Gastrointestinal Disorders

Radiologic Studies

- What does **barium swallow** help see?
- What is the MOA of barium swallow?
- A pt will undergo barium swallow test, what should you check before?
- What are the nurs management for pre and post barium swallow test? (which meds should be adjusted?)

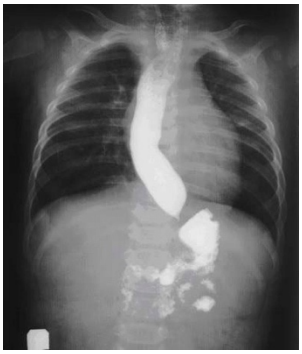
Barium Enema

- Differentiate barium enema and swallow
- Barium enema can detect _____, _____, and _____
- What are the nurs care for pre and post barium enema?
- What are some contraindications for barium enema?

CT scan

- Why is a **CT** better than **ultrasound** to detect abnormal issues?
- A pt will undergo CT scan with iodine, what should you check? (3 things)

RADIOLOGIC STUDIES



Barium Swallow

- Used for **upper GI series**
  - Aids in diagnosing: **ulcers, varices, tumors,** and **regional enteritis**
- Process: pt swallows barium which allows for a view of **esophagus, stomach,** and small intestines
- Nurs consideration:
  - Make sure pt is able to swallow
  - Barium taste gross
- Nurs care
  - Pre-care:
    - → Put pt on **clear liquid diet the day before** and **NPO after midnight**
    - → Hold any PO meds (unless absolutely needed)
    - → Adjust **insulin** doses as needed (since pt can't eat)
    - → Educate pt to **avoid bowel stimulants like tobacco**
  - Post-care:
    - → Increase **fluid intake** to facilitate evacuation of barium
    - → Monitor for **constipation**

Barium Enema

- Used for **lower GI tract**
  - Allows view of **filled colon**
  - Able to detect **polyps, tumors,** and **lesions**
- **Colon cleansing** should be done prior
- Contraindications:
  - **Active inflammatory bowel disease**
  - **s/s of bowel perforation**
- Nurs care:
  - Low residue diet 1-2 days before
  - **Clear liquid diet the day before**
  - **Laxatives** or **golytely** the night before
  - **NPO** after midnight
  - Prep pt for **cleansing enema in the morning** if needed
  - Educate pt that he/she will have increased **BM** after procedure, will have barium in stool, will have to increase fluids
  - Make sure that pt **is able to change positions**

Computed Tomography (CT or CAT)

- CT is used in detecting and localizing abdominal cavity issues
  - Can also be used for **obese pts** and when there's **gas in abdomen** (unlike ultrasound)
- **Contrast dye** may be used for better visualization for **CAT scan**
  - Make sure to check for **allergies to iodine or shell fish**, **creatinine levels**, **pregnancy**
    - → If pt has low kidney function, may need to reduce dose or not use dye

Endoscopic Procedures

- Endoscopic procedures can help obtain either a _____ or a _____

- What are the types of endoscopic procedures that can visualize the GI tract? (differentiate them)

- A pt just came out from an endoscopic procedure, what is your top concern?

Endoscopic Nurs Management

- What are the nurs management pre and post-procedure for endoscopic procedures? (for post, focus on what to assess and s/s to look out for)

- What are some things to check before giving pt food after an endoscopic procedure?
- What are some s/s of perforation?

Flexible Fiber Optic Colonoscopy

- A pt will undergo colonoscopy tomorrow, what are your education/management ?

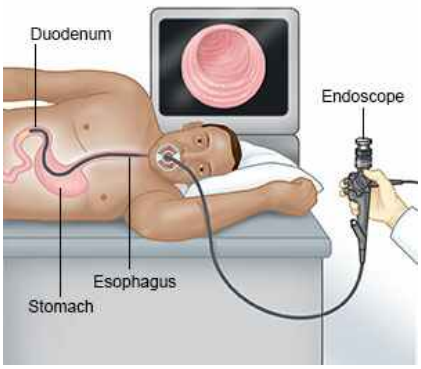
- A pt just came out from a colonoscopy, what are your nurs managements? (what should you check for?)

Endoscopic Procedures

- Can obtain **biopsy** and **cytology**
- Can visualize GI tract
- Types:
  - **Endoscopy (EGD)**
    - → Monitors **esophagus, stomach,** and **duodenum**
  - **Colonoscopy**
  - **ERCP**
    - → Monitors **liver, pancreas, bile duct,** and **gallbladder**
- Nurs consideration:
  - Check for s/s of **perforation**

Endoscopy (EGD) Nurs Management

- Pre-procedure:
  - Keep pt **NPO at least 8hrs before**
  - Verify consent
  - Verify **allergies**
  - Give meds
- Post-procedure:
  - Assess **LOC** (since pts are sedated during procedure)
  - Check v/s **ASAP**
  - Monitor for s/s of **perforation**
    - → Change in v/s: **low BP, increased HR and temp, etc.**
    - → Lots of pain (esp. in **throat** or **back**)
    - → Bleeding like **hemoptysis**
    - → Difficulty **swallowing**
  - Check for **aspiration** (since numbing agents are applied on throat)
    - → **Gag reflex** check
    - → Encourage deep breathing and **coughing to keep airway open**
    - → Assess for **adventitious sounds in lungs** (to make sure nothing entered lungs)
    - → Assess respirations and O2 sat



