

What Is an Enteral Feeding Tube?

Enteral refers to within the digestive system or intestine. Enteral feeding tubes allow liquid food to enter your stomach or intestine through a tube. The soft, flexible tube enters a surgically created opening in the abdominal wall called an ostomy. An enterostomy tube in the stomach is called a gastrostomy. A tube in the small intestine is called a jejunostomy. The site on the abdomen where the tube is inserted is called a stoma. The location of the stoma depends on your specific operation and the shape of your abdomen.

Most stomas:

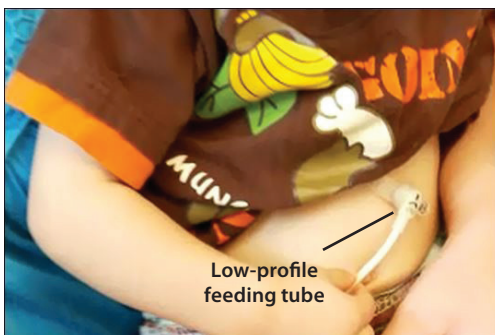
- ▶ Lie flat against your body
- ▶ Are round in shape
- ▶ Are red and moist (similar to the inside of your mouth)
- ▶ Have no feeling





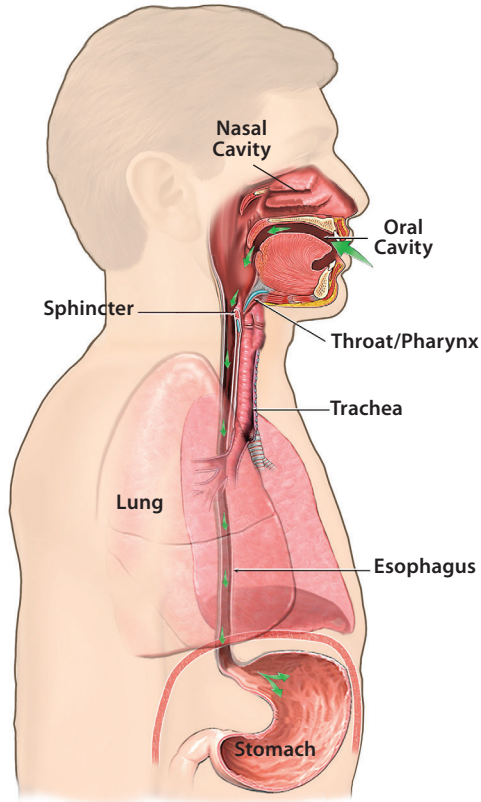
Who Needs an Enteral Feeding Tube?

Cancer, trauma, nervous system and digestive system disorders, and congenital birth defects can cause difficulty in feeding. Some people also have difficulty swallowing, which increases the chance that they will breathe in food (aspirate). People who have difficulties feeding can benefit from a feeding tube. Your doctor will explain to you the specific reasons why you or your family member need a feeding tube. For some, a feeding tube is a new way of life, but for others, the tube is temporary and used until the problem can be treated or repaired.

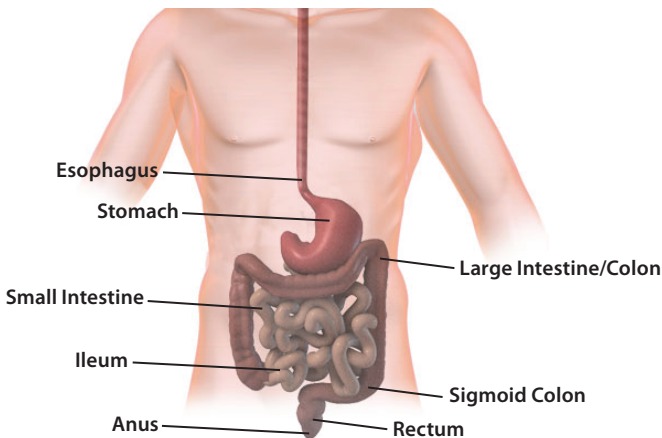


Understanding Your Digestive System

When food enters your oral cavity (mouth), the lips and tongue move it toward the back of the throat. The throat (pharynx) is the passageway leading from the mouth and nose to the esophagus and larynx (voice box). At the back of the throat, two tubes form. The trachea (airway) carries air to the lungs. The esophagus (feeding tube) moves the food down into the stomach. When food moves into the esophagus, the opening at the top of the esophagus (sphincter) tightens to stop the upward movement of the food. The pharynx acts as a doorway. When food is passing, the opening to the airway closes.



When food reaches the stomach, it is broken down into very small pieces. It then moves into the small intestine, where enzymes break down food into thick liquid. This thick liquid passes further through the small intestine, where nutrients, vitamins, and water are absorbed. The liquid then passes through the large intestine (colon). Water is absorbed from the stool in the colon. It becomes more solid and eventually moves out through the rectum.



Types of Feeding Tubes and How They Are Inserted

The type of feeding tube and the procedure to place it will depend on the patient's condition, age, and other health factors. Feeding tubes can vary in length and number of ports or openings.

The main types of tubes include:

▶ **Long gastric tubes**

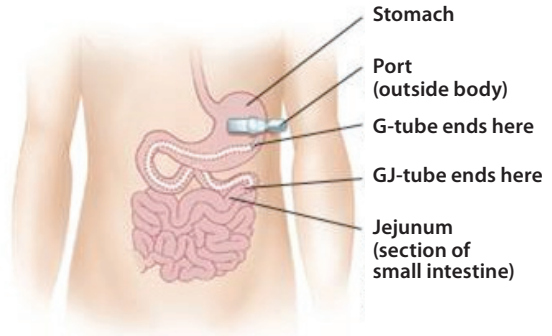
connect directly to tubing or syringes for feedings. They may have 1 or 2 ports as well as a port for placement of water into the internal balloon.

- ▶ **Low-profile gastric tubes or gastric buttons** lay flat on the abdomen when not in use and require an extension set to be attached for feedings. They also may have a port for placement of water into the internal balloon.

▶ **Gastro-jejunostomy tubes (GJ-tubes or low-profile GJ-buttons)**

pass through the stomach and into the small intestine (jejunum). Feedings and medication can be delivered into the stomach or small intestine depending on the patient's needs. These usually have separate ports for the stomach and the jejunum as well as a port for placement of water into the internal balloon.

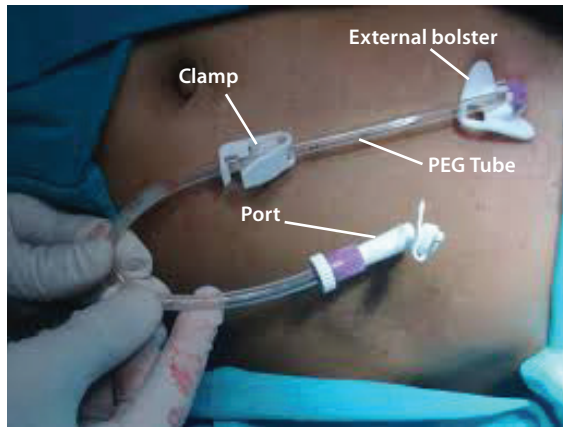
- ▶ **Jejunostomy tubes (J-tubes)** enter the jejunum (small intestine) directly and allow slow feedings to the jejunum only. These look similar to long gastric tubes.



PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG) TUBES

Percutaneous endoscopic gastrostomy (PEG) is the name of a procedure where a G-tube is placed by endoscopy. Placement of a PEG tube can be done under local anesthesia with sedation. A narrow tube with a light on the end (endoscope) is inserted in the mouth and moved down into the stomach. A puncture is made with large needle through the skin over the stomach, and a heavy string is pulled through it by the endoscope. The string comes out the mouth and attaches to a long tube, which is then pulled into the stomach and out of the skin incision. A bumper on the end of the tube keeps it inside the stomach, and a bolster keeps it in place from the outside. These are initially long tubes that can be changed to low-profile devices later.

The long tube may also have a Y-port that allows for one side to connect directly to the feeding and an opening for medications and water. The term “PEG” is often used to describe all G-tubes.



PERCUTANEOUS RADIOLOGIC GASTROSTOMY (PRG) TUBES

Percutaneous radiologic gastrostomy (PRG) is the name of another procedure where a G-tube is placed in the stomach. This procedure is done under local anesthesia with sedation. The abdomen is viewed by fluoroscopy, a continuous X-ray image on a monitor. A puncture is made with a large needle through the skin over the stomach. A larger opening is then created so that the gastrostomy tube can be inserted into the stomach. The tube is held in the stomach with an internal balloon and a bumper on the outside. These can be either long tubes or low-profile tubes.

SURGICAL G-TUBES AND SKIN-LEVEL DEVICES/ LOW-PROFILE BUTTONS

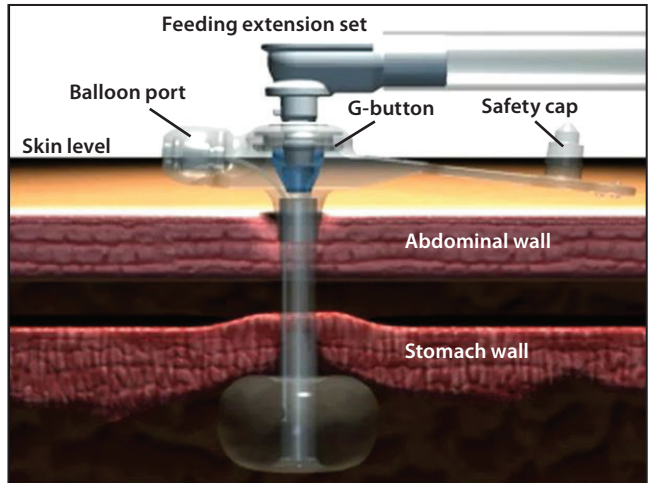
Surgical gastrostomy tubes are inserted in the operating room under general anesthesia. Either a minimally invasive approach (laparoscopy) or a standard open operation (surgery) is used to insert the feeding tube through the abdominal wall into the stomach. The tube has an internal balloon or bumper to hold it in place, but the stomach is also sutured (sewn) to the inside of the abdominal wall. Many pediatric patients receive a laparoscopic primary low-profile/button device. Long tubes may be changed to low-profile tubes once the tract has healed—usually 6 weeks to 3 months later, depending on the technique.



Low-profile button



Low-profile button



GASTRO-JEJUNAL (GJ) TUBES

Gastrojejunal or GJ-tubes are used when feedings need to bypass the mouth, esophagus, and stomach. These tubes or low-profile devices are usually inserted through the existing healed tract of a G-tube. The tube end is moved from the stomach into the small intestine by guide wires under X-ray imaging. They can also be positioned by endoscopy or at the time of an operation. These are occasionally placed as the first tube by any of the methods described above.



Gastrojejunal (GJ) tube

The GJ-tube has two ports: gastric and jejunal. The gastric port (marked "G") is used to access the stomach and is usually used for medication. The jejunal port (marked "J") is used for feeding.

JEJUNOSTOMY (J) TUBES

A jejunostomy (J) tube is also used when feedings need to bypass the stomach. They are usually placed at the time of a related operation but can also be placed radiologically. The J-tube is inserted through the wall of the intestine. The tube is secured on the outside of the abdomen, and a small balloon may help keep it in place inside the jejunum (small intestine).

When feedings are delivered into the small intestine by either GJ-tube or J-tube, they must be slow, continuous feedings, since the intestine cannot store food like the stomach does.

Feeding Tube Supplies

Your supplies are usually delivered to your home. Supplies may include syringes, a feeding bag, a pole, feeding solution, a pump, and a backpack for carrying the pump.

SYRINGES

There are different types and sizes of syringes used with tube feedings. Large 60 mL syringes are used to give bolus syringe feedings, flush or check placement of a tube, or vent a tube. Smaller 10 mL syringes are generally used to flush children's tubes or give medication. Smaller 5 mL syringes are generally used to inflate the balloon that holds the tube in the stomach with water. There are markings on the outside of each syringe that you can use to measure how much formula or water to give.



Slip-tip syringe



Catheter-tip syringe



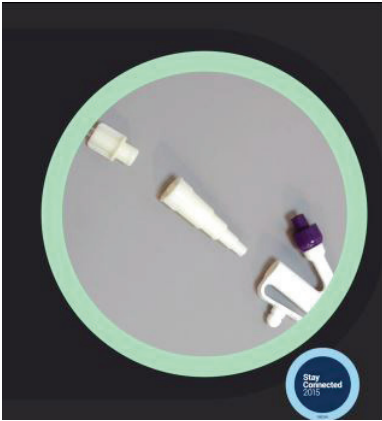
Twist-tip syringe



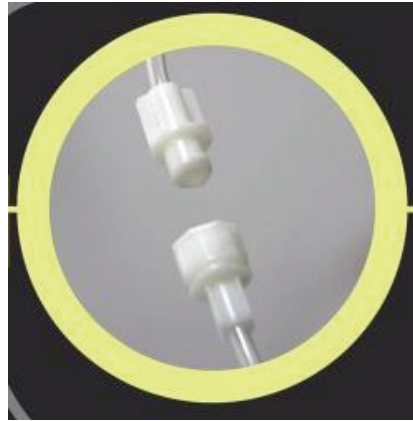
Transition adapter

FEEDING TUBE CONNECTORS

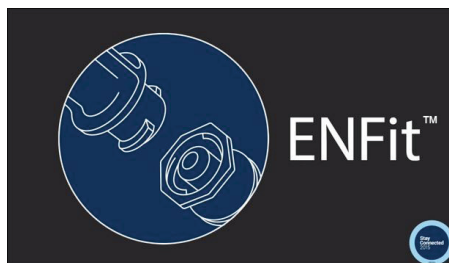
In 2015, a conversion took place to enable all feeding tube connectors and syringes to only fit other feeding tube supplies and not other tubes that enter the body. During this conversion, adapters will be used between syringes and tubes so older supplies may still be used with feeding tubes. You may be supplied with any of the various syringes, connectors, or adapters seen below. When the conversion is complete, all syringes and feeding tube connectors will have an ENFit™ twist tip that will secure the connection.



