



Gastrostomy Tube

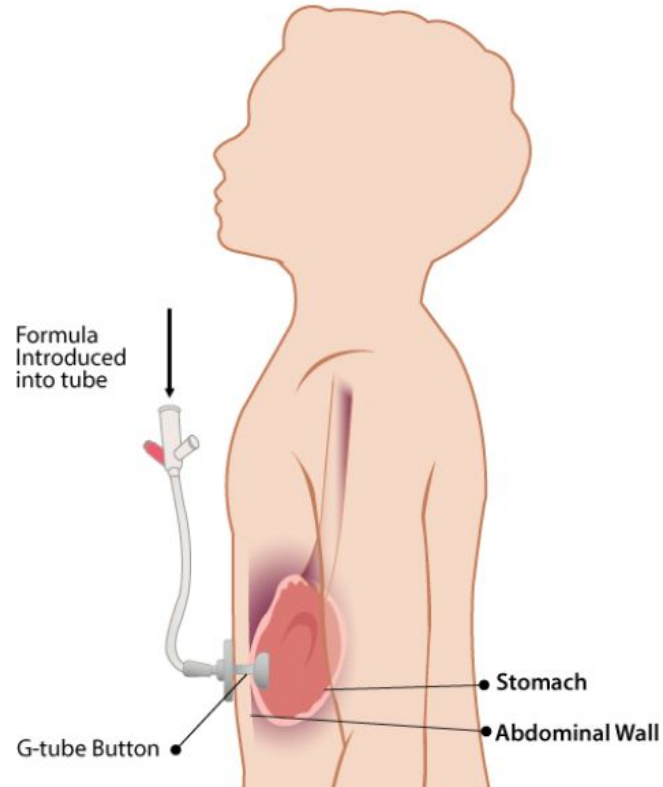
By: Dr. Payam Tehrani, MD

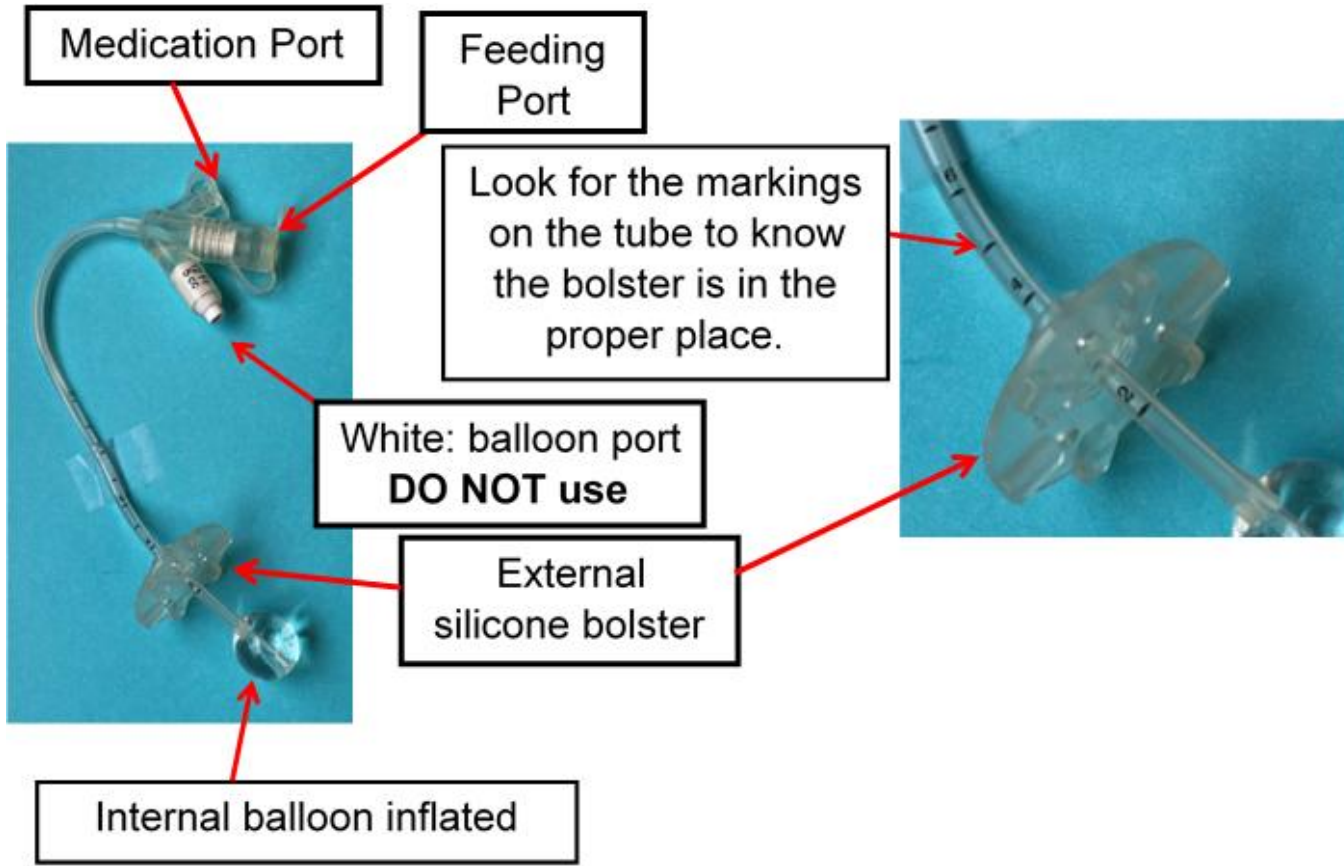
SNF Wound Care

What is a Gastrostomy Tube:

- No disease process improves significantly with starvation, but providing nutrition can be a challenge in patients who cannot or will not eat. Failure of oral enteral supplements, dietary counseling, and appetite stimulation frequently leads to a decision about the use of tube feeding.
- G-tubes are long hollow tubes that are used to provide a route for enteral feeding, hydration, and medication administration in patients who are likely to have prolonged inadequate oral intake.
- By bypassing the oral route, feeding can be given directly into the patient's stomach.

What is a Gastrostomy Tube:





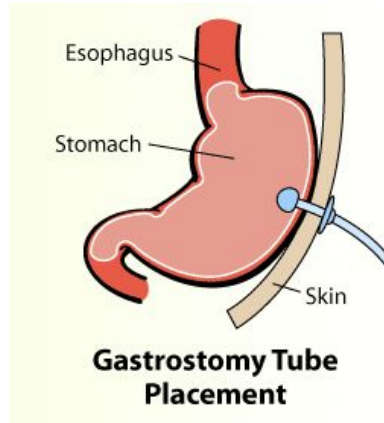
Who requires a G-tube?

Gastrostomy tube placement may be performed for patients with the following conditions (provided that there are no contraindications):

- Patients with dysphagia, provided that the dysphagia has persisted for at least two weeks and that the condition is expected to persist for at least four weeks.
- Head, neck, or esophageal cancer.
- Palliative gastric decompression.
- Patients with anorexia and weight loss due to cancer or other untreatable catabolic illness.
- Patients with altered mental status and dysphagia (including patients with dementia)
- Patients in a persistent vegetative state.
- Patients at high risk for aspiration.

What can be given via the Gastrostomy Tube?

- The G-tube is inserted through the wall of the abdomen directly into the stomach.
- It allows air and fluid to leave the stomach
- G-tube can be used to give drugs and liquids, including liquid food, to the patient.
 - Giving food through a gastrostomy tube is a type of enteral nutrition.
- Liquid, such as formula, fluids, and medications that are dissolved can be given via the G-tube



What should NOT go into the G-Tube

- Bulking agents (eg, [psyllium](#)) and resins (eg, [cholestyramine](#)) should **never** be placed through the gastrostomy tube.
- Whole pills should **not** be given through the gastrostomy tube.



Patients and caregivers should be educated on the importance of flushing 15 to 30 mL lukewarm water through the gastrostomy tube after all medication and enteral formula delivery.

