

# Enteral Feeding Tubes: Basics & Emergencies

The Basics	
<p><b>Indications:</b> Patients with long-term nutritional needs beyond 3-6 months</p> <ul style="list-style-type: none"> <li>- Inability to consume 80% caloric needs by mouth</li> <li>- Excessive feeding time</li> <li>- Inadequate growth or weight gain or failure to thrive</li> <li>- Dysmotility</li> </ul> <p><b>Anatomy of a Tube:</b></p> <ul style="list-style-type: none"> <li>- <i>Percutaneous endoscopic gastrostomy (PEG), traditional and long tubes</i> → internal and external bolsters, balloon port, and feeding port</li> <li>- <i>Low profile "button"</i> → balloon port, feeding port, and internal bolster (balloon) <ul style="list-style-type: none"> <li>o AMT: lays flat and balloon wider and donut shaped</li> <li>o MIC-Key (Kimberly Clark): sits up higher, balloon more narrow, apple-shaped</li> </ul> </li> <li>- Diameter is measured in French, depth of the tube in cm, balloon fill size in mL</li> <li>- Length and diameter located on box and written on main tube port</li> </ul>	<p><b>Types of Tubes:</b></p> <p><b>Gastrostomy (G-Tube)</b></p> <ul style="list-style-type: none"> <li>- Can be replaced at home</li> <li>- Can be used for both bolus and continuous feeding</li> </ul> <p><b>Gastrojejunal (GJ Tube)</b></p> <ul style="list-style-type: none"> <li>- Good option for patients with GI dysmotility, chronic vomiting, and associated respiratory distress from vomiting</li> <li>- Can be an alternative to a Nissen</li> <li>- Can only be replaced in IR</li> <li>- Two feeding ports: one in stomach and one in jejunum (usually J-port used for feeds and G-port for venting and sometimes meds)</li> <li>- In most cases, G-tube is converted to GJ-tube when gastric feeds aren't tolerated</li> <li>- Usually used for continuous feeds (through J-port)</li> <li>- Less risk of vomiting/reflux compared to GT, but more prone to clogging</li> </ul> <p><b>Jejunal tubes (J-tube)</b></p> <ul style="list-style-type: none"> <li>- Require surgical placement</li> <li>- Depending on the type of surgery and tube, can sometimes be replaced at home</li> <li>- Only used for continuous feeds</li> </ul>
Feeding Intolerance	
<ul style="list-style-type: none"> <li>- Start with volume patient is tolerating or, if patient is not tolerating any feeds, begin with home formula at 25% of daily maintenance volume continuously over 24 hours. Reassess in 4-6 hours or earlier if symptoms arise.</li> <li>- If tolerating 25% daily maintenance volume, increase by 25% every 4-6 hours. If at any point patient does not tolerate rate, return to previous rate and reassess in 4-6 hours.</li> <li>- If not tolerating 25% daily maintenance volume, stop feeds for 30 minutes and reassess. If still not able to tolerate 25%, go to trophic feeds (5mL/hr) for 6 hours, then back to 25%.</li> <li>- If not tolerating trophic formula feeds, transition to Pedialyte for 6 hours before trying again.</li> <li>- If unable to advance feeds at 48h, consider GI consult.</li> </ul>	
Emergencies	
<p><b>Buried bumper syndrome:</b> rare complication of PEG tube when external bumper too tight and causes internal bumper to embed in gastric wall, leading to fistula. Presents with tube blockage, pain or vomiting and inability to rotate tube. Often requires surgical intervention.</p> <p><b>Tube migration/obstruction:</b> if external bolster not tight enough internal bolster migrates and becomes lodged. Presents with signs/symptoms of obstruction. Deflate the balloon and attempt to retract the tube.</p> <p><b>Misplacement:</b> Presents as peritonitis if tube dislodged and replaced in immediate post-op period. To confirm placement, dye study must be performed. <i>Emergency contact surgery.</i></p>	
Who do I call?	
<p><i>If NOT emergent, find out tube type and size, and when/why/how/by whom it was first placed before calling.</i></p>	
Any of the emergencies above, new tube, peritoneal signs, prolapse of GT placed by surgery → <b>Surgery</b> Concerns for feeding intolerance → <b>GI</b> Concerns about tube initially placed by IR, need for GJ replacement → <b>IR</b> Stoma irritation, skin breakdown → <b>Wound Care</b>	

Check out **tubefed.com** for more information and videos!

