PATIENT & CAREGIVER EDUCATION

Tube Feeding With a Pump

This information will teach you how to use a pump to feed yourself and take your medications through your feeding tube. This includes percutaneous endoscopic gastrostomy (PEG), gastrostomy tubes (GT), nasogastric tubes (NGT), percutaneous endoscopic jejunostomy tubes (PEJ), jejunostomy tubes (JT), nasoduodenal tubes (NDT), and nasojejunal tubes (NJT).

After you have your feeding tube placed, call 212-639-6984 to schedule a follow-up appointment in the nutrition clinic. If you had a jejunostomy tube placed during an esophagectomy, you don’t need to make a follow-up appointment. You will have your jejunostomy tube in for less than 1 month.

About Tube Feeding

A feeding tube will give you nutrients if you aren’t able to get enough through eating and drinking, or if you can’t swallow safely. Nutrients provide energy and help you heal.

Types of tube feeding pumps

You will be using a pump for your tube feedings. There are different kinds of pumps.

- If you will get your tube feedings continuously over 24 hours, you may want to use a portable type of pump (see Figure 1) so that you can do your daily activities while you receive your tube feeding.

- If you will get your tube feedings during part of the day (cycled feeding), you may prefer a pump deliver your feedings at night, while you sleep. In this case, your pump will be mounted on a stand with a hook to hold the bag.

Figure 1. Portable pump
You will decide which pump is best for you after talking with your healthcare team and the home care company that will supply the pump.

Since there are different types of pumps, your home care provider will give you instructions about your pump when the equipment and supplies are delivered to your home. If you have any problems with your pump, call your home care provider.

**Tube Feeding Nutritional Guidelines**

Formula: __________
Cans per day: ____________________ (8 ounces each)
Total calories per day: __________ Calories
Additional water to take per day: __________ milliliter (mL)
Total liquid volume per day: __________ mL
Goal rate: __________ mL

**Tube Flushing Schedule**

- Fill your tube with_______mL of water before and after tube feedings.
- Fill your tube with ______mL of water ______times daily.
- Fill your tube with ______mL of water every________hours while tube feedings are running.
- Fill your tube with ______mL of water before and after medications.

**Tube Feeding Schedule**

Day 1: Start feeding with_______mL per hour over __hours.

Day 2: Increase feeding to ______mL per hour over __hours.

Day 3: Increase feeding to ______mL per hour over __hours.

Day 4: Increase feeding to ______mL per hour over __hours.
If you’re comfortable with the Day 4 feeding amount, continue with that schedule.

- For feeding tubes ending in the stomach (GT, NGT, or PEG), the maximum rate is 140 mL/hr.
  - If you have a long-term GT or PEG, your GI/nutrition team may recommend more than 140 mL/hr.

- For feeding tubes ending in the small intestine (JT, NDT, NJ, or PEJ), the maximum rate is 120 mL/hr.
  - If you have a long-term JT or PEJ, your GI/nutrition team may recommend more than 120 mL/hr.

Your doctor, clinical dietitian nutritionist, or advanced practice provider (APP) will let you know what you need to do.

If you’re admitted to the hospital and need tube feedings, your APP will contact your clinical dietitian nutritionist so you can continue your home tube feeding schedule, if that was working well for you. Bring your button adapter with you to the hospital, if you have one.

**Tube Feeding Position**

Sit up in a chair during your tube feeding. If you’re getting your tube feeding while in bed, use a wedge pillow to prop yourself up to at least 30 to 45 degrees (see Figure 2). You can buy a wedge pillow through websites such as [www.amazon.com](http://www.amazon.com) or at your local surgical supply store.

![Figure 2. Sitting up at a 45-degree angle](image-url)
Tube Feeding Instructions

1. Clean your hands.
   - If you’re using an alcohol-based hand sanitizer, be sure to cover all of your hands with it, rubbing them together until they’re dry.
   - If you’re washing your hands with soap and water, wet your hands, apply soap, rub them together thoroughly for at least 20 seconds, then rinse. Dry your hands with a towel and use that same towel to turn off the faucet.

2. Gather your supplies in a clean and comfortable place. Don’t set up or do your tube feeding in the bathroom. You will need:
   - The amount of formula prescribed by your doctor or APP
   - Your pump attached to an IV pole or in a back pack
   - A pump feeding bag
   - A cup
   - A clean cloth or paper towel
   - A container of water. You can use tap water as long as it’s safe to drink.
   - A 60 mL catheter tip syringe
   - Tape
   - A button adapter, if you have a button (see Figure 3) instead of a tube (see Figure 4).
3. Close the roller clamp on the feeding bag (see Figure 5).