Clogged G-tube

In the event of a gastrostomy tube obstruction:

1) Flush the tube using a 60 mL syringe

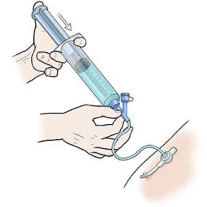
- The best irrigant is warm water, which is superior to other liquids such as juices or colas.
- Pancreatic enzymes dissolved in a bicarbonate solution that are left to dwell within the gastrostomy tube can also be effective.

2) After 2 - 3 minutes, the enzymes are flushed out with water

- One option is to use pancrelipase crushed with a 650 mg bicarbonate tablet mixed with warm water in a 10 mL syringe.

If this technique fails, the g-tube can be cleared with an endoscopic cytology brush, a dedicated gastrostomy tube brush.

If all else fails, call 833.Dr Wound for immediate tube replacement.



Gastrostomy Tube Care

There are 3 major considerations with regard to routine g-tube care:

1. Ensure that the external bolster is positioned properly to avoid compression of the tissues between the internal and external bolsters
2. Maintain a clean gastrostomy site
3. Flush the tube to prevent clogging

Clogging — One of the most common problems with gastrostomy tubes is tube dysfunction secondary to clogging from medications or tube feeds. All medications should be delivered in liquid form (if available) or dissolved in water or an appropriate liquid substance. For medications that cannot be crushed, alternatives that can be delivered via intravenous, intramuscular, subcutaneous, intranasal, or rectal routes should be sought. The prescribing clinician or a clinical pharmacist should be consulted if there are questions about giving specific medications (eg, finding alternatives to medications that cannot be crushed).

To prevent inadvertent gastrostomy tube removal, external tubing should be secured so that it is not accidentally pulled out (eg, as may happen with a patient with delirium or dementia).

Gastrostomy Tube Complications

- Complications of gastrostomy tube placement may be minor (wound infection, minor bleeding) or major (necrotizing fasciitis, colocutaneous fistula). Most complications are minor.
- Most studies have suggested that complications are more likely to occur in older adults with comorbid illnesses, particularly those with an infectious process or who have a history of aspiration.
- Complications include:
 - Minor: **Dislodgement**, peristomal wound leakage, and PEG wound infection, hematoma development
 - Major: Gastric perforation, gastric bleeding.

G-Tube Infections

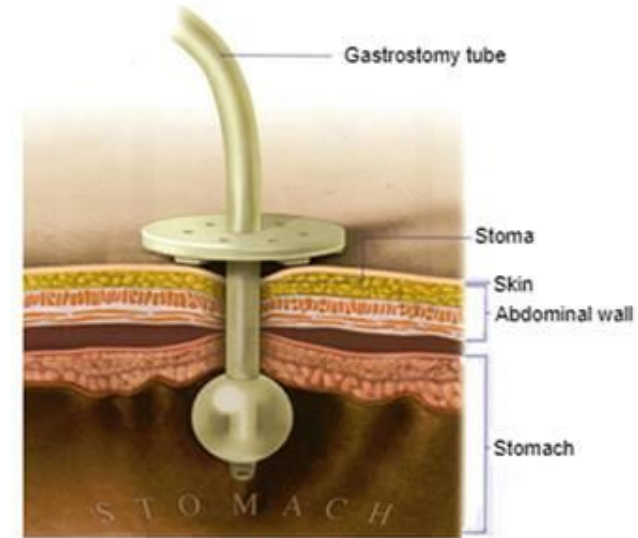
- Signs of a wound infection include: increased erythema, tenderness, and a purulent exudate
- Most infections will respond to a first-generation cephalosporin or a quinolone (levaquin). Methicillin-resistant *Staphylococcus aureus* (MRSA) has emerged as an important cause of gastrostomy-site infections in some centers and may require different antibiotic treatment.
- Fungal-related gastrostomy infectious complications occur, although much less commonly than bacterial infections. These include fungal peristomal cellulitis, candidal peritonitis, and intra-abdominal abscesses
- In patients with wound infections, culturing the site is generally not helpful. If the infection responds to antibiotics, the tube generally does not need to be removed. However, if signs of peritonitis (rebound tenderness) or necrotizing fasciitis (worsening edema and erythema, development of bullae) develop, the tube should be removed and additional therapy instituted.
- Prophylactic antibiotics are not recommended. If there is no signs of infection, don't start antibiotics.

