THE G.I. OSTOMIES

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TODAY’S LESSON PLAN:

I. Overview of G.I. Ostomies
   a. General Information
   b. Stoma and Peristomal Skin

II. G-tubes:
   a. The G-tubes
   b. Care & Maintenance
   c. Problems

III. Practice session:
   a. Replacing a G-button
GENERAL OSTOMY INFORMATION:
DEFINITIONS:

- **Ostomy**- (“Os” means mouth or opening + “tomy” means surgical cutting). An ostomy is a surgically creating opening. The ostomy surgery connects a hollow organ on the inside (like the intestine) to the outside of the body through the skin.

- **Peristomal** - the area around the stoma

- **Pouch**- the bag used to collect body fluids such as stool from an ostomy.

- **Stoma**- mouth-like opening that can be seen at the skin level.

- **WOC nurse**- wound, ostomy & continence nurse a.k.a stoma nurse, ostomy nurse, enterostomal (E.T.) nurse or therapist
GENERAL OSTOMY FACTS:

• **Purpose: (4 D’s)-**
  - **Divert** - reroute from damaged/diseased area in order to allow that part to rest and heal.
  - **Decompress** - to relieve pressure from an obstruction or excess air.
  - **Drain** – outlet for fluids to move out of the body.
  - **Deliver** - access for the administration of formula, fluids and/or medications.

• **Basically a way to get something IN or get something OUT**

• **Other facts:**
  - Ostomies help patients live and improve their QOL.
  - Can be temporary or permanent depending on patient’s condition.
  - Location is based on where the problem is and the name reflects this location.
  - Some patients have more than one ostomy.
  - Some ostomies require a tube. Those that don’t usually require a pouch to contain fluids which can be very irritating to the skin.
GI OSTOMIES:

- **Gastrostomy**: opening into the stomach.
- **Jejunostomy**: opening into the jejunum.
- **Cecostomy**: opening into the cecum; AKA ACE: (Antegrade Colonic Enema); M.A.C.E. Malone Antegrade Colonic Enema; appendico-cecostomy.
- **Ileostomy**: opening into the ileum; AKA fecal diversion.
- **Colostomy**: opening into the colon; AKA fecal diversion.
- **Mucous Fistula** - the second of two stomas or the second opening in a single loop ostomy stoma. It may have some mucous discharge. Also called the non-functioning stoma.
THE STOMA & PERISTOMAL SKIN
**ASSESSMENT:**

- **History:**
  - **Stoma**
    - When was the stoma created?
    - What is the function of the stoma? (don’t assume)
  - **Problems:**
    - pain, itching, redness, discharge, odor, etc
  - **Daily care:**
    - Skin regimen
    - Treatments: past/current & response; technique
  - **Pertinent history:**
    - change in meds, recent illness, etc
  - **Device info**

- **Exam:**
  - **Stoma:**
    - Color, shape, protrusion, bleeding, drainage
  - **Peristomal skin:**
    - Intact?, color, tissue, lesions, swelling, drainage
  - **Device (if applicable):**
    - Fit of tube/pouch, Stabilization of tubes
**STOMA FACTS:**

- Bowel stomas should be red like the inside of your mouth, and they should be moist and soft.
- Stomas might bleed a little when rubbed or touched.
- They don't hurt when touched because there are no nerve endings.
WHAT'S NORMAL?
WHAT’S NOT SO NORMAL?:

• Surgical:
  ◦ Wound dehiscence; infection

• Skin:
  ◦ Irritation, skin breakdown, infection, fungal rash, granulation tissue, leakage of intestinal fluids

• Stoma:
  ◦ Swelling, prolapse, retraction, herniation, stenosis

• Output:
  ◦ Too Much: can cause skin breakdown; can lead to dehydration
  ◦ Too Little: obstruction, impaction or stricture
GASTROSTOMY ABNORMALITIES:
ILEOSTOMY ABNORMALITIES:
SKIN CARE:

• **Clean/Dry:**
  - Clean with mild products
    - only use anti-bacterial if ID recommends
    - water only for ostomy
  - Gently dry:
    - soft cloth
    - reduce friction

• **Treat:**
  - Correct the cause:
    - Remove irritants
    - Change/stabilize tube
  - Heal, skin
    - Medications: steroid cream, anti-fungal, barrier powder