2015 transition connector
to feeding tube



ENFit feeding set to feeding
tube connector



When the connector transition is complete,
all feeding tube syringes and feeding sets
will have ENFit twist connector
safety features

Image credit to Global Enteral Device Supplier Association (GEDSA)

For more information, go to www.stayconnected.org

FEEDING TUBE BAGS AND EXTENSION SETS

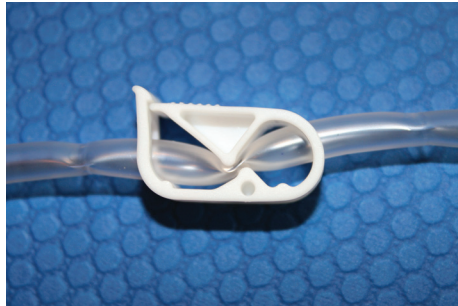
A feeding tube bag holds the feeding solution. The bag is filled with feeding solution through the opening at the top.



Fill the feeding bag

Feeding tube bags can attach to a pump to deliver a consistent flow of feeding or hang for gravity flow. The bag has clamps that open and close.

One end of the extension/feed set is attached to the feeding device while the other end is connected to the food source. Between feeds, the extension/feed set can be removed after flushing the device at the end of the feeding. Extension sets are often replaced every 1 to 2 weeks.



Tubing clamped



Feeding extension set

PUMPS AND POLES



An enteral feeding pump can deliver feedings at a steady rate. The pump is electrical or battery operated, and it can be rented or purchased from a medical supply company. The medical supply company will help you set up the pump and give you instructions for its use.

Feeding pumps come in a variety of sizes, and some are portable for travel. The pump can be attached to a pole on wheels or placed in a backpack.

If the pump is running on battery power, it has alarms that alert you about the following problems:

- ▶ If there is a blockage in the flow of the feeding
- ▶ If there is a kink in the feeding tube
- ▶ If the feeding bag is empty



GAUZE DRESSINGS

If there is any drainage at the site, gauze dressings may be placed around the stoma site for the first few days after the tube is inserted. But they are not to be used routinely for everyday care of the feeding tube.



Mouth and Skin Care **SKILL**

Watch and Review

- ▶ Keeping your mouth and skin clean is essential.
- ▶ Watch the DVD, then just follow each of the steps.

SKILL: MOUTH CARE

Some patients with gastrostomy and jejunostomy tubes will also be taking food by mouth. If you are not taking anything by mouth and have an enteral tube, it is still important to keep your mouth clean.

- ▶ Continue to brush your teeth with a soft brush twice a day.
- ▶ Keep your lips moist to prevent cracking. If needed, use a lip cream.

Call your doctor or nurse if you have any continued cracked red skin or mouth problems.

Infants or the elderly who do not have teeth will need to have their gums rubbed with a moist cloth. Ice chips or sugarless gum can help keep your mouth moist if you are allowed.



SKILL: SKIN CARE

- ▶ It is important to keep the skin around the feeding tube stoma site clean and dry. After a gastric button or long tube is inserted, there may be a small amount of redness or yellowish fluid around the new stoma site.
- ▶ The fluid will dry and crust around the site.
- ▶ Clean around the stoma with mild soap and water, and apply a small gauze dressing with a "Y" cut into the center to allow the gauze to sit around the tube. Use a dressing for the first 2 to 3 days and then remove. Clean around the stoma after that while bathing, and do not use lotions, ointments, or creams on the skin.
- ▶ Rotate the gastric button or tube after cleaning the skin to prevent skin breakdown due to pressure.
- ▶ If you have had a PEG or PGJ procedure, there may be a dressing on the site. It is often left in place for one or two days. If the site is healed, remove the dressing. Clean the site once a day with soap and water, and keep the site dry.
- ▶ You should not attempt to rotate the tube with a PEG or PGJ insertion because it is stitched (sutured) in place.



Feeding through a Gastrostomy Tube **SKILL**

Watch and Review

- ▶ Watch the DVD, then just follow each of the steps.

Methods of Feeding

- ▶ There are several different ways to feed through the gastrostomy tube. The delivery and feeding method will be determined by your health care provider.

Feeding Delivery Methods and Devices



Direct/Syringe/Gravity	A large syringe is inserted into the feeding tube port or extension/feed set. Feeding is added to the syringe and flows by gravity through the feeding tube.
Direct/Feeding Bag/Gravity	A feeding bag is filled and elevated to allow feeding to flow through the feeding tube port into the feeding tube.
Pump Feeding	A feeding bag is attached to a pump. The pump allows feedings to be given over a set period of time: over several times in a day or continuously.

About Your Feeding Solution

- ▶ The type of enteral feeding you will be getting is based on your overall health and medical condition. Your health care provider will give you the type, amount, rate, and delivery method for your feedings. See your discharge instructions.
- ▶ Check your feeding solution—always check the label and expiration date of the feeding solution. Do not use if the expiration date has passed.
- ▶ Cover and refrigerate all unused, open containers or prepared feeding solutions. Always label the container with the date and time it was opened.
- ▶ Feeding solution used straight from the container can hang for up to 8 hours. Feeding solution that is mixed with water, powder, or other liquids can be hung for up to 4 hours. Breast milk can also be hung for 4 hours. Dispose of open feeding solution if it has not been used in 24 hours.
- ▶ Opened powdered formula can be stored for up to 30 days.
- ▶ Breast milk can be stored in the refrigerator for 2 days before being discarded. Dispose of fortified breast milk after 24 hours.
- ▶ If the feeding solution has been stored in the refrigerator, warm it to room temperature by holding the container under warm tap water or setting it in a bowl of warm water.
- ▶ Do not microwave feeding, as hot spots and uneven heating can occur with this method.
- ▶ Be sure that feeding tubes are flushed before and after each feeding with the amount of water recommended by your physician.

Type of formula	Maximum Hang Time
Formula straight from the container	8 hours
Formula mixed with water, powders, or other liquids	4 hours
Breast milk	4 hours

Skills Done before Each Feeding

1. SKILL: PREPARE THE FEEDING SOLUTION

- ▶ Check the label and expiration date on the feeding. Do not use if the expiration date has passed.
- ▶ If the feeding has been stored in the refrigerator, warm it to room temperature by holding the container under warm tap water or setting it in a bowl of warm water.