4. Wipe the top of the formula can with a clean cloth or paper towel. Pour the prescribed amount of formula into the feeding bag (see Figure 6). The bag will only hold 1,000 mL (4 cans) at a time. If you run the feeding throughout the day or night, pour in 6 to 8 hours worth of formula per feeding at a time. For example, if your tube feeding rate is 120 mL per hour, then you’re infusing 1 can every 2 hours and you can fill the bag with 3 to 4 cans at a time.
5. If you’re using a nonportable pump, hang the feeding bag on an IV pole. It should be close to a comfortable chair or your bed. If you’re using a portable pump, insert the bag into the pump as instructed and thread the tubing through the pump.

6. Hold the end of the feeding bag tube over a cup. Remove the cap at the end of the tube. Slowly open the roller clamp on the feeding bag tube (see Figure 7). Allow the formula to run through the tubing, then close the clamp. This gets the air out of the tubing. If your feeding bag tubing doesn’t have a roller clamp, use your pump to prime the tubing.
7. Open the plug at the end of your feeding tube (see Figure 8). If you have a button, insert the adapter into it (see Figure 9).

- If you’re using a tube without a clamp, such as one that was placed in Interventional Radiology, pinch the end of the tube to avoid leakage or put the tube in a cup. For the rest of this resource, when we use the words “unclamp” or “reclamp,” you should “unpinch” or “repinch” your feeding tube instead.

8. Draw up the amount of water recommended by your APP or clinical dietitian nutritionist into the catheter tip syringe. This amount is listed in the “Tube Feeding Schedule” section of this resource. Place the syringe into the end of your feeding tube or button adapter.

9. Unclamp your feeding tube (see Figure 10). Flush your feeding tube (see Figure 11).
10. Reclamp your feeding tube. Disconnect the syringe.

11. Connect the end of the feeding bag tubing to your feeding tube or button adapter (see Figure 12). Make sure that the end of the tube is placed firmly. You can put a piece of tape over the connection to keep it from separating.

12. Unclamp your feeding tube.

13. You are now ready to turn on your pump.

   ○ Since there are different types of pumps, your home care provider will give you instructions about your pump. If you have any problems with your
pump, call your home care provider.

14. After your feeding is completed, turn the pump off.

15. Close the roller clamp on the feeding bag tubing and disconnect it from the pump.

16. Fill the syringe with the amount of water recommended by your APP or clinical dietitian nutritionist. The amount of water to use is listed in the “Tube Feeding Schedule” section of this resource. Place the syringe into your feeding tube.

17. Unclamp your feeding tube. Flush your feeding tube.

18. Clamp your feeding tube, remove the button adapter (if you’re using one), and cap your feeding tube.

19. Rinse the feeding bag and syringe with warm water after each feeding. Let your supplies air dry. Use a new feeding bag every 24 hours to prevent infection.

20. Repeat steps 1 to 19 with each feeding.

If you feel too full or are nauseous and vomiting (throwing up), tell your doctor, clinical dietitian nutritionist, or APP.

Important points

- Always reclamp your feeding tube before removing your catheter tip syringe to avoid leakage.

- Move the clamp on your feeding tube to different sections of the tube to avoid permanent kinking of the tube.

- To avoid clogging, always flush your feeding tube with the amount of water recommended by your APP or clinical dietitian nutritionist (usually 30 to 60 mL) before and after:
  - Each feeding.
  - Taking each medication.

- If you aren’t using your feeding tube daily, flush it with 60 mL of water at least once a day.
Taking Medications Through Your Feeding Tube

Ask your doctor or pharmacist if you can take your medications through your feeding tube. Most medications that you normally take by mouth can be taken through your feeding tube.

Medications must be in liquid form or crushed into a powder to prevent your feeding tube from getting clogged. Many medications come in a liquid form. Ask your doctor or pharmacist about liquid forms if you take pills, tablets, or capsules.

Enteric-coated, extended-release (XR), or slow-release (SR) tablets or capsules cannot be given through your feeding tube. If you take any medications in that form, ask your doctor or pharmacist if you can get the medication in a different form.

Do not mix different medications together unless instructed by your doctor or pharmacist. If you’re taking more than 1 medication, ask your doctor or pharmacist if you can take any of them together.