## Enteral Feeding Tubes: Complications

Complication	Features	Treatment
<b>Granulation tissue</b> 	Moist pink overgrowth (looks verrucous) with clear base/stalk caused by local trauma, sometimes friable, often clear-brown drainage	Secure GT site and apply silver nitrate triamcinolone <i>Drainage from granulation tissue is usually yellow, sticky, or crusty and is expected during stoma healing. If it escalates, persists, or changes color, consider leakage.</i>
<b>Leakage</b> 	Increase in drainage or change in color of drainage, concerning for bile/gastric contents, stool, or feeds. Causes include underfilled balloon, poor tube fit (can be 2/2 weight change), and increased abdominal pressure.	<u>Low volume:</u> Fill balloon with water to recommended volume. <u>Poor tube fit:</u> Call appropriate service for potential re-sizing. <u>Increased IAP:</u> Identify source of increased pressure (PPV, excessive volume, constipation, ascites/distension, edema) and call appropriate service.
<b>Prolapse</b> 	Smooth shiny pink-red area, can be circumferential or partial. Painful to touch and may come and go with straining.	If prolapsed mucosa is persistent and painful, contact surgery to evaluate for site revision.
<b>Irritant dermatitis</b> 	Erythema around G-tube site, usually due to drainage around tube and resultant irritation (and rarely cellulitis).	Use barrier cream (Desitin, calmoseptine, emollient) and barrier dressing (split gauze, Mepilex) changed BID. If candida, use nystatin or combo of nystatin and above barriers. <i>Avoid routine use of topical steroids or antifungals if no fungal infection.</i>
<b>Infection (cellulitis/abscess)</b> 	Tenderness (often is the first sign; sometimes is not recognized), erythema, edema, purulent drainage, fever. Consider bacterial and fungal pathogens.	Clean site with soap and water. Apply warm compresses and topical antibiotic creams (no longer than 5-7 days). If worsening erythema or systemic symptoms, consider US and oral or IV antibiotics (if non-purulent, cephalaxin; if purulent, clinda or TMP-SMX). For fungal infections, consider nystatin. Treat granulation tissue. Consider imaging and culture based on clinical picture.
<b>Enlarged Stoma/Keyhole</b> 	Causes include leakage leading to skin breakdown, excessive tube movement, granulation tissue, constipation, dysmotility, chronic cough, emesis, and tube break.	<u>Before first change:</u> Call surgery team. <u>After first change:</u> Check water in balloon and evaluate tube length (if weight change, may not fit appropriately). Address motility, constipation, consider proton pump inhibitor. Can also consider removing tube for a short period of time to promote constriction of tract.
<b>Dislodgement</b> 	Causes include deflated balloon, tube not being anchored in place, or damaged/defective tube.	<u>Before first change:</u> Replace with foley same size or smaller Fr (or original tube), secure with tape, <u>do not use</u> and call surgery resident on call . If it was GJ tube, do not advance tube > 3-5 cm or risk of tracking into esophagus. IR must replace GJ tubes under fluoro. <u>After first change:</u> Can be replaced by family or nursing at bedside
<b>Tube Blockage</b>	Unable to flush or give formula/meds through tube. Often due to certain meds (cipro, iron, kayexalate, lactulose, cholestyramine)	Flush tube with warm tap water before/after administering formula and meds. Use liquid form of meds when possible. Don't crush meds that are sustained-released or enteric-coated. For blocked tubes, attempt to flush with 1-3mL of water or pancreatic enzymes (Coke is no longer recommended or allowed at UC). If all else fails, replace tube. <i>Also applies to NG/NJ tubes!</i>
<b>Bleeding</b>	Causes include stoma bleeding back into the stomach, mild gastritis, and swallowed blood from nose or mouth bleeds.	<u>From stoma:</u> Often from granulation tissue. Consider barrier ointments and mepilex or gauze to provide pressure and protection. If freely-flowing blood, further workup needed and consider surgery or wound care team. <u>From GI tract:</u> Infuse 60mL water into GT with syringe and aspirate out. Repeat 1-2 more times. If clearing, observe and repeat in 1-2 hours. If still minimal, observe and consider need for acid suppression medications. If not clearing or withdrawing frank blood, further workup needed.