2. SKILL: GATHER THE EQUIPMENT

- ▶ A feeding syringe or feeding bag
- ▶ An extension/feed set (optional) for buttons only
- ▶ A feeding pump (optional) if you are feeding continuously
- ▶ Feeding solution
- ▶ Water to flush the tube after feeding



3. SKILL: POSITION FOR FEEDING

- ▶ A child, infant, or adult needs to be in an upright position during the entire feeding.
- ▶ An infant or a small child may be held in your arms.
- ▶ A child or adult may be seated in a chair.
- ▶ If the feeding is given during the night or to someone who is in bed, the goal is to keep the head higher than the stomach. Elevate the head and upper body to a 30- to 45-degree angle by using several pillows or a bolster.
- ▶ If eating along with the feeding is an option, small portions should be available to suck or chew on.



4. SKILL: ATTACH THE EXTENSION/FEED SET FOR G-TUBE BUTTONS ONLY

The feeding extension set needs to be connected and disconnected from the feeding source and feeding device before and after each feeding.

- ▶ Wash your hands with soap and water.



- ▶ Open the safety cap on the G-tube button.
- ▶ Hold the G-tube button firmly between 2 fingers.
- ▶ Line up the black marks on the end of the extension feed set with the marks on the feeding cap.



Line up the black lines



Rotate the extension set a $\frac{3}{4}$ turn

- ▶ Insert the extension/feed set securely into the button or port marked "gastric."
- ▶ Turn no more than a $\frac{3}{4}$ turn clockwise to lock.
- ▶ Make sure the feeding set is locked in securely.

SKILL: FEEDING DIRECTLY THROUGH A SYRINGE WITH GRAVITY (BOLUS SYRINGE FEEDING)

Please see page 17 and follow steps for Skills 1, 2, and 3 (and 4 if you have a low-profile tube)

- ▶ Wash your hands with soap and water.
- ▶ Pull back tightly on the plunger to remove it from the feeding syringe, and set the plunger aside. Attach the empty feeding syringe to the feeding port or extension set.
- ▶ Slowly pour the recommended amount of feeding solution into the syringe.
- ▶ Unclamp the feeding tube and allow the feeding to flow through the tube. The feeding will normally flow in over 15 to 20 minutes. Lifting the syringe higher will result in a faster flow, and lowering the syringe will result in a slower flow. The syringe may not hold the entire amount of formula, so you may have to fill it several times.
- ▶ When the feeding is finished, pour water into the syringe to flush the tube. For adults, this is routinely 20 mL to 30 mL, and 5 mL to 10 mL for young children.
- ▶ Clamp the tube and remove the syringe.
- ▶ The infant, child, or adult should remain sitting upright for 30 minutes after the feeding.
- ▶ If you used an extension/feed set for a G-button, disconnect the extension/feed set by turning the button or port counterclockwise.
- ▶ Remove the extension set and close the button safety cap.
- ▶ Wash the feeding set with warm, soapy water and let it air-dry.



Pull back on syringe plunger



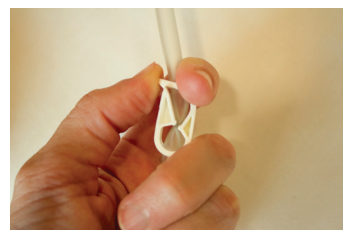
Remove syringe plunger



Pour syringe feeding



Unclamp tube to deliver feeding



Unclamp the tube

SKILL: GRAVITY FEEDING WITH A FEEDING BAG

Please see page 17 and follow steps for Skills 1, 2, and 3 (and 4 if you have a low-profile tube)

Follow all previous instructions for positioning for feeding, attaching the extension/feed set, and checking for placement and function.

- ▶ Wash your hands with soap and water.
- ▶ Connect the feeding bag and the extension tubing and extension feed set if used.
- ▶ Clamp the feeding bag. Add the required solution to the feeding bag with the lower end clamped.
- ▶ Unclamp and clear or prime the feeding bag so that the solution flows through the tubing to the tip of the feeding extension feed set, and clamp the tubes.
- ▶ Open the safety cap on the feeding tube. If used, connect the feeding bag or extension set.
- ▶ Raise the feeding bag to the required height, open the clamps on the feeding bag and extension/feed set and allow the feeding to flow over 15 to 20 minutes.
- ▶ When the feeding is finished, pour in the prescribed amount of water or use a syringe to flush the feeding tube with water.
- ▶ Clamp the feeding set and gravity bag tubing and remove.
- ▶ Wash the feeding bag and set with warm, soapy water, rinse and hang to dry.



Fill the feeding bag



Flush the feeding tube



Washing the feeding set

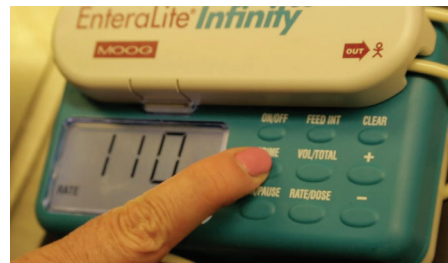
SKILL: FEEDING WITH A PUMP

Please see page 17 and follow steps for Skills 1, 2, and 3 (and 4 if you have a low-profile tube)

- ▶ Wash your hands with soap and water.
- ▶ Prepare the tubing by attaching the feeding tube bag to the feeding set and clamp the tubes.
- ▶ Attach the tubing to the feeding pump.
- ▶ Insert the end of the feeding bag tubing into the extension/feed set.
- ▶ Fill the bag with feeding solution. Turn the pump on and hold the Prime button, which will flush the solution through the end of the tubing.
- ▶ Open the safety cap and attach the end of the feeding set to the feeding tube or G-button.
- ▶ Set the rate, unclamp the tubing and push the "Start" button.
- ▶ Tubes should be flushed with water at the end of a feeding or every 4 to 6 hours during continuous feeding.
- ▶ Clamp and disconnect the feeding set or feeding extension set, if used.
- ▶ Wash the feeding and extension set with warm, soapy water at least once a day, rinse, and let it air-dry.



Fill the feeding bag



Prime the pump



Attach extension/feed set



Set the rate

SKILL: FEEDING THROUGH A JEJUNOSTOMY TUBE

Please see page 17 and follow steps for Skills 1, 2, and 3 (and 4 if you have a low-profile tube)

Feedings through the jejunum part of the small intestine bypass the stomach. This decreases the risk of food refluxing back into the esophagus and the risk of aspiration or liquid going into the lungs. Because the stomach normally helps to break down food, a special type of jejunal feeding may be required.

- ▶ Follow the same procedure for feeding with a pump. The feeding will go into the port labeled “Jejunal.” You will also see a port labeled “Gastro.” This is usually used for giving medication or venting the stomach.
- ▶ Jejunal feedings may be started slowly and given in small amounts to be increased as tolerated.
- ▶ If you see feeding return through the gastric port of a GJ-tube while venting, contact your health care provider immediately. This may mean that the GJ-tube has moved or migrated from its placement.