• **Protect:**
  - Absorb fluids:
    - powder, cholestyramine, dressings
  - Protect skin from drainage-
    (caustic depending on type of fluid and duration of exposure). Use barrier products.
    - Non-pouched stoma: Blot off drainage and reapply product
    - Pouched stomas; reapply with pouch changes- some products cause pouch not to adhere
      - less is more unless there’s an issue
  - Protect site from trauma/removal:
    - binder, ace wrap, clothing, etc
BUILDING A BARRIER:

- **Purpose:**
  - Protects the skin from caustic fluids and helps the skin heal
- **Products**: 1.
  - Intact skin – zinc oxide, petrolatum, skin prep
  - Non-intact skin – add barrier powder
- **Technique:** (as important as the products):
  - Put medications on first
  - If using powder apply before barrier creams/sprays (dust off excess; don’t let extend past borders of adhesive on pouch)
  - Skin prep/film helps seal in powder and provide a light barrier
  - Apply creams as top layer – apply thick like icing
  - Layer if needed
  - Don’t wipe completely off each time, blot and reapply

1. do not use ointment/
   Creams when pouching

Barrier Products
1. powder
2. cream
3. prep

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**RED FLAGS:**

- **Output:**
  - High output: Dehydration *(esp. jejunostomy/ileostomy)*
  - Decreased or no output from ileostomy
  - No bowel movement w/increased abdominal distension-*cecostomy*
  - Vomiting feces and/or blood

- **Feedings:**
  - Formula in mouth and/or choking; upper airway noises during or after feeding
  - Pain and/or vomiting during or right after feedings, especially if recurring.
  - Broken or obstructed tube esp if not able to give feedings/meds
  - Signs of dumping syndrome (esp. with J feeds)
    - Nausea/Vomiting, sweating, heart palpitations, rapid heart rate, weakness, fatigue, passing out; dizziness, lightheadedness, shakiness, feelings of anxiety, nervousness

- **Stoma:**
  - color: black, dusky, pale, gray, brown
  - prolapsed with bleeding

- **Site/abdomen:**
  - Signs of infection esp during first 2 weeks post-op
    - Moderate to severe redness, swelling and/or pain around the stoma especially if worsening.
  - Abdominal rigidness/tenderness

- **Other:**
  - Any worsening symptom
QUESTIONS SO FAR?
ABOUT G-TUBES

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Gastrostomy Basics:

• **Why?** To deliver formula, water and/or medications either as either supplementary or the sole source of intake.

• **Who?** Patients who are unable to get the calories, fluids and/or medications needed to sustain life and to grow.

• **When?** If enteral access is needed longer than 6 weeks.

• **How?** A gastrostomy can be created by one of these methods:
  1. Surgical:
     a. Open procedure
     b. Laparoscopic
  2. Endoscopic
  3. Radiological
The goal of the creation of the gastrostomy is for the stomach to adhere to the abdominal wall, creating a tract\(^1\) where the tubes will be placed.

The tract to matures in approximately:

- 8 weeks for tubes/buttons
- 12 weeks for tubes/buttons not sutured

\(^1\) tract is the channel-like formation between the stomach and the skin where the G-tube/button is located.
The G-Tubes

1. Placement: Primary vs secondary
2. Type of tubes: low profile, G-J tubes
3. Anatomy of a G-tube
THE TUBES: WHAT’S THE DIFFERENCE?
PRIMARY VS SECONDARY TUBES:

- The placement
  - Primary-tubes are placed during the original gastrostomy creation
  - Secondary - tubes are placed after the initial tube is removed.