Some medications have to be taken on an empty stomach while others must be taken with food. Talk with your doctor about how to take your medications. Take esomeprazole (Nexium®), lansoprazole (Prevacid®), omeprazole (Prilosec®), and pantoprazole (Protonix®) at least 30 minutes before eating, or taking formula, with or without using a feeding tube.

Write down your medication schedule and keep it readily available. Update it when anything changes. That will make it easy for your family members or caregivers to know your medication schedule. Bring a copy of the schedule to your doctor visits. Your doctor will want to review your medications at each visit.

Always flush your feeding tube with 30 to 60 mL of water before and after you take each medication. This will prevent clogging.

Instructions for taking medications
1. Clean your hands.
   - If you’re washing your hands with soap and water, wet your hands, apply soap, rub them together thoroughly for at least 20 seconds, then rinse. Dry your hands with a clean towel, and use that same towel to turn off the faucet.
   - If you’re using an alcohol-based hand sanitizer, be sure to cover all of your hands with it, rubbing them together until they’re dry.

2. Gather your supplies in a clean and comfortable place. Don’t set up or do your tube feeding in the bathroom. You will need:
   - A small cup or glass
   - A 60 mL catheter tip syringe
   - Medication in liquid or powder form
   - Mortar and pestle or a pill crusher, if needed
   - Water (You can use tap water as long as it’s safe to drink)
   - A spoon
   - Button adapter, if you have a button

3. Flush your feeding tube with 30 to 60 mL of water. Clamp the feeding tube.

4. If your medication is in **liquid form**:
   - Liquid medications may contain sorbitol. Sorbitol can cause bloating, cramping, and diarrhea (loose or watery bowel movements). If you have any of these symptoms, talk with your doctor, APP, or clinical dietitian nutritionist.
   - Pour the medication into a small cup or measure the exact amount using a small measuring spoon. Unless you’re given other instructions, take each liquid medication separately.
   - Add 30 mL (1 ounce) of water to the medication. Draw up the solution using the catheter tip syringe.
   - Go to step 5.
If your medication is in **tablet or pill form:**

- Tablets and pills must be crushed to a fine powder using a mortar and pestle or a pill crusher. You can buy these at your local pharmacy. Crush each medication separately.
- Add 30 mL (1 ounce) of warm water to each medication. Mix it well with the spoon until the medication dissolves.
- Draw the prepared medication into the catheter tip syringe. Remember to draw up each medication separately unless directed otherwise.
- Go to step 5.

If your medication is a **capsule:**

- Capsules must be opened so that the powder inside can dissolve. Open the prescribed number of capsule(s).
- Add 30 mL (1 ounce) of warm water to the medication. Mix it well with the spoon until the medication dissolves.
- Draw the prepared medication into the catheter tip syringe.
- Go to step 5.

5. Attach the syringe to the feeding tube or button adapter, if you’re using one. Unclamp the tube and gently push in the medication. Reclamp the tube.

6. Attach the syringe filled with 30 to 60 mL of water to your feeding tube. Unclamp the tube and flush it thoroughly. Reclamp it before removing the syringe. Repeat the flushing if the water moves too slowly through the tube.

7. Close the plug or reattach the cap at the end of your feeding tube. Remove the button adapter, if you’re using one.

8. After taking the medication(s), pull the syringe apart and wash all of the equipment with warm water. Let your supplies air dry.

**Tracking Symptoms**

**Keep a diary**
Keeping a diary can help you keep track of any problems or questions you may have. It will also help you remember what has been going on at home if you need to come to the hospital. In your diary:

- Write down your weight twice a week.
- If you’re allowed to eat or drink by mouth, keep track of the amount. This will tell you your total nutritional intake.
- Write down any swelling of your face, hands, or feet.
- Write down any changes in your bowel movement (poop), such as in the color, consistency, frequency, or amount.
- Write down any changes in your urine, such as in the color, frequency, or amount.
- Write down any abdominal (belly) discomfort, nausea, vomiting, or other problem that may relate to your feeding. If you’re not sure, write it down and talk with your doctor, APP, or clinical dietitian nutritionist about it.

**Monitoring your fluid balance**

- Weigh yourself 2 times a week at the same time of day and in the same type of clothing. Write it down in your diary.
- Call your doctor, clinical dietitian nutritionist, or APP if you:
  - Gain more than 5 pounds (2.3 kilograms) in 1 week
  - Lose more than 2 pounds (.90 kilograms) in 1 week
  - Have swelling in your feet, legs, hands, or face
  - Feel very thirsty
  - Feel dizzy
  - Have difficulty breathing

**Managing Side Effects**

**Constipation**
Your bowel movements may change while you’re on tube feedings. They may also change if you’re on pain medication. The length of time between bowel movements varies from person to person, but if you’re having fewer bowel movements than what’s normal for you, you may be constipated.