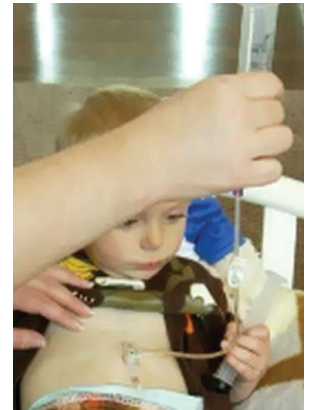


Low-profile button

SKILL: VENTING OR BURPING

You or a family member may experience bloating before, during, or after feeding. If this occurs, gas in the stomach and intestinal tract needs to be relieved.

- ▶ Wash your hands with soap and water.
- ▶ You can vent and release gas by attaching an open syringe or extension feed set to the G-tube. Raise the tube and syringe about 6 inches above the stomach so stomach contents can pass up and down the syringe but won't spill over.
- ▶ Coughing with the safety cap open also releases air from the stomach.
- ▶ When a stoma is new and not matured, a full stomach can sometimes result in leakage around the tube. Leakage around the stoma can lead to skin breakdown around the site. Talk with your care provider about adjusting the rate of the feeding—you might have to give it more slowly.
- ▶ If you have a fundoplication procedure— in which the upper part of the stomach is wrapped around the lower end of the esophagus and is stitched in place—the feeding may need to go in more slowly or allow for continuous venting of gas.



Venting with a syringe

Giving Medication SKILL

Watch and Review

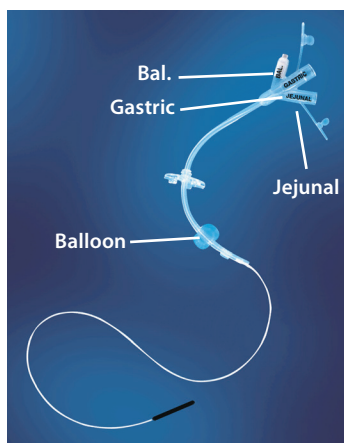
- ▶ Watch the DVD, then just follow each of the steps.



Overview

- ▶ You should be given a list of medications with directions from your doctor. The doctor and a pharmacist should check to see if any current medications interact with the tube feedings.
- ▶ Ask your doctor to prescribe medications in a liquid form.
- ▶ Ask if pills can be crushed or capsules opened. A pill crusher or a small plastic container with a twist tip that crushes pills into very small powder or pieces may be needed. Some medications are not meant to be crushed, especially those marked "SR" or "sustained release." Do not take any medications without a doctor's consent.

- ▶ Typically, crushed medication is not given through the jejunostomy port of a GJ-tube; it may be given through the gastric port of the tube. Ask your health care provider for instructions.

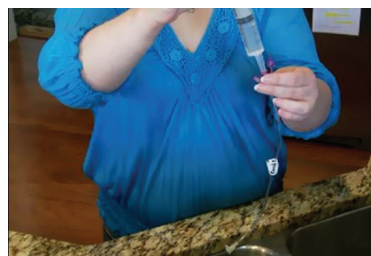


- ▶ All medications should be mixed with water so that they are easier to insert into the feeding tube.
- ▶ Do not mix medications with the tube feeding, breast milk, or with each other.
- ▶ If more than one medication is needed, always **flush the feeding tube with water between each medication.**

- ▶ **Never add medications to the feeding bag.**

- ▶ When using a pump feeding, you will need to shut off the feeding to give medication. Some feedings will interfere with a medication's effect.

- ▶ Flush after each medication with the recommended amount of water and restart the feeding.



Flushing after medication

Giving Medication SKILL

SKILL: GATHER YOUR SUPPLIES

1. Medication
2. Feeding syringe
3. Bottle of water for flushing tubing after medications
4. Feeding tube extension/feed set (if needed)
5. Clamp (if needed)

SKILL: GIVING THE MEDICATION

- ▶ Wash your hands with soap and water.
- ▶ Make sure you or your child or infant is in an upright position, just as for feeding.
- ▶ For pump feedings, stop the feeding and open the G-tube button or feeding tube port.
- ▶ Attach the feeding extension set to the G-button if you are using one:



- Hold the G-button firmly with two fingers, and hold the extension set with your other hand.
- Line up the black lines on the button and tubing.
- Hold the tubing up while attaching to the button to prevent backup of stomach contents into the tubing.
- Gently but firmly push the tubing into the button, and turn clockwise in the direction of the arrow to lock it into place.



- ▶ Draw up the water in the syringe. Attach the syringe to the feeding extension or feeding port of a long gastrostomy or jejunostomy tube.
- ▶ Unclamp the tubing and flush with the water in the syringe.
- ▶ Reclamp the tubing and remove the syringe.

- ▶ Pour the required dose of the medication into a medicine cup.
- ▶ Draw the accurate dose of medication into a syringe. Use a second medicine cup to mix the medication with water. (Mix medications with 30 mL for an adult and 5 to 10 mL for a child, unless fluids are restricted).



Medicine cups

- ▶ Draw the medication mixed with water back up into the syringe.
- ▶ Most feeding tubes or extension sets have a feeding port and a medication port. Close the feeding port and open the medication port for delivering medications. Make sure you close the medication port when using the feeding port.



Drawing up medication

- ▶ Attach the syringe to the feeding extension set or feeding tube, unclamp the tube, and deliver the medication. Clamp the tube and remove the syringe.



Feeding and medication ports

- ▶ Using the same steps, flush with water after each medication. If you have a G-button, remove the feeding extension set and close the safety cap at the end of the button after medication delivery.
- ▶ Pull the syringe apart, and wash it and the extension set with warm, soapy water; rinse well and let them air dry.
- ▶ Record the date and time the medication was given.

Replacing the Gastrostomy Tube **SKILL**

Watch and Review

- ▶ Watch the DVD, then just follow each of the steps.

Overview

It is possible for the gastrostomy tube to accidentally come out. **DO NOT PANIC.** The site may bleed a little, stomach contents may leak out of the stoma, and there may be some pain or discomfort. Cover the stoma with a clean, dry cloth.

- ▶ A replacement tube should be reinserted within 3 hours. If nothing is placed back in the tract, it will close over and may require an operation to replace the gastrostomy.
- ▶ If the gastrostomy/G-tube has been in place for less than 2 months, it will have to be replaced by a medical professional. This is to make sure the tube has entered the correct location.
- ▶ If the gastrostomy has been in place for more than 2 months, replacement can be safely attempted if the caregiver has been trained to do so.
- ▶ Do not attempt to change your device without proper training from your health care provider.