G-Tube Infections



G-Tube Bumper/Bolster

- Patients who had their gastrostomy tube external bolster set directly against the abdominal wall were more likely to develop wound infection, peristomal drainage, and fasciitis compared with patients whose external gastrostomy tube bolster was left 3 cm from the abdominal wall.
- It was hypothesized that the distant placement of the external bumper prevented compression of the tissue in the gastrostomy tract, which in turn prevented wound breakdown.
- It is important to allow the external bolster of the gastrostomy tube to "free-float" 1 to 2 cm from the abdominal wall.
- Other complications include pressure injury from the bolster.



Peristomal Leakage

- Peristomal leakage usually occurs within the first few days after gastrostomy tube placement, though it may also be seen in patients with a mature gastrostomy tract.
- Treatment includes:
 - Management of comorbidities, such as malnutrition and hyperglycemia
 - Loosening of the external bolster
 - Local measures to address skin breakdown (such as powdered absorbing agents or a skin protectant such as barrier cream)
- Peristomal leakage is more likely to occur in malnourished patients and those with diabetes mellitus who may have poor tissue healing and are prone to wound breakdown. In addition, placement of the external bolster of the gastrostomy tube too tightly against the external abdominal wall may lead to poor tissue blood flow, wound breakdown, and peristomal leakage.



Peristomal Leakage

What is Diabetic Gastroparesis?

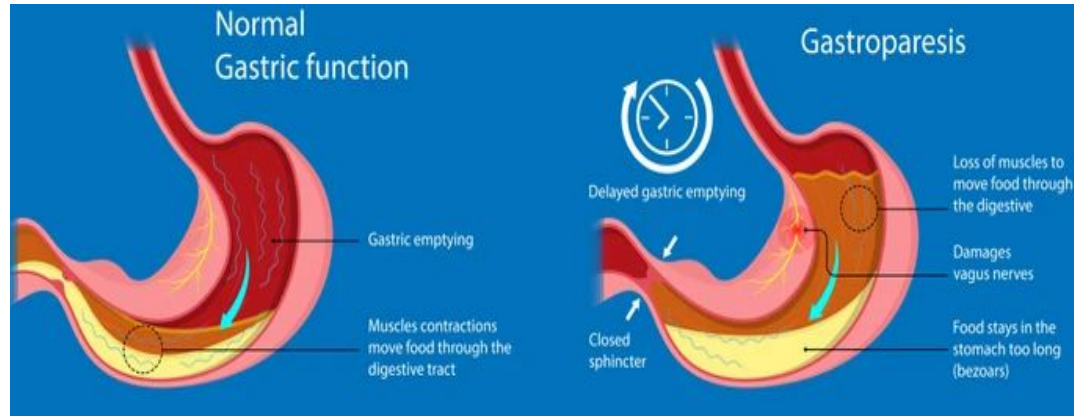
Patients with Diabetes may have Diabetic Gastroparesis. Over time, diabetes can affect many parts of your body and may damage nerves.

One of those is the vagus nerve, which controls how quickly your stomach empties. The vagus nerve contracts the stomach, pushing food distal into the intestines.

What happens if the stomach does not contract?

When this vagus nerve is damaged, **your digestion slows down, and food stays in the stomach longer than it should.** This is a condition called **gastroparesis**. Stomach is paralyzed. Stomach doesn't contract; hence, feeding empties from stomach into intestines very very very very slowly.

When we feed patients at 65 ml/hr of tube feeding, the feeding doesn't go down since the vagus nerve is damaged from diabetes (neuropathy) .



Peristomal Leakage

So what show we do when patients have peristomal leakage?

First, check to see if the patient is Diabetic!