To avoid constipation, talk with your doctor or APP about taking a stool softener such as docusate sodium (Colace®), a mild laxative such as senna (Senokot®), or a fiber supplement such as Metamucil®. If you’re constipated, discuss the following options with your doctor, APP, or clinical dietitian nutritionist:

- Drink liquids if you’re allowed, or take additional liquids through your feeding tube
  - Take 180 mL of water 4 times a day between your feedings through your feeding tube.
  - Take 4 ounces of prune juice every day. If you’re taking the prune juice through your feeding tube, flush your feeding tube with 30 to 60 mL of water before and after taking the juice.

Call your doctor, APP, or clinical dietitian nutritionist if:

- Your bowel movements are hard and dry.
- You don’t have a bowel movement after 2 days.
- You have nausea or vomiting.

**Bloating, nausea, stomach cramps, or diarrhea**

If you have bloating, nausea, stomach cramps, or diarrhea:

- Hold your tube feeding for 2 to 4 hours.
- Restart your tube feeding at half of your usual hourly rate for a 6 to 8 hours.
- If you feel improved, resume your prior tube feeding schedule.

If you don’t feel better, replace your formula with an equal amount of clear liquid, such as broth, Gatorade® or clear juices (white cranberry, white grape, or apple) mixed with water. For example, for each 240 mL of formula you usually take, take
240 mL of clear liquid diluted with 240 mL of water instead of formula. Run your tube feedings at half your usual rate for 8 to 12 hours.

- If you feel better, restart your tube feedings with formula at half of your usual rate for 6 to 8 hours.
- If you continue to feel better, you can continue your usual tube feeding schedule.
- If the bloating, nausea, stomach cramps, or diarrhea last longer than 24 hours or you vomit, call your doctor or APP.

**Ordering Supplies**

Your case manager will check with your insurance company about your insurance coverage. If your insurance covers tube feedings, we will refer you to a home care provider. They will supply you with formula and equipment.

If your insurance doesn’t cover your formula or supplies, you can buy that brand or a generic substitute at a local pharmacy, grocery store, or online. Always reorder formula and equipment when you have only 10 days of supplies at home.

If you’re no longer having tube feedings, your leftover supplies can often be donated. Please contact the Oley Foundation by calling 518-262-5079 or going to their website at [www.oley.org](http://www.oley.org).

**Storing Formula**

- Check the expiration date of your formula. Unopened cans of formula can be stored at room temperature for long periods of time.
- Cover open cans of formula and store them in the refrigerator between feedings. Throw away any open, unused cans of formula after 24 hours.

**When to Call Your Healthcare Provider**

Call your healthcare provider if you:
- See any of the following at your insertion site:
  - Bleeding that soaks a small gauze pad
  - Pus or drainage with a foul smell
  - Redness
  - Swelling
  - Increased pain that doesn’t go away with medication
- Have any of the following changes to your bowel function:
  - Haven’t had a bowel movement in 2 days
  - Have hard and dry bowel movements
  - Have any changes in your bowel movement, such as in the color, consistency, frequency, or amount.
- Have any changes in your urine, such as in the color, frequency, or amount.
- Have changes in your weight, such as:
  - Gain more than 5 pounds (2.3 kilograms) per week
  - Lose more than 2 pounds (.90 kilograms) per week
- Feel too full after feedings
- Have swelling in your abdomen, feet, legs, hands, or face
- Have nausea or vomiting for more than 24 hours
- Have bloating, stomach cramps, or diarrhea for more than 24 hours
- Have a fever of 101° F (38.3° C) or higher
- Have chills
- Are dizzy
- Have trouble breathing
Contact Information

If you have any questions or concerns, call the Nutrition Service office at 212-639-6984 and ask for the outpatient APP. You can reach the office Monday through Friday from 9:00 AM to 5:00 PM. After 5:00 PM, during weekend, and on holidays, please call 212-639-2000 and ask for the gastrointestinal (GI) fellow on call.

Doctor: ____________________
Telephone: 212-639-6984

Home care agency: ____________________
Telephone: ____________________

Home care agency contact person: ____________________
Telephone: ____________________

For more resources, visit www.mskcc.org/pe to search our virtual library.