SKILL: GATHER YOUR SUPPLIES

1. The tube that has fallen out (if it is a balloon-type tube) or a replacement gastrostomy tube
2. A 5 or 10 mL syringe
3. A feeding or irrigation syringe
4. A cup of water or surgical lubricant for moistening the gastrostomy tube
5. pH paper

SKILL: REPLACE THE GASTROSTOMY TUBE

Preparing the patient

- ▶ Wash your hands with soap and water. The procedure does not have to be sterile because the stoma tract is not a sterile body cavity.
- ▶ Replacement of the tube may be painful. Your doctor may have prescribed pain medication or topical gel for around the stoma site. Placing some topical gel that provides anesthesia around the G-tube site may also be helpful.

Tube replacement

- ▶ Before re-inserting a tube, inspect the new device and balloon at the end of the tube for easy inflation by injecting the recommended amount of water for the balloon device size with a small syringe (usually 5 or 10 mL). There are two ports on the tube: one is for feeding and the other is for inflating the balloon.
- ▶ Withdraw the water back out to deflate the balloon. With the balloon deflated, apply water-based lubricant to the balloon part of the tube.
- ▶ Deflate the balloon from the current tube by withdrawing the water from the balloon and remove the tube.
- ▶ Insert the lubricated end of the new gastrostomy tube smoothly into the stoma tract. It should be a snug fit. But if it does not pass smoothly, it may be at a wrong angle and lead to the wrong cavity.
- ▶ Once the device is through the stoma site, inflate the balloon by inserting a syringe into the balloon valve with the recommended amount of water.
- ▶ Gently pull back on the tube to make sure it is firmly in place.



Testing the balloon before inserting in the tube



Lubricating the tube



Replacing a low-profile gastrostomy tube

- ▶ You may check the tube position if directed by your physician. Attach a syringe and extension/feed set to the feeding port, and pull back on the syringe to see if any stomach contents come back through the tube.
- ▶ Check the fluid with the pH paper. Stomach contents should look clear to yellow and slightly creamy and have a pH between 1 and 5.
- ▶ If the contents are green or clear and the pH is 6 to 8, the tube may be in the small intestine.



Testing gastric pH

If there is any doubt about the placement of the tube, do not give the feeding. Call the nurse or physician for instructions.

SKILL: JEJUNOSTOMY TUBE REINSERTION

Patients and families do not reinsert the jejunostomy tube themselves. It should be done by a medical professional who will take X-ray photos to show that the tube is inserted at the right point in the small intestine before feedings are begun. Contact your physician or staff for advice on what to do if the jejunostomy tube needs to be replaced. Your doctor may have you insert a soft rubber tube or gastrostomy tube to keep the stoma site open until the jejunostomy can be replaced. Do not feed through the soft tube unless your doctor directs you to do so.



Problem Solving

There are common problems that can occur with any feeding tube. Knowing what to watch out for will help you quickly manage these problems with your health care team.

Aspiration

This is the highest risk for patients with tube feedings. The tube may be misplaced, and the feeding has been inhaled into the lungs.

THE SIGNS AND SYMPTOMS INCLUDE THE FOLLOWING:

- ▶ Frequent coughing, wheezing, rapid breathing, and bluish color of the skin caused by lack of oxygen
- ▶ Chest pain
- ▶ Cough with foul-smelling sputum, pus, or blood
- ▶ Fatigue or feeling of sleepiness
- ▶ Shortness of breath
- ▶ Excessive sweating
- ▶ Swallowing difficulty

WHAT YOU CAN DO

- ▶ **DO NOT PANIC.**
- ▶ Stop the feeding immediately.
- ▶ Maintain an upright sitting position or elevate the head of the bed at least 45 degrees.

Call 911 for professional medical assistance, as this can be a life threatening emergency.

G-Tube or J-Tube Moves from Its Original Placement

The tube has moved from its marked position.

WHAT YOU CAN DO

- ▶ Shut off any feedings that are in progress.
- ▶ Check the marker or tape to verify if the tube has moved and how much.
- ▶ Check the placement. Try to withdraw fluid from the tube with the catheter-tip syringe. A tight sucking feeling with little or no fluid returned may indicate that the tube is in the small intestine.
- ▶ A large amount of fluids may indicate that a tube that should be in the small intestine has moved back up into the stomach.
- ▶ Check the color and pH of the contents returned. A pH of less than 5 with clear to light green contents should indicate that a gastrostomy tube is correctly placed in the stomach. A pH greater than 6 can indicate that the tube may be in the small intestine if secretions are yellow.
- ▶ Call your provider for directions on how to proceed.

G-Tube or J-Tube Pulled Out

Tube is obviously not inserted in its site.

WHAT YOU CAN DO

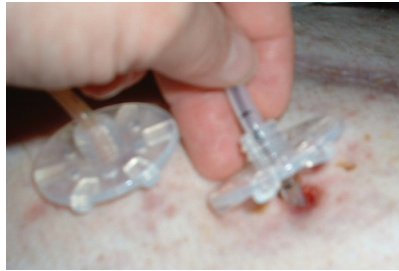
- ▶ **DO NOT PANIC.**
- ▶ Shut off any feedings that are in progress.
- ▶ For a G-tube: Cover the stoma with a small, clean dressing and tape. The G-tube needs to be replaced as soon as possible (within 1 to 3 hours) so that the tract will not close.
- ▶ Replace a gastrostomy tube if you have a backup tube and have been properly trained by your health care provider.

J-tube: Do not attempt to reinsert. Notify your doctor's office if the J-tube is out of place or removed.

Irritation of Skin at the Stoma Site

SIGN AND SYMPTOMS:

- ▶ Irritated or red skin around the tube's stoma site
- ▶ Soreness
- ▶ Bad odor
- ▶ Infection



WHAT YOU CAN DO

- ▶ Check the feeding tube marker or tape to make sure it is in the correct position. There should not be much leakage once the stoma site has healed in 2 to 3 days.
- ▶ Wash the skin gently with soap and water. Use a Q-tips cotton swab or gauze to swab around and dry the site.
- ▶ Apply skin barrier powder if available and a dry sterile dressing if necessary.
- ▶ Rotate the bolster of a G-tube daily to prevent skin breakdown.

Call the doctor's office if your skin does not improve or worsens.



Nausea or Vomiting Caused by Certain Medications, the Tube Moving in the Stomach or Blocking the Stomach Outlet, or Tube Feeding Intolerance

WHAT YOU CAN DO

- ▶ Stop the feedings if continuous.
- ▶ Check the feeding tube for residual volume with the feeding syringe.
- ▶ Check the placement of the tube and readjust if necessary.
- ▶ Check to see if the abdomen is firm or painful to the touch.
- ▶ Watch for signs of dehydration such as dry mouth, thirst, or decreased urine.

Call the doctor's office if there is a large residual volume after 2 feedings, if the abdomen is firm or swollen, or if there are signs of dehydration.

Diarrhea Caused by Feeding Intolerance, Too Much Water, Medication, a Virus, or Infection

WHAT YOU CAN DO

- ▶ Watch for signs of dehydration such as dry mouth, thirst, or decreased urine output.
- ▶ Continue to feed, watching and recording the amounts closely.

