
  - b. Measure gastric residual volume.
8. Flush tube with 5-20ml warm tap water (depends on patient's weight).
9. **Skin level/low profile G-tube:**
    - a. Attach feeding tube to anti-reflux valve opening
    - b. Attach 60ml syringe to feeding tube port (plunger removed).
    - c. Pour bolus feeding into syringe; allow flow by gravity.
    - d. Flush G-tube.
    - e. Remove feeding tube attachment; re-insert plug.

**Standard G-Tube:**

(Foley catheter – type G tube)

- a. Unclamp.
- b. Insert 60ml syringe without plunger.
- c. Pour bolus feeding into syringe: allow to flow by gravity.
- d. Flush G-tube.
- e. Clamp G-tube.
- f. Remove syringe.

**STEPS:****KEY POINTS:**

7. a. G-tubes with buttons have a valve that prevents aspiration.
  - b. Report following feeding residuals to MD (or as ordered by physician):
    - ≤ 12 years: > 50% of feeding volume
    - > 12 years: follow GRV algorithm
8. Feeding ports should be flushed every before and after each bolus feeding.
9.
    - c. Gentle pressure with plunger may be needed to start flow of feeding. Regulate flow rate by gently pinching tube or adjusting height of syringe.

**KEY POINTS:**

**NG/OG tube with its own cap/clamp:**

- a. Unplug cap/unclamp.
- b. Insert 60ml syringe.
- c. Pour bolus feeding into syringe; allow to flow by gravity.
- d. Flush tubing.
- e. Replace cap/reclamp.
- f. Elevate the patient's head to 30-45° during feeding and for 30 minutes after feeding.
- b. A smaller syringe may be used for small volume feedings.
- c. Gentle pressure with plunger may be needed to start feeding.
- f. Some patients may require feeding tube to be left open to air to "vent".

10. Monitor patient for intolerance to tube feeds, i.e. abdominal distension and/or discomfort/emesis.

**DOCUMENTATION:** Record the following information on the Patient Care Record:

- name of the formula used.
- amount of formula infused.
- amount of flush.
- time of the feeding.
- patient response.
- implementation of aspiration precautions

**REFERENCES:**

- American Association of Critical-Care Nurses. (n.d.). Practice alert: Verification of feeding tube placement. Retrieved June 1, 2006 from <http://www.aacn.org/AACN/practiceAlert.nsf>
- American Society for Parenteral and Enteral Nutrition (2005). A.S.P.E.N. Nutrition support practice manual (2<sup>nd</sup> Ed.). Silver Springs, MD: A.S.P.E.N.
- Metheny, N. (2006). Preventing respiratory complications of tube feedings: Evidence-based practice. *American Journal of Critical Care*, 15(4), 360-369
- Serna, E. & McCarthy, M. (2006). Heads up to prevent aspiration during enteral feeding. *Nursing* 36(1), 76-77.

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## Quick feeding Reference Guide

	<b>BOLUS FEEDING</b>	<b>INTERMITTENT FEEDING</b>	<b>CONTINUOUS FEEDING</b>
Rate of delivery	15-20 minutes	1-2 hours	MD ordered rate
Check GRV	Before each feeding	Before each feeding	Every 4 hours
Verify tube placement	Initial insertion Before each feeding	Initial insertion Before each feeding	Initial insertion Every 4 hours
Flush tube	Before and after each feeding	Before and after each feeding	Every 4 hours