Placement of a larger size gastrostomy tube through the same gastrostomy tube tract will **not** solve the problem. Once the gastrostomy tube tract has started to leak, placing larger gastrostomy tubes through the same tract will serve only to further distend and distort the tract and will not promote tissue growth or healing.

If we place a larger tube to prevent peristomal leakage and continue feeding at a high rate, it may cause aspiration pneumonia.



Hypergranulation



Gastrostomy tube sites may also develop complications of hypergranulation tissue.

Hypergranulation tissue may be treated by the use of silver nitrate ablation. In addition, hypertonic saline or sprinkled salt to create a hypertonic environment, and steroid creams have also been used.

Try sprinkling salt on hypergranulation tissue!

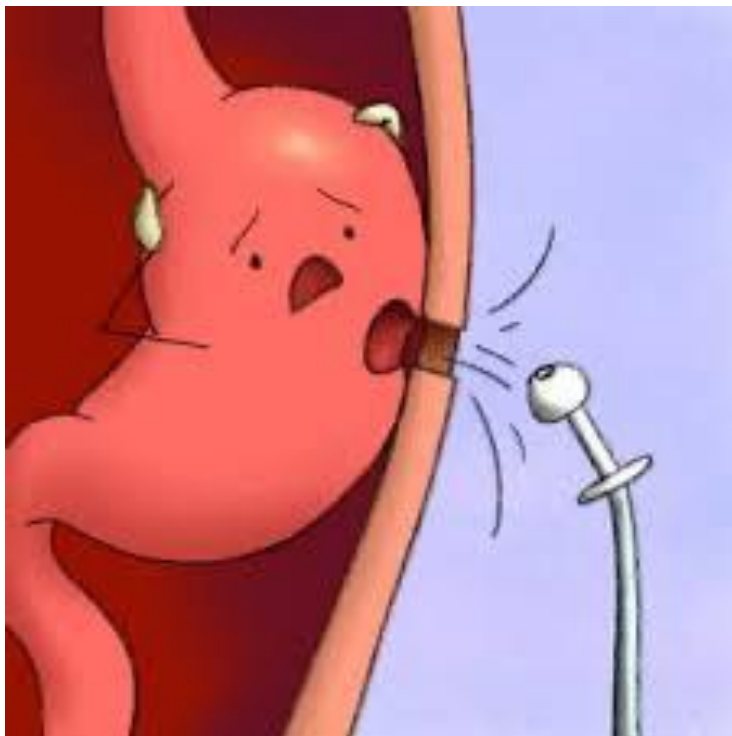


Dislodged G-tubes

- Gastrostomy tubes may be inadvertently removed if traction is placed on the tube.
- Inadvertent g-tube removal is common, usually occurring in combative or confused patients who pull on the tube.
- Many g-tubes are designed to be externally removed with 10 to 14 lbs of external pull pressure.
- If the gastrostomy tract has had time to mature (eg, is at least 4 weeks old), a replacement tube or a Foley catheter may be placed through the gastrostomy tract.
- The tract will begin closing within 24 hours (in some cases within 4 to 8 hours), so placement of a replacement tube should **not** be delayed!

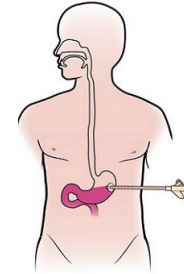
*****Remember to inflate the replacement foley... or else?**

Gastrostomy Tube Dislodgement



G-Tube Placement Confirmation

Option 1: Check for gastric residual and pH for acidity.



Option 2: KUB with contrast to confirm placement.

If there is **NO** gastric residual, KUB with contrast **MUST** be obtained.





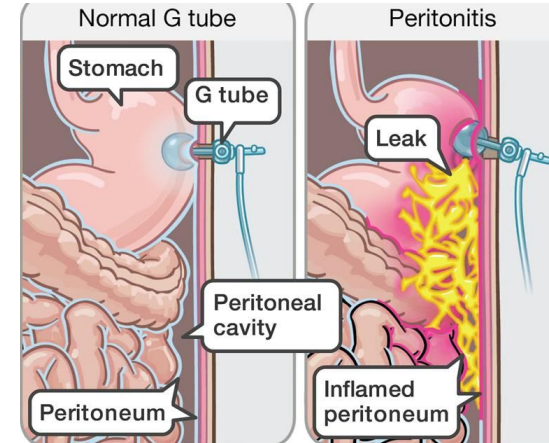
New Gastrostomy Tube

Gastrostomy tubes that are inadvertently removed within the first 4 weeks of gastrostomy tube placement should **not** be replaced blindly at the bedside.