If diarrhea lasts more than 2 days, call your doctor's office.

Constipation: Infrequent and/or Hard Stools, Bloating, Gas, Cramping, or Pain

THIS MAY BE CAUSED BY:

- ▶ Inadequate fluid intake or fiber
- ▶ Certain medications
- ▶ A bowel obstruction
- ▶ Inactivity

WHAT YOU CAN DO

- ▶ Increase fluids.
- ▶ Increase activities like walking.

Call your doctor if you have not had a bowel movement in 2 days, you have abdominal swelling or cramping, or you begin vomiting. Your doctor may need to review your medications, give you a stool softener or add fiber to your feedings, or change the amount of your daily fluids. Tests may be necessary if your bowels are blocked or obstructed.

Granulation Tissue Due to Friction, Chafing, or Dragging Downwards

SIGNS AND SYMPTOMS:

- ▶ Pink to red overgrown tissue or skin at the stoma site
- ▶ Bleeding



WHAT YOU CAN DO:

- ▶ Practice good hygiene to the site.
- ▶ Handle the tube gently.
- ▶ A poorly secured tube can also increase granulation tissue and lead to infection, bleeding, or an increase in drainage and odor.
- ▶ For low-profile devices, have the stoma length remeasured by your physician.

Contact the doctor's office to provide local care to the site.

Clogged Feeding Tube

The feeding tube can be clogged due to feeding sediment in the tube, causing slow delivery rates of feeding or inability to flush the tube or deliver medications.

WHAT YOU CAN DO

- ▶ Try to slowly flush the tube with warm water using a 10 mL syringe and repeat every 10–15 minutes until the clog is cleared.

Do NOT attempt to clear blockage by inserting an object. This could result in damage to the tube or injury to the GI tract. Do NOT use cranberry juice, meat tenderizer, or carbonated beverages (for example, cola) to unclog tube. These products can make the clog worse. Notify the doctor's office if the tube remains clogged.

Tube Leakage

Your feeding tube can have leakage due to the amount of feeding, weight gain or loss, enlarged stoma, underinflated balloon or loose bumper, incorrect tube position, feeding intolerance, or constipation. Incorrect button length for the stoma can also be a cause.

SIGNS AND SYMPTOMS:

- ▶ Fluid, feeding, or blood noted at the tubing insertion site
- ▶ Need for a dressing more than 2 days after tube insertion

WHAT CAN YOU DO

- ▶ Most leakage is due to intolerance of the rate and the amount of feeding. Do not overinflate the balloon if there is leaking. Call the doctor's office to determine if the feeding should be slowed down or the amount adjusted.

If there is another cause:

- ▶ Determine the reason for weight change and treat.
- ▶ Deflate the balloon and reinflate using the correct amount of water.
- ▶ Treat constipation by increasing activity and providing adequate feedings and fluids.
- ▶ Adjust medications if necessary.
- ▶ For low-profile buttons, have the stoma length remeasured and confirmed by your physician.

Buried Bumper Syndrome

Buried bumper syndrome can occur due to the internal bumper holding the tube too tightly against the abdominal wall as well as weight gain or loss.

SIGNS AND SYMPTOMS:

- ▶ Ulceration
- ▶ Leakage
- ▶ Bleeding
- ▶ Infection
- ▶ Pain with resistance to feeding

WHAT YOU CAN DO

Call the doctor's office to confirm the condition and obtain medical advice or to possibly be remeasured.

Medical Emergencies

Contact your surgeon or nurse immediately or go to the nearest emergency room if you have the following issues:

- ▶ Choking or difficulty breathing
- ▶ The feeding tube has come out and you have not been trained or cannot replace it
- ▶ Bleeding, tears, or change in color around the G-tube stoma
- ▶ Vomiting or diarrhea that continues for more than 2 days
- ▶ Unusual weakness, fever, chills or other symptoms
- ▶ Redness, pain, or drainage from the tube insertion site
- ▶ Temperature of 101°F or 38.3°C for more than 2 to 3 days



Home Management and Other Resources

Overview

Family and good friends can all help you adjust to receiving tube feedings. It is normal to feel tired of receiving tube feedings from time to time. The process affects every family in a different way, but it helps to talk through everyone's feelings and contact a professional who can help if necessary. There are resources in the back of this booklet where you can find information and professionals to help. Below are some common areas to think about when someone is receiving tube feedings in the home.

Keeping Things Normal

Try to live your life as normally as you can. You or your family member should try to remain as active as possible. Socializing will help you maintain a positive outlook. Parents may feel a need to overprotect or treat a child who has unique physical needs differently, which may cause them to become dependent. Your child is only "different" in the way he or she feels. Your child will be happier if rules stay the same and life carries on much the same as before.

DAILY CARE

Look at the feeding tube site daily for leakage, bleeding, or skin problems. The site should be kept clean with soap and water and the skin around the opening dried gently. After the initial insertion of the tube, the opening should be healed around the tubing so that there is little leaking and no need for a dressing. If there is leakage that requires a daily dressing or any



other problems with the skin and healing, report them to the doctor if they do not improve with regular feedings and skin care.

Daily care of the feeding tube includes flushing the feeding tube after each feeding or after medications are given. The flush is used to clear the tubing of formula or medicine. Recommended flushes are 5 mL to 10 mL of water for infants and 15 mL to 30 mL of water for children and adults.

BATHING AND DRESSING

- ▶ Until the stoma site has healed, it should be cleaned with soap and water and a dry sterile dressing applied. After the site has healed, you may shower and bathe as normal.
- ▶ Clamp the G-tube before bathing.
- ▶ In low-profile devices, make sure the port covers are securely closed.
- ▶ Avoid overly warm water that can irritate tender skin at the tube site.
- ▶ Use only mild soaps and soft washcloths.
- ▶ Dry completely around the stoma, as any dampness can breed bacteria and develop into an infection.
- ▶ Children may chew the tubing or play with it. If a child is allowed to pull or tug at the tubing, they may be able to pull it out. You can prevent this by:
 - Dressing the child in a one-piece undershirt with the tube tucked inside.
 - Wrapping a piece of tape or rubber band around the tubing and pinning the tape/rubber band to your child's diaper or undershirt.
 - Placing the end of the tubing under the tabs of a disposable diaper.
 - Dressing your child in a tube top or wrapping an elastic bandage around the waist, securing the tubing underneath.

ACTIVITY

The health care provider will tell you when you or your family member can resume your normal activities. You will usually be told to avoid lifting for 6 weeks after an open procedure, but there are fewer restrictions after PEG tube placement.

There should be no restrictions for a child with a gastrostomy tube. A young child should be able to crawl and should be able to sleep on his or her stomach. Taking a bath or swimming in a pool is also permitted. Be sure to dry the skin around the tubing or the button after swimming or bathing. If you are unsure of a planned activity, ask your doctor or nurse.