- The tubes
  - Primary
    - Pezzar, PEG tube, G-button-may here called as “ONE Step”
  - Secondary
    - G-buttons, Foley catheters, Balloon-type G-tubes

- Physician:
  - Primary:
    - Surgeon, Gastroenterologist, Radiologist
  - Secondary:
    - Any healthcare provider, some RNs (with order/competency)
GASTROSTOMY PRIMARY TUBES:

- **Surgical**
  - Placed by surgeon
  - Pezzar tube
  - Stomach sutured to abdominal wall
  - Often done w/ Nissen Fundoplication
  - Changed to a button in 6-8 weeks

- **PEGS**
  - Placed by GI
  - Has an external bolster
  - Changed to a button in ~3 months

- **Primary G-button**
  - Laparoscopic or endoscopic
  - Limited manipulation 1st 2 weeks

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1. Drainage Tube Attachment Device
2. Percutaneous Endoscopic Gastrostomy Tubes

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GASTROSTOMY BUTTONS:

- AKA: low profile tube, skin level device
- 2 main types:
  1. Balloon type:
     - Brands: Mic-key®, Mini®, Mini ONE balloon®, Nutriport™
     - Has a balloon: The balloon volume should be 5 cc (4 cc for neonates or 12 Fr. Buttons)*
  2. Non-balloon type:
     - Brands: BARD®, Mini ONE non-balloon, Entristar®
     - Has a silicone mushroom or basket-type tip inside to keep G-button from coming out
     - Placed with obturator or special insertion device to stretch out the internal bolster

*Read manufacturer guidelines
GASTROSTOMY BUTTONS:

- **Mic-key®**
- **Mini ONE® balloon**
- **Mini ONE® non-balloon G-button**
- **BARD® G-button**
# Gastrostomy Button Comparison

<table>
<thead>
<tr>
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<th>Balloon</th>
<th>Non-balloon</th>
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<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>Easily replaced @ home</td>
<td>Lasts longer (sometimes up to several years)</td>
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<tr>
<td></td>
<td>Comes in multiple sizes</td>
<td>No balloon to break</td>
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<tr>
<td></td>
<td></td>
<td>Not as likely to be accidentally dislodged</td>
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<tr>
<td><strong>Disadvantages</strong></td>
<td>Balloon breaks, needs more frequent replacement</td>
<td>Has to be changed by provider or Not available in as many sizes as balloon type</td>
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<tr>
<td></td>
<td>Easier to dislodge</td>
<td>May need sedation to place</td>
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<td></td>
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<td>Some devices need size specific extensions and separate decompression extension (BARD button)</td>
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Physician preference and availability of buttons may direct what is placed.
**GASTRO-JEJUNAL (G-J) TUBES:**

- Placed to feed directly in the small intestine usually because of aspiration or motility problems or the need to decompress the stomach
- Placed through an existing gastrostomy site
- Usually done in radiology under fluoroscopy

Pt. should be on continuous feedings to prevent dumping and hypoglycemia
**SPECIAL CONSIDERATIONS:**

- Cecostomy: G-button in cecum (RLQ) for bowel management

- Gastrostomy or Jejunostomy—may be used for drainage rather than feeding
ANATOMY OF A G–TUBE/BUTTON:

1. External bolster prevents tube/button from migrating into stoma – no addition external stabilization device needed
2. Internal bolster/retention balloon secures device internally
3. Balloon valve allows access to inflate/deflate the balloon
4. Anti-reflux valve within the feeding port of button prevents reflux of formula
5. Flap/cap over access port
6. Feeding adaptor
**THE RIGHT SIZE:**

- **Sizes:**
  - **French (Fr)** — circumferentially size
  - **CM** - length from the top of the balloon/internal bolster to the bottom of the external bolster (in buttons) — measurement of the tract.
  - G-J tubes have the jejunal length in addition to the French and stoma cm length.
  - As a patient gains weight, they will *often* need a longer button. The French size usually remains the same.

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**How do you know if the button size is right?**

- Should rotate w/o difficulty
- Should have a slight amt. of in and out play
- Should fit snug to skin w/ ~ one dime’s width between the external bolster and skin surface

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*FYI: There is usually a difference in fit w/ change of position*
G-TUBES: WHAT’S THE DIFFERENCE?

