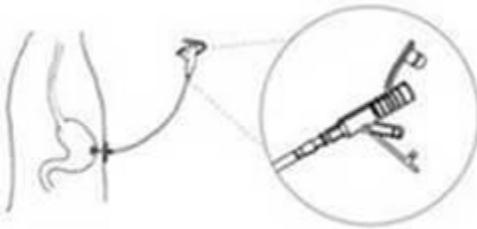


G-TUBE CONSIDERATIONS FOR PROFESSIONALS **WHO COORDINATE CARE OR PROVIDE MEDICAL CARE**

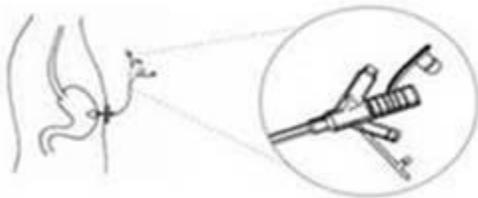
Introduction: Gastrostomy tubes can be life promoting devices or can lead to fatal complications. It is vital to know how they work and how to keep them in the right place. This brief message is to help all individuals using or caring for a person using a feeding gastrostomy tube.

Kinds of feeding tubes:

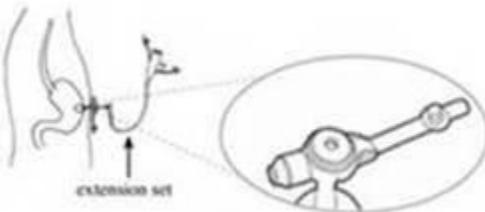
- **Percutaneous endoscopic gastrostomy (PEG):** It has a plastic bumper inside the stomach to secure it. A PEG is usually placed by a surgeon or gastroenterologist working in an operating room.



- **Gastrostomy tube (or "G-tube"):** has a balloon filled with water inside the stomach to secure it. A "Gtube" is usually placed in an operating room but may be replaced by a medical professional in the home or emergency room.



- **Skin-level gastrostomy tube (or "button"):** this device lies flat against the skin and has a balloon inside the stomach. This device is sometimes called a "MIC-KEY," which is a brand name. An adapter tube called an extension set has 2 or 3 ports and is used to give the feedings and medicines.



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Parts:

The many kinds of feeding tubes have the same basic parts:

- **Bumper or balloon** inside the stomach to keep the tube from coming out
- **Stabilization device** against the skin, to keep the feeding tube from moving
- **Numbers or marks** on the feeding tube so you can tell whether the tube has moved
- **Ports** are openings on the outside end of the gastrostomy tube, used to give food or medicines, or to fill the inside balloon with water.

Placement and stabilization:

- **Verification of Placement:** At the time of surgical insertion the inner end of a gastrostomy tube is in the stomach. Methods to help confirm it is still correctly placed include recording the length of tubing visible outside the skin and comparing it to immediate post placement measurement, checking the snugness of the internal bumper against the inner wall of the stomach and whether the tube can be rotated within the stoma tract, and whether there are gastric fluids that can be gently aspirated when the external tube is opened. Using auscultation of air installed is not reliable as a single verification method. A recent study confirmed a reliability as low as 60% using auscultation alone. Using a combination of verification techniques increases the probability the gastrostomy tube end is in the stomach lumen rather than through the stomach wall into the abdominal cavity or inside the abdominal wall layers.
- **It is important to keep the tube stable so that it does not shift.** Movement prevents healing, and can lead to leaking or tube slippage out of the stomach. Some tubes have a stabilizer that rests on the skin to keep the tube from sliding in and out of the opening. If your tube does not have one, a separate stabilizer can be purchased and used.
- Remember to check the length of the G-tube. Adjust it if needed. Check that the stabilizing device is secure, but not too tight against the skin. There should be no pulling on the tube.

Stabilizing Device: an attachment device used to secure the feeding tube. The 'stabilizer' should prevent the tube from migrating (moving in or out from the abdominal wall), prevent a rocking motion of the tube, and prevent tension on the feeding tube which may lead to leakage, skin irritation and/or hyper granulation (overgrowth of tissue). Add-on stabilizers are used if a person does not have a g-tube with an external plastic ring that slides down to rest against the skin.

Below are some examples of Stabilizers.

There are many different kinds and DODD is not endorsing the use of any specific one.



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Initiating Feedings:

- **Confirmation should be sought from the physician**, who inserted the feeding tube, as to when enteral (feeding tube) feedings should be started for those in which this is an initial insertion procedure of a feeding tube or restarted if the procedure was a re-insertion of the feeding tube. This is very important for both an initial insertion procedure of a feeding tube or if the procedure was a reinsertion of the feeding tube.
- Bear in mind that there may be some impaired gastric and colonic function postoperatively; check the abdomen for signs of distention and listen for active bowel sounds before starting fluids or feeding. **If there is abdominal distention or are no bowel sounds present, notify the physician** before using the gastrostomy tube for medication, fluids or feeding.
- With initiation of feeding to a newly inserted feeding tube, **special care and attention must be provided to the insertion site** -close observation for any signs of complications including site infection or peristomal leakage; monitor abdomen for distention/bloating/pain; monitor vital signs; check tube for proper placement; protect the feeding tube and site from any excessive movement or pulling to the feeding tube; stabilize the feeding tube; report immediately any changes in the condition of the individual to the physician – be alert for signs/symptoms of abdominal hemorrhage or bowel perforation. Nurses need to keep accurate documentation of all assessment findings, interventions, and physician notifications.