SCHOOL AND WORK

Discuss the type of work you do with your doctor and ask how long you will need to be away from your job depending on your procedure. Your child should be able to return to school as normal. Your community team, social worker, or the special-needs coordinator at the school will be able to advise you further about this. The staff at the school can be taught G-tube maintenance for emergency situations and possibly assist with feedings. If you or your child particularly enjoys contact sports, ask the medical team for advice.

MEALTIMES

Try to keep family mealtimes as normal as possible for socialization purposes. The family member with a feeding tube should be encouraged to join the rest of the family at mealtime, even if he or she is not eating. During tube feedings and for approximately 30 to 45 minutes after the feeding is completed, you or your family member should remain seated upright or lying on your right side if necessary. A young child may use a pacifier while being fed by a gastrostomy tube to help him or her associate sucking with the full and pleasurable sensations of a normal feeding.

VACATION AND TRAVELING

There should be no restrictions for travel; however, if you or your family member has complex needs, discuss travel plans with the doctor and ask him or her to write a letter explaining your medical history. This will help if you need to seek medical advice locally.

When traveling out of town, call your home care company ahead of time to arrange for portable equipment, and keep customer service addresses and phone numbers with you while you are away. You should also carry a letter from your consultant explaining that you are carrying medical equipment because of you or your family member's feeding needs. Contact the airline ahead of time to request any special assistance and to know that security will allow all the supplies you need on board.

Keep your supplies with you in a carry-on bag and remember to take extra supplies in case of loss, breakage, or if you end up staying longer than you planned. Always take a travel kit of emergency supplies with you, including:

- ▶ Extra feeding tube
- ▶ Pump with a rechargeable battery
- ▶ Feeding bag or set
- ▶ Feeding syringe
- ▶ 5 mL to 10 mL syringe
- ▶ Rubber gloves
- ▶ Paper towels
- ▶ Container for tap water
- ▶ C-clamp or rubber band
- ▶ Tape measure
- ▶ Emergency phone numbers



For road trips, check the location of your seat belt to avoid pressure on the tubing and insertion site.

If you are planning a beach holiday, cover the gastrostomy with a large dressing to stop sand from getting into it. Sand can irritate the skin near the stoma site, cause an infection, or damage the device itself.

It is important to stay well hydrated and to flush small amounts of water through the tube whenever possible.

EMOTIONS

You or your family member may feel self-conscious or have anxiety about your feeding tube. Talking to other people may help. You can try contacting the support groups listed in the back of this booklet or contact local resources through your health care provider.

Children may become more demanding, clingy, or revert to earlier behavior such as bed-wetting if they have been hospitalized or away from you for a while. Reentry into the family life and acceptance and participation in the care of a child with a feeding tube should help the child settle back into a normal routine.

BODY IMAGE

You and the rest of your family may feel that much has changed and that everything has to revolve around the feedings for a while. Keeping to your normal routine as much as possible and maintaining the usual mealtimes, rituals and bedtimes may help. Staying as active as possible and allowing good friends to know what you have experienced will help you gain acceptance of this change. There are support groups, references, and websites at the back of this book that will offer the advice of others who are willing to share their experience and answers to some of the questions you and your family may have.



Your Discharge Plan

My surgeon is _____ Phone number _____

My home health nurse is _____ Phone number _____

My feeding tube care supplies are _____

Feeding tube type and model # _____ / _____

Tube feeding formula _____

Type of feeding:

- Gravity drip Bolus syringe feeding Feeding pump

Number of daily feedings _____

Feeding schedule _____ / _____ / _____ / _____

Amount of formula at feeding _____

Amount of flush after feeding and medication _____

Vent or burp G-tube prior to each feeding?

Check residuals prior to each feeding?

Have your supplies ordered before you leave the hospital. It may take 1 to 2 days for them to arrive. Leave the hospital with several days of supplies in case there is a delay.

Supplies may be ordered through a local medical equipment store or pharmacy or a national internet order company. Check with your insurance company to see if they have preferred providers. You may need a prescription for your feeding tube supplies. If you have home health care, they may be assigned to order your supplies. Check with your hospital discharge planner for your specific details for the coverage of the supplies you need.

Notes:

Feeding Tube Resources for Nutrition and Home Care

FOUNDATION ORGANIZATION

American College of Surgeons

www.surgicalpatienteducation.org

800-621-4111

Surgical Patient Education Program

COLLABORATIVE ORGANIZATIONS

American Head and Neck Society (AHNS)

www.ahns.info

American Laryngological Association (ALA)

www.alahns.org

American Pediatric Surgical Nurses Association (APSNA)

www.apsna.org

855-984-1609

American Pediatric Surgical Association (APSA)

eapsa@eapsa.org

847-480-9576

American Society of Parenteral and Enteral Nutrition (ASPEN)

www.nutritioncare.org

800-727-4567

Guidelines for enteral nutrition therapy and home nutrition support

Association of Gastrointestinal Motility Disorders, Inc. (AGMD)

www.agmd-gimotility.org

781-275-1300

Focuses on education, advocacy, outreach, research, and support

Commission on Cancer (CoC)

www.facs.org/cancer

Feeding Tube Awareness Foundation

www.feedingtubeawareness.com

Wound, Ostomy and Continence Nurses Society (WOCN®)

www.wocn.org

888-224-9626

Check Your Knowledge

QUESTION 1

Which of these statements about enteral feeding tubes is TRUE?

- A. A jejunostomy tube feeds nutrition directly into the stomach.
- B. A gastric button lies flat on the surface of the abdomen.
- C. A percutaneous gastrostomy tube can be reinserted if necessary at home.
- D. A gastrostomy tube feeds nutrition directly into the small intestine.

QUESTION 2

What type of syringe should you use when flushing and feeding through the tube?

- A. A 30 or 60 mL syringe
- B. A 5 mL syringe
- C. A 10 mL syringe
- D. None of the above

QUESTION 3

Which of these statements is NOT TRUE when you are giving tube feedings?

- A. You need to cover and refrigerate all unused open containers or prepared feeding solutions.
- B. Feeding solution from a container can hang for 8 hours.
- C. You should microwave or boil a feeding solution before it is given.
- D. Feeding solution that is mixed with water, powder, or breast milk can be hung for 4 hours.

QUESTION 4

Which of these statements about enteral feedings is TRUE?

- A. An infant, child, or adult needs to remain upright for 10 minutes after the feeding.
- B. When the feeding is finished, just clamp the tube and leave the feeding set in place.
- C. When the feeding is finished, always pour water into the syringe or flush the feeding tube or extension set with the recommended amount of water.
- D. When the feeding is finished, disconnect the feeding set and wash in the dishwasher.

Answers:

Question 1 – B

Question 3 – C

Question 2 – A

Question 4 – C

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The Feeding Tube Home Skills Kit, developed by the American College of Surgeons Division of Education, is made possible in part by the generous support of an education grant from: **Applied Medical Technology, Inc.**