- A tube by any other name is still a tube
- Brand names are not so important
- What is important?
  - When was the tube placed? Is it a primary tube/button?
  - How was it placed? Surgically, endoscopically?
  - Where is the tube located? Stomach, jejunum, cecum?
  - What is the type of tube? Low-profile (balloon, non-balloon), long tube, catheter?
  - Who is the provider(s)? Who put the tube in and who follows the patient for the tube care?
CARE AND MAINTENANCE OF THE G-TUBE
A Brief Review
**Daily Care of the G-Tube**

- **Clean the site with mild soap and water—do not use peroxide**
- **Do not submerge patient in water for first 1–2 weeks post-op**
- **Use of prophylactic antibiotics not needed**
- **Change dressings when soiled**
- **Stabilize tubes**
- **Vent the tube as needed**

**Giving Medications:**
- Give liquid medications as much as possible
- Do not give medications that dissolve under the tongue or are sustained release through the tube
- Do not give bulk forming medications through the tube

**Flush the tube with water before and after feedings, in between medications, after 6 hours of continuous feedings**

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**STABILIZING THE G-TUBE:**

- Extremely important!
- Prevents migration of tube
- Prevents rocking motion*
- Some tubes have a stabilization device already
- Some tubes need external stabilizer
  - i.e. Drainage Tube Attachment Device or sausage roll dressing
- Don’t tape down too tight, no tension*

* Can stretch out stoma

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VENTING THE G–TUBE:

• You may need to vent the patient’s tube to remove excess air or fluid.
  – Some buttons have specific adapters for decompression
  – Be cautious not to get back too much fluid-best done before or 2 hours after feedings.

• Farrell Valve® Gastric Pressure Relief Device is recommended to use with continuous feeds.
  – It’s designed to help patients who suffer from poor gastric motility, pain and bloating.
  – New bag q 24 hours.
G–Tube Problems You May See

1. Stoma
2. Skin
3. Tube
**LEAKAGE:**

- All gastrostomies leak some
- Causes: Any increase in intra-abdominal pressure, the 4 C’s:
  - Constipation
  - Coughing (also heavy breathing, vent kids)
  - Crying
  - Change in weight or abdominal girth

- Causes con’t:
  - Balloon has deflated
  - Incorrect size, improper stabilization
  - Underlying disorder like slow motility
  - Tube displacement
  - Poor wound healing
  - Positioning - putting pressure
  - Body structure: scoliosis
  - Spasticity
  - Inability to decompress stomach
  - Feeding intolerance
LEAKAGE:

Treatment:

- Treat the underlying cause
  - Change to right size and/or new button*
  - Add more water to the balloon – can go up to 6-7 cc (≥14 Fr)
  - Medication to suppress the acid in the stomach: PPI’s
- Protect skin
  - Barrier Products: Powder, Creams
  - Dressings: gauze, foam, Pouch
- Change rate/route of feeds
- Dye study

*change length not Fr. size
**IRRITANT DERMATITIS:**

- **Cause:**
  - Primarily from leakage of gastric contents
  - Can also be from harsh cleansers, antibacterial creams, external bolster too tight, friction
  - Sometimes skin conditions such as eczema can mimic this

- **Treatment:**
  - Correct the cause
  - Barrier products: creams, powders
  - Meds to reduce acid oral/topical
  - Low dose steroids
  - Absorptive dressings

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HYPERGRANULATION TISSUE:

- Common problem seen
- Extra growth of tissue; pink-red
- Yellow, “snotty” and/or brown drainage, bleeding
- Sometimes friable
- May be painful
- Often mistaken for an infection

- Cause: incorrect stabilization, excessive moisture, Peroxide use, Dilantin, occlusive dressings

- Treatment:
  - silver nitrate application
    - Q 3 days
    - Protect healthy skin w/cream
  - Steroid creams:
    - Triamcinolone 0.5% BID 7-10 days (don’t repeat for 3-4 wks)
  - Stabilize tube, change size of button, don’t leave extensions on when not in use
  - Barrier powder
  - Foam dressings (expensive)
GASTRIC LINING PROTRUSION:

- Cause: usually from the G-button being too short or from the child pulling on it or pulling it out
- Not harmful
- Sometimes hard to distinguish from granulation tissue
- May resolve
- Treatment: Protect it (Maalox liquid), surgical if severe
BACTERIAL INFECTION:

- **Appearance:**
  - Red streaking, spreading erythema
  - Swelling around site
  - Palpable hard knot
  - Fluid filled lesion
  - Green/purulent drainage

- **Other symptoms:**
  - Increased tenderness
  - May or may not have fever or odor

- **Cause:**
  - MRSA common source
  - Poor hygiene
  - Unclean water
  - Excessive pressure between bolsters
  - Patient has other infection like URI

- **Treatment:**
  - Clean w/ sterile water or saline 2-3x/d
  - Oral/IV antibiotics
  - Bactroban in addition to oral antibx
Fungal Infection:

- Appearance:
  - Red papular rash, often has satellite lesions.