Potential Complications:

- **Leakage:** Leakage of feeding formula/gastric contents around the PEG site can occur due to poor positioning of the external fixation plate – meaning it is not flush to the skin after insertion. An incorrectly positioned external flange will allow the internal bumper to come away from the stomach wall and leakage can occur. An incorrectly placed external fixation plate - more than 0.5cm from the skin - will allow the tube to move in and out of the stoma and gastric content to leak out of the stoma.
- **Site Infection:** Infection can occur because of poor hygiene when handling the tube; the internal and external flange being too tight has also been associated with higher rates of infection. Infection can present as inflammation around the site, along with either, or both, discharge and pain.
- **Granuloma formation:** A granuloma is a nodule made of granulation tissue at the PEG insertion site -> typically caused by an immune response by the body to a foreign body (the feeding tube). Granulation tissue has a large blood supply and can bleed easily; the tissue appears abnormal, can be painful and is at a higher risk of infection. It can also produce drainage, which can irritate the skin. The cause of granuloma formation can be, and frequently is, incorrect positioning of the external fixation plate, which may allow the tube to move freely. This movement causes friction at the site and initiates the production of granulation tissue. It is vital to check the external fixation plate is in the correct position and that **all caregivers** know that correct position.

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- **Buried Bumper Syndrome:** This syndrome is caused by the external fixation plate being placed too tightly against the patient's skin, which causes the internal bumper to erode into the lining of the stomach. If buried bumper is undetected it can cause complications such as gastric bleeding, perforation of the stomach, peritonitis and even death.
 - The signs of a buried bumper include:
 - A tube that does not move in and out of the stoma;
 - Problems with constant alarming from the pump to say that feed is not being administered or there is an obstruction;
 - Difficulty with flushing the tube or not being able to do so;
 - Leakage around the site when trying to flush the tube.
- **Gastrostomy Peritonitis:** When the internal end of the feeding tube becomes displaced any fluid, medication or feeding given through the tube can cause severe discomfort, abdominal pain, fever, infection and ultimately death. Transient external leakage of the stomach contents from the puncture canal can indicate a likelihood that internal leakage is also occurring. Chemical peritonitis from gastric and intestinal enzymes leaking into the abdomen can cause severe pain and be fatal. Be mindful that some individuals may not be able to verbally express pain so check for other signs of pain (for example, changes in vital signs, irritability, or restlessness). Whenever a person has signs of pain associated with the use of a gastrostomy tube, caregivers must find the cause immediately. If there is any possibility that the tube has been displaced and has caused **leakage into the abdomen or into the abdominal wall, emergency transfer is necessary.** When supportive treatment is started promptly, recovery can occur but peritonitis can quickly overwhelm a person in fragile health.

You should contact the physician if you notice any of these red flag indicators (leakage, pain, fever) that the tube is not functioning or unstable.

References:

"The auscultatory method involves instillation of air into the tube while simultaneously listening with a stethoscope for a sound of air over the epigastric region. **Auscultation alone continues to be used by nurses** currently caring for neonates (Cincinnati Guidelines, 2009), pediatric patients (de Boer, 2009) and adults (Metheny, 2012) **despite its proven unreliability as a single verification method** (Ellett, 2005; Metheny, 1994; Neuman, 1995; Metheny, 1999; Yardley & Donaldson, 2010). Results from a 2006 on-line survey of 1,600 nurses indicated that 65% used the auscultation verification method most of the time (Nursing, 2006). Guidelines published by Cincinnati Children's Hospital (2009) reported only 60-80% reliability with auscultation as a single verification method. An **American Association of Critical Care Nurses (AACN) practice alert in 2007 suggested abandoning the auscultatory method for gastric tube placement verification due to its unreliability.** Thus, pursuit of a reliable, valid, bedside verification method for gastric tube placement has led researchers to investigate methods other than auscultation." https://www.ena.org/docs/default-source/resource-library/practice-resources/cpg/gastrictubecpg7b5530b71c1e49e8b155b6cca1870adc.pdf?sfvrsn=a8e9dd7a_8

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From: PEG TUBE: Dealing with complications website. Symptoms of pain, leakage of some gastric fluid around the PEG tube, and bleeding after PEG insertion are all normal and expected; it is the severity of the symptoms that determine whether medical intervention is needed. It is important for patients and nurses to know who to contact if they are unsure, and to be aware of the difference between what is normal and abnormal. Normally a small amount of leakage can be expected to last for a few days after insertion but this should not be excessive (not requiring a dressing change more than twice a day) and should stop by itself. If the leakage is continuous and there are large volumes along with pain or problems using the tube, medical advice should be sought.

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Nursing Times: PEG tubes: dealing with complications 31 OCTOBER, 2014 Malhi H, Thompson R (2014) PEG tubes: dealing with complications. Nursing Times; 110: 45, 18-21.