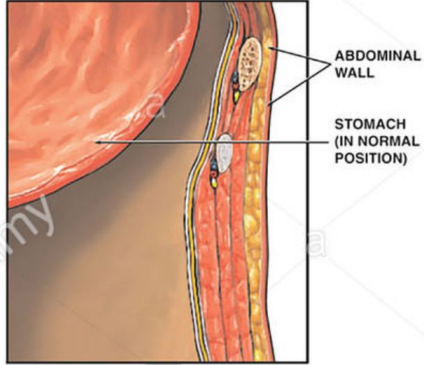
Because the gastrostomy tract may not have matured adequately, the gastric wall and the abdominal wall may have separated. Thus, blind replacement of the gastrostomy tube at the bedside may result in its placement in the peritoneal cavity instead of the stomach = **Peritonitis = Deadly!!!**

Leakage of gastric contents or tube feeds into the peritoneal cavity

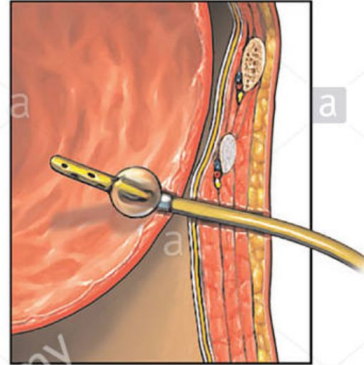
- Peritonitis has been reported from leakage of gastric contents from the gastrostomy site into the peritoneal cavity. If the contents include tube feeding formula, a combination of a chemical and bacterial peritonitis may develop.
- If peritonitis develops, tube feeds should be stopped and antibiotics should be started and patient should be sent to the hospital.
- Introduction of tube feeds into the peritoneal cavity has also been described following routine removal of "traction removable" PEG tubes.
- If the balloon replacement tube is inadvertently placed within the peritoneal cavity, peritonitis can develop when tube feeds are resumed.
- If there is any concern about the tube tip position following balloon replacement tube positioning, a contrast radiograph study through the tube should be obtained.



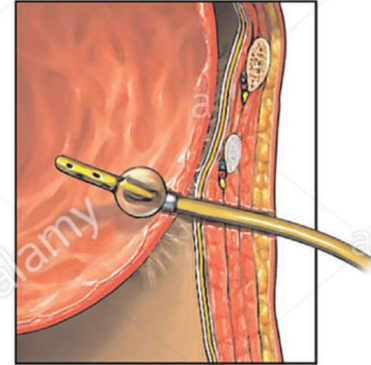
NORMAL ANATOMY



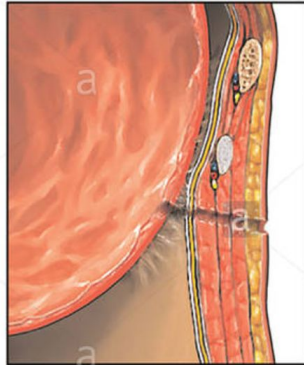
PEG TUBE INSERTED, PULLING STOMACH UP CLOSE TO ABDOMINAL WALL.



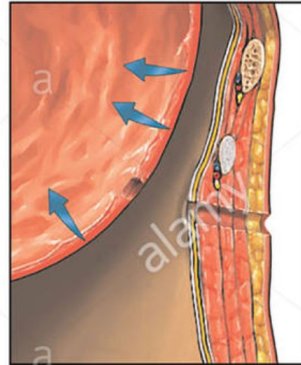
CONDITION AFTER 3-4 WEEKS WITH STOMACH ADHERED TO ABDOMINAL WALL.