- Causes:
  - Trapped moisture
  - Hot, humid environment
  - G-tube located deep in a skin fold
  - chronic moisture, immuno-suppression, cortico-steroids and diabetes

- TX:
  - Keep area clean and dry
  - Antifungal medication: powder preferred if localized
**Tube Obstruction:**

- **Causes:**
  - Inappropriate med administration, thick formulas, failure to flush, pill fragments, viscous medications, defective tubing

- **Prevention**
  - Flush well
  - Liquid medication administration

- **TX:**
  - Check for kinks, clamp on
  - Flush with warm water, use 30-60 cc syringe
  - Push-pull method
  - Milk the tubing
  - De-clogging methods-Viokase, soda
  - Change out extensions/button
  - Check placement, dye study
**Tube Dislodgment:**

- **Causes:**
  - Balloon deflates
  - Tube gets pulled out:
    - Purposefully
    - Accidentally

- **Prevention:**
  - Ace bandage, tape, binder, clothing

- **Treatment:**
  - Replace the tube as soon as possible - *the stoma can start to stricture in 1-2 hours or sooner*
  - Confirm placement
  - **Be cautious if maturity of tract unknown:**
    - Forcing a tube may disrupt stomach from abdominal wall?
WHEN TO CHANGE THE G-BUTTON:

• The button should be changed when it’s showing signs of not working correctly and/or a new size is needed.
  • If you need to add water to the balloon frequently (2 or more times a week).
  • If part of the G-button breaks, loosens up, tears or doesn’t work correctly.
  • If formula is coming out of the button in a large amount, enough to soak the patient's clothes greater than 1 time a day.
• If the G-button does not fit correctly
  • The G-button may be too long if the G-button sticks out more than usual and/or there is an increase in drainage and there is enough water in the balloon.
  • The G-button may be too tight/short if the button is hard to turn and/or leaves impression marks on the skin.
QUESTIONS?
Replacing a Gastrostomy Tube/Button

1. Replacing a G-Button
2. Placing a Foley in the Stoma
3. Verifying Placement
HOW TO REPLACE THE G-BUTTON:

1. Check the balloon first to make sure it inflates and it is intact and then withdraw the water.

2. Lubricate the tip/stem of the G-button with a water soluble lubricant.

3. Remove the old G-button by withdrawing the water from the balloon port and pulling the button out.

4. Insert the new G-button into the stoma and push it to the skin level.

5. Fill the balloon with the appropriate amount of sterile water-usually 5 mL.

6. Check for placement.

7. If unsure of placement then keep the G-button in the stoma but contact the provider for a fluoroscopy study order. Keep the patient NPO until placement confirmed.

^see separate instructions
**Placing a Catheter in the Stoma:**

1. Lubricate the Foley catheter
2. Attach an adaptor/plug to the end of the catheter so that gastric contents don’t come out
3. Insert the catheter into the stoma to the tape mark
   - Do not insert the catheter too far inside the stomach
4. Inflate the balloon with 4-5 mL of sterile water.
5. Pull back gently on the catheter until the balloon is against the anterior gastric wall noted by feeling resistance when pulling back.
6. Stabilize the catheter
7. Check for placement

\(^{1}\) see separate instructions
**Possible complications with Foley/G-button placement:**
- False tract
- The stomach can separate from the abdominal wall—in newer tracts
- Small bowel or pyloric obstruction from the tube migrating into the small intestine

**How to Check for Placement:**

- **Attach a 60 cc cath tip syringe to the bolus extension set or to the end of the tube if it’s a Foley or balloon G-tube.**
  - Pull back on the syringe to aspirate gastric contents.
  - If unable to get any aspirate back then:
    - Administer 10-20 mL of sterile water and then pull back to get aspirate
    - Change the patient’s position to the left side

- **Order a dye study in fluoroscopy to evaluate placement:**
  - if this is the first conversion of a primary tube/button
  - for signs of complications post placement such as: no gastric aspirate, abdominal pain, tenderness and or rigidity.
PRACTICE TIME: