

# Tube Feeding

If you cannot eat sufficient quantities of food to meet nutritional needs, then feeding can be given through a tube into the stomach or small bowel to provide adequate nutrients. There are a variety of tube feeding formulas on the market. They are made by several different companies. These formulas are designed to support life by meeting 100% of the person's nutritional needs. The feedings may be given continuously over several hours, around the clock at a specific rate and delivered by a special pump or several times a day in measured amounts. Adequate nutrition depends on the right type and amount of formula. Your healthcare provider will prescribe your feeding schedule, formula and amount of water needed for optimal nutrition and hydration.

Calorie and protein needs may change over time so tube feedings may need to be adjusted to avoid unwanted weight gain. It is important to monitor your body weight and know your weight goals. If you have significant weight changes (gain or loss of more than 2 lbs in 1 wk) or if you are cleared to eat by a Speech Language Pathologist, contact your doctor, home health company, or registered dietitian for a tube feeding adjustment.

## Types of Feeding Tubes

1. **Percutaneous Endoscopic Gastrostomy (PEG) Tube** is a tube that goes through the skin and directly into the stomach, used to administer tube feeding, water and medications.
2. **Percutaneous Endoscopic Jejunostomy (PEJ) Tube** is inserted in a similar manner as the PEG, but the tube is moved past the stomach into the top of the small intestine.
3. **Nasogastric tube (NG)** is a common type of feeding tube for short term use. It enters through the nose and its tip ends up in the stomach.

## Tube Feeding Preparation

- Store the unopened products at room temperature, not in direct sunlight.
- Wash your hands prior to handling the products.
- Shake the can or bottle well and wipe the top clean prior to opening.
- Administer the feeding when the product is at room temperature.
- Cover any unused product and store in the refrigerator.
- Store the product for a maximum of 24 hours; if not used, discard the remainder.
- When administering the feeding product after it has been refrigerated, let the product warm to room temperature by setting it on the counter for about 15 minutes before putting it through the feeding tube. **Never** microwave any tube feeding product.

## Supplies to Gather

1. Correct tube feeding to be delivered (can or 24 hour bottle)
2. Feeding pump (if on continuous tube feeding)

3. Feeding set (bag set or spike set)
4. 60 ml syringe
5. Graduated container
6. 50 ml water

#### **Positions for receiving tube feedings:**

1. Propped up in bed or on a couch in a half sitting position with the head raised at least 30 degrees
2. Sitting up in a chair
3. **Never while lying flat**

#### **Check gastric residual for PEG feedings only**

"Residual" means fluid/contents that remain in the stomach. Only those fed through a PEG tube should have a residual.

#### **How to check residual:**

1. Connect a syringe to the PEG tube.
2. Gently draw back the plunger of the syringe to withdraw stomach contents.
3. Read the amount in the syringe.
4. Inject the contents back into the feeding tube (It contains important electrolytes and nutrients).
5. Use the syringe to rinse the feeding tube with 30 ml of water.
6. If the gastric residual is more than 200 ml, delay the feeding.
7. Wait 30 to 60 minutes and do the residual check again. If the residuals continue to be high (more than 200 ml) and feeding cannot be given, then call your healthcare provider for instructions.

#### **Procedure – Continuous or Cyclic Tube Feeding**

1. Wash hands.
2. Assess abdomen for distention.
3. Elevate head of bed to at least 30 degrees.
4. **If using a PEG tube**, measure residual every 4 hours (if residual is more than 200 ml or other specifically ordered amount, hold for one hour and recheck; if it still remains high notify doctor).
5. **If using a PEG tube**, reinstall residual.
6. Hang tube feeding (no more than 8 hours worth if in bag set up).
7. Prime tubing.
8. Connect tubing to client.
9. Set rate.
10. Start pump.

#### **Procedure - Bolus Tube Feeding**

1. Wash hands.
2. Assess abdomen for distention.
3. Elevate head of bed to at least 30 degrees.
4. **If using a PEG**, measure residual every 4 hours (if residual is more than 200 ml or other specifically ordered amount, hold for one hour and recheck; if it still remains high notify doctor).
5. **If using a PEG**, reinstall residual.
6. Insert 60 ml syringe into port and pour feeding product into syringe.
7. Add formula to drain by gravity.
8. Add more formula until the desired amount is infused.
9. Flush with 50 ml (or amount ordered by doctor) of water.
10. Cap the tube.
11. Remain in upright position for at least one hour after feeding.
12. Rinse equipment thoroughly.

**If using a PEG, it is important to check tube feeding residuals every 4 hours while receiving continuous feedings and right before bolus feedings.**

### **Cleaning the Tube Site and Equipment**

- The site should be cleaned daily with soap and water.
- Do site care per the doctor's orders.
- Tube feeding bag sets (seen in the picture below) may be cleaned with soap and water.
- Make sure to run the soapy water through the tubing as well.
- Tube feeding bag sets are good as long as they remain intact.
- Rinse with water to make sure all of the soap is out of the bag and the tubing.
- Syringes and canisters may be cleaned with soap and water or placed in a dishwasher on the top rack. They may also be used for as long as they remain intact.



### **Mouth Care:**

- Good mouth care is very important, even when you're not eating or drinking.
- Brush all the surfaces of your teeth, gums and tongue at least two times a day.
- Use a soft bristled electric toothbrush if your loved one is able to tolerate the vibration. Mild toothpaste or powder is recommended.
- Use alcohol free mouthwash or a mild salt solution (1/2 teaspoon of salt in 2 cups of water), as needed to freshen breath.
- If your lips are dry, use a lanolin-based moisturizing cream to moisten lips.
- Tell your doctor if the dryness does not go away. More fluids may need to be added through the tube.
- Tell your healthcare provider if you have bleeding gums or sores.

### **Troubleshooting Feeding Tubes:**

#### **Clogged or Blocked Feeding Tubes**

##### **Recognition:**

- Inability to flush with water
- Inability to administer tube feeding or medications

##### **Causes:**

- Inadequate flushing of tube
- Medications not adequately crushed and dissolved before being put in tube
- Tube clamp is closed
- Defective tubing
- Tube feeding infusion rate is too low

##### **Prevention:**

Flush the tube with 5 ml water between each medication.

- To prevent tube blockage, flush the tube with 30-50 ml warm water:
  - Before and after each feeding
  - Every 4 hours if the patient is receiving continuous feedings
  - After checking for stomach content residuals
- Do not mix medication with formula.
- Medication should be in liquid form when possible. If not, crush finely and make sure it is well dispersed in water.
- Give multiple medications one at a time and rinse the tube with warm water before and after.
- Open clamp when flushing, feeding or administering medications.

#### **What do I do when I have a clogged tube?**

1. Draw up warm (never hot or cold) water with plunger into the syringe, attach to feeding tube and gently work it back and forth to loosen the clog.
2. Pull out as much of the contents of the tube as you can.
3. "Milk" or massage the tube to loosen the residual.
4. Contact your healthcare provider if the clog is not released easily.

### **VIDEO – TROUBLESHOOTING A CLOGGED FEEDING TUBE**



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[Video](#)

#### **Nausea/Vomiting:**

##### **Recognition:**

- Nausea, vomiting
- Abdominal cramping, pain, feeling bloated

##### **Causes:**

###### 1. Mechanical problem

- Tube displaced
- Patient not positioned properly

###### 2. GI problems

- Poor gastric emptying, reflux, ulcer

- Bowel obstruction
- Constipation

3. Side effect of medication or other treatments

4. Problem with formula

- Unable to tolerate tube feeding formula
- Rate of tube feeding is too high
- Allergy or intolerance to formula

5. Offensive odors, sight and smell of food

**Prevention:**

- Use good hand washing when handling tube feeding and equipment.
- Wash all equipment with hot water after use.
- Do not use one tube feeding bag longer than 24 hours. Before reusing bag, clean with soap and hot water, rinse well and allow to air dry.
- Before reusing a bag, wash in warm water.
- Check expiration date of formula.
- Cover and store any open formula in the refrigerator and discard after 24 hours.
- Check the label of the formula to determine the maximum number of hours it may be infusing at room temperature.
- Elevate the head of the bed to 30 degrees or higher, or administer while seated in an upright position.
- When starting new medications, ask your healthcare provider if nausea/vomiting are possible side effects.
- Ask physician about medications that can be prescribed to assist with gastric emptying, reflux and ulcers.
- Remove all offensive sights or smells.

**Immediate Action:**

- Stop feeding.
- If vomiting continues for more than 24 hours, call your healthcare provider for further intervention.

**Diarrhea:**

**Recognition:**

- Frequent, loose stools with abdominal pain and cramping

**Causes:**

- Not tolerating formula
- Rate of administration is too high
- Formula contaminated
- Side effects of medications
- Not tolerating oral diet

**Prevention:**

- Use appropriate feeding method and rate.
- Use good hand washing when handling tube feeding and equipment.
- Discuss the possibility of switching formulas with healthcare provider.
- Inform your healthcare provider of recent changes in medications, particularly antibiotic use.
- Review oral diet for contents that may lead to diarrhea (spicy food, high sugar or fat, lactose).

**Immediate Action:**

- Decrease the tube feeding administration rate.
- Call your healthcare provider if diarrhea is excessive for more than 24 hours, or if there is blood in the stool.

**Constipation:****Recognition:**

- Infrequent, hard stools
- Stool impaction
- Abdominal bloating, cramping, pain

**Causes:**

- Not getting enough fluid or fiber in diet
- Side effect of medication
- Decreased physical activity

**Prevention:**

- Discuss increasing water and fibers with healthcare provider.
- Discuss use of stool softeners and/or laxatives with healthcare provider.
- When starting new medications ask healthcare provider if constipation is possible side effect.
- Stay as physically active as possible.

**Immediate Action:**

- Increase fluid and fiber intake per healthcare provider's instructions.
- Administer or increase stool softeners or laxatives per your healthcare provider's instructions.
- Call your healthcare provider if there is no bowel movement for more than 3 days, and/or you are experiencing vomiting or continued abdominal bloating and cramping.

**Aspiration:****Recognition:**

- Vomiting, heartburn
- Coughing or choking with difficulty breathing or chest pain
- Shortness of breath
- Possible fever

**Causes:**

- Swallowing disorder, decreased gag reflex, GERD
- Delayed gastric emptying

**Prevention:**

- Elevate head of bed to at least 30 degrees or use an upright sitting position when administering tube feeding, water boluses or medications through tube.
- Do not feed if stomach feels full or distended, or if person is vomiting.
- Take prescribed medication for GERD or to assist in gastric emptying.

**Immediate Action:**

- Stop tube feeding, and/or water bolus.
- Call your healthcare provider for appropriate intervention.

**When to Call the Doctor****Call your physician if any of the following occurs:**

- Problems with the function of the tube or drainage around the tube
- If the stoma is persistently red, swollen, sore, has leakage, bleeding (more than a small amount) or has a foul odor
- Headaches, muscle aches, dizziness or general ill feeling
- No bowel movement for more than 3 days, and/or you are experiencing vomiting or continued abdominal bloating and cramping

- Signs of aspiration, including coughing, choking, shortness of breath and possible fever
- Excessive diarrhea lasting more than 24 hours, or if there is blood in the stool
- Vomiting that continues for more than 24 hours
- Significant weight gain or loss

Complication	Nursing Intervention
Aspiration of gastric secretions	<p>Discontinue feeding immediately.</p> <p>Perform tracheal suction of aspirated contents, if possible.</p> <p>Notify doctor. Prophylactic antibiotics and chest physiotherapy may be ordered.</p> <p>Check (NG) tube placement before feeding to prevent complications.</p>
Tube obstruction	<p>Flush the tube with warm water.</p> <p>Flush the tube with 50 ml of water after each feeding to remove excess sticky formula, which can clog the tube.</p> <p>When possible, use liquid forms of medications.</p> <p>Otherwise, crush well.</p>
Oral, nasal or pharyngeal irritation or necrosis	<p>Perform frequent oral hygiene using mouthwash or sponge-tipped swabs. Use petroleum or water based lubricant on cracked lips.</p> <p>Change the position of the tube.</p>
Vomiting, bloating, diarrhea or cramps	<p>Reduce the flow rate. If doing bolus, place the syringe lower to decrease the rate of the bolus.</p> <p>Warm the formula to prevent GI distress (run under warm water until lukewarm). <b>NEVER MICROWAVE!</b></p> <p>For 30 minutes after feeding, position the patient on his right side with the head elevated to facilitate gastric emptying.</p> <p>Notify your doctor. He/she may want to reduce the amount of formula given.</p>
Constipation	<p>Provide additional fluids if the patient can tolerate them.</p> <p>Administer a bulk-forming laxative (with doctor's</p>

approval).

Hyperglycemia

Monitor blood glucose levels.  
Notify doctor of elevated levels.  
Administer insulin, if ordered.