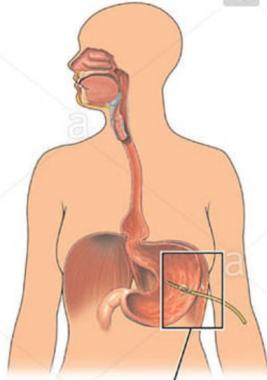
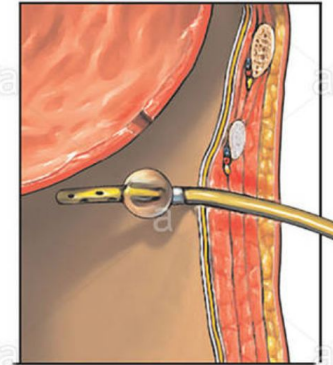
PEG TUBE REMOVED WITH STOMACH REMAINING ADHERED TO ABDOMINAL WALL.



PEG TUBE REMOVED BEFORE ADHESIONS WITH STOMACH RETRACTING BACK TO NORMAL POSITION.



IF ATTEMPT MADE TO REINSERT BEFORE ADHESIONS OCCUR, PEG TUBE WILL NOT RE-ENTER HOLE IN STOMACH



AREA OF ENLARGEMENT



When should Gastrostomy Tubes be replaced?

Another common problem with gastrostomy tubes is deterioration of the tube.

Deterioration can be recognized by the presence of discoloration, irregular beading of the tube, and an unpleasant odor.

Although this presents no direct risk to the patient, the tube can develop leaks and break, which makes tube feedings difficult or impossible. No preventative measures have been established as being effective for preventing this problem.

There is no absolute time period after which gastrostomy tubes should be removed and exchanged to prevent tube dysfunction.

We can replace the G tube every 3 - 6 months routinely to ensure all G tubes are functional.

G Tube feeding and Pressure Ulcers

Pressure ulcers — Gastrostomy tubes do not appear to be beneficial with regard to the development or healing of pressure ulcers among nursing home residents.

In a retrospective study that matched nursing home residents with dementia and a gastrostomy tube to those with dementia but without a gastrostomy tube, the presence of the gastrostomy tube was associated with worse outcomes with regard to pressure ulcer development and healing [29].

After a mean follow-up of 23 days, patients with gastrostomy tubes who did not have pressure ulcers were more likely to develop them compared with those without gastrostomy tubes (36 vs 20 percent, adjusted odds ratio [OR] 2.3, 95% CI 1.2-2.7).

In addition, patients with gastrostomy tubes who had pre-existing pressure ulcers were less likely to show ulcer improvement (27 vs 35 percent, adjusted OR 0.7, 95% CI 0.6-0.9).

These data are difficult to interpret given the possibility of selection bias (ie, patients with more comorbidities were more likely to have a gastrostomy, hence more likely to also have pressure injury).

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Click: under “Wound care Certification” tab,
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The screenshot shows the SNF Wound Care website. At the top left is the SNF Wound Care logo. To the right is the phone number 1.833.DR.WOUND. Below the logo and phone number is a navigation menu with the following items: Home, Our Services, SNF Partners, Wound Care Certification, Learn More, Blog, and Contact Us. The 'Wound Care Certification' tab is selected, and a dropdown menu is open, showing the following options: Programs, FAQs, Affiliate Partners, 30 CEU, and WSOC Certification Wall. An arrow points from the 'Programs' option in the dropdown menu to the text 'Go to: www.SNFwoundcare.com'. Below the navigation menu is a large banner with the text 'SNF WOUND CARE' and 'Leading Wound & Skin Care Specialists at Skilled Nursing Facilities Nationwide'. Below the banner is a 'PARTNER WITH US' button.

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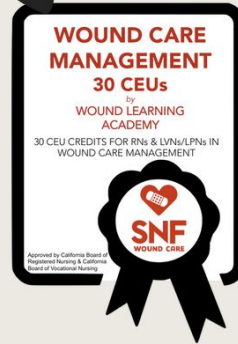
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