Flexible Fiber Optic Colonoscopy

- Takes approx. an hour
- Success depends on **how well the colon was cleansed**
  - If bowel is not cleaned well, pt may have to come back
- Nurs management:
  - Pre:
    - → Make sure pt was on **clear liquid diet** the day before and **NPO** after midnight
    - → Give **Golytely** for intestinal lavage
      - ✓ Pt should ingest over **3-4 hr period**
      - ✓ Do not use for **IBD or perforated bowels**
  - Post: assess for s/s of **bowel perforation**
    - → Rectal bleeding
    - → Sudden abdominal pain
    - → Cramping
    - → Distention

- What are some contraindications for colonoscopy?

→ Fever
→ **Peritoneal sign**
→ Increased HR and low BP

- Colonoscopy is contraindicated for:
  - **Bowel perforation**
  - **Severe diverticulitis**
  - **Severe colitis**

GASTROINTESTINAL INTUBATION

<u>Gastrointestinal Intubation</u>

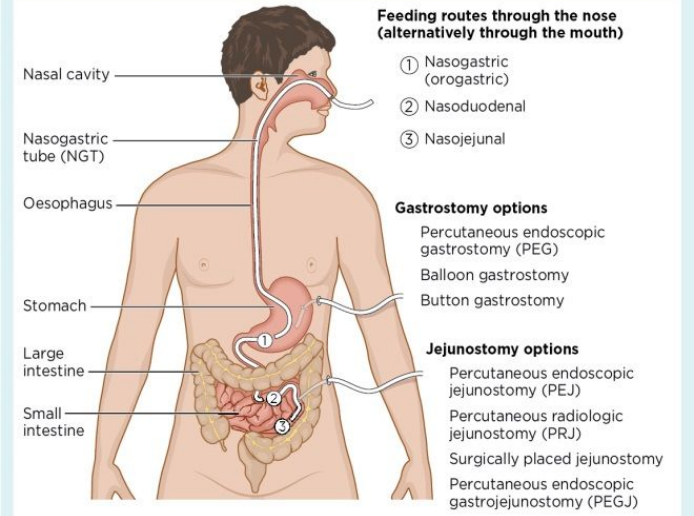
- What are the main 3 types of GI intubations?

Introduction

- Types:
  - NG tube
  - NE (nasoenteric): **duodenum** or **jejunum**
  - Gastrostomy and jejunostomy
    → Preferred for **enteral feedings** as they last longer than **4 weeks**

- A pt asks why he/she needs an NG tube before getting surgery for obstructed BM?

- B/c GI tract always make **mucous,** if person has obstructed BM → mucous cannot go through GI tract → back up → n/v
  - So, we need suction from intubation



- What are some purposes of GI intubations?

- Purpose
  - **Decompress stomach**
    → Removal of fluid and gas
  - **Stomach lavage**
    → Flush with water or other fluid to remove toxins
  - Administer meds and feedings
  - **Compress bleeding site**
  - **Aspirate gastric contents for analysis**

- A pt needs a stomach lavage, what will you do? (pt already has an NG tube)

<u>Confirming Placement Procedure</u>

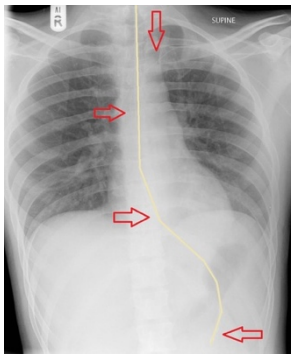
- What are the 4 ways to check for GI intubation placement? Which one is best?

Confirming Placement Procedure

- Measure **exposed tube length**
  - Should be done every shift
  - Increase in length = **migration upward**; decrease in length = **migration downward**
- Aspirate and check **color**
  - Gastric aspirate = cloudy and green, tan, brown, **large volume**

- How can you check NG tube placement by measuring?
- How can you check NG tube placement by measuring pH?
- How can you check NG tube placement via gastric aspirate?

  - Intestinal aspirate = clear, yellow, and smaller volume than gastric
  - Lung aspirate = clear and very small volume
- Measure **pH**
  - Gastric: 1-5
  - Intestine: 6 or higher
  - Lung: very alkaline (7 or higher)
- X-ray
  - **Best way**
  - **Should be done initially right after insertion**



<u>Complications</u>

- What are the 3 main complications from inserting an NG tube?

- A pt coughs after inserting a NG tube, what are your assessments and intervention? **What can you do to prevent it?**

- What can you do to prevent skin irritation due to NG tube?

- What can you do to prevent severe fluid and electrolyte imbalance from NG tube?

- A pt has dry skin, BP of 90/50, and HR of 110 after inserting an NG tube, what do you suspect?

<u>Miscellaneous Nurs Interventions</u>

- A pt says that he feels nauseous after you inserted an NG tube, what should you do next?

Complications

- Pulmonary
  - Tube is in lungs
  - **Pt coughs and pharynx clearing is impaired**
  - Aspiration risk
  - Adventitious sounds
  - Prevention:
    - → Check for **lung sound**
    - → Elevate HOB to **45 degrees** when feeding
    - → Remain up for **an hour after feeding**
- Tube related irritations
  - Inspect nose every shift
    - → Don't use **Vaseline but use water-soluble loop**
  - Oral and nasal hygiene
    - → Keep in mind that **mouth gets very dry**
- Fluid volume deficit
  - s/s
    - → Dry skin and mucous
    - → Decreased UOP
    - → Lethargy
    - → Lightheadedness
    - → Hypotension
    - → Increased HR
  - Nurs management:
    - → Record **i&o** and **daily weights**
    - → Do **blood work** daily to prevent imbalances
    - → Correct fluid deficit and electrolyte imbalance (esp. **hyponatremia** and **hypokalemia**)

Miscellaneous Nursing Interventions

- If pt feels nauseous after NG tube insertion for decompression:
  - **Check output** (there should be drainage)
- If pt starts **throwing up** after NG tube insertion:
  - Flush the tube **with sterile saline (at least 30cc)** with syringe and re-hook to suction; make sure **drainage is present**
- If NG tube has no draining:
  - Turn the tube around to ensure that the tube is properly placed in GI tract; you may have to re-insert if there's tube is misplaced

- A pt begins to vomit after inserting an NG tube, what are your next steps?
- A pt's NG tube has no draining, what are your next steps?

Peritonitis

- Define **peritonitis**
- What is the worse outcome caused by peritonitis?
- What should you check for (s/s) if you suspect peritonitis?
- What are some common causes of peritonitis?

Paralytic Ileus

- Define **paralytic ileus**
- What happens to a pt's bowel with paralytic ileus?

- A pt complains of severe pain that worsens with movement in abdomen. He guards the abdomen. What do you suspect? What should you assess for?
- What are some common causes of paralytic ileus?

Diagnosis of Peritonitis

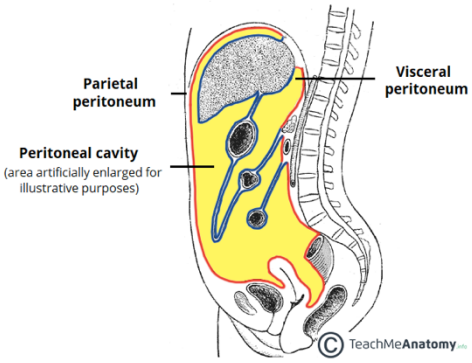
- What are 5 tests that can diagnose peritonitis?

- If pt has peritonitis, CBC will have which results?

- What do you expect the x-ray or CT to look like for a pt who has peritonitis? What about ultrasound?

PERITONITIS

- **Def:** inflammation of the peritoneum
- Can lead to **sepsis** (very serious)
- s/s:
  - **Rebound tenderness**
  - **Pain**
  - **Guarding**
  - **Rigidity** (emergency!)
  - **Distention**
  - **n/v**
  - **Paralytic ileus** –immediate response!
- Common causes:
  - **Injury/trauma in GI → perforation**
  - **Bacteria in GI** or **reproductive system for females**

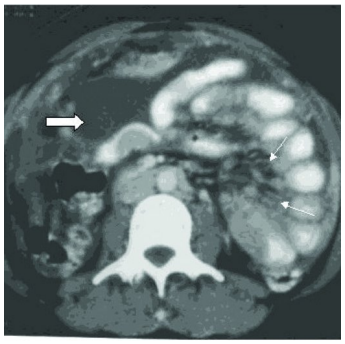


Paralytic Ileus

- **Def:** intestinal obstruction and paralysis; not physical obstruction but a problem in muscle or nerve (functional)
- Lack of peristalsis
- Air and fluid accumulation in bowel
- An immediate response to **peritonitis**
- s/s:
  - **Absent bowel sounds**
  - Diffuse pain
    - → Constant, localized, more intense over site, and worse with movement
  - Anorexia, n/v
- Most often caused by:
  - Surgery
  - Narcotics
  - Peritonitis

Diagnosis of Peritonitis

- CBC will indicate:
  - **Increased WBC**
  - Low **H n H**
  - Altered levels of **K+, Na+,** and **Cl-**
- Abdominal fluid or blood culture
- X-ray:
  - Shows air, fluid, and any distended bowel loops
  - Can visualize **area of perforation**
- Ultrasound
  - Show **abscess** and **fluid collection**
- CT scan



Complications

- What are the main complications of peritonitis?

- What are the priority nurs interventions for a pt who has peritonitis? (in order)

Nurs Management

- A pt is admitted for peritonitis, what are some nurs managements for that pt?

- What can you do to manage pain caused by peritonitis?

Treatment

- What are some treatment options for peritonitis?
- A pt was admitted for severe peritonitis and has undergone surgery for it. What is the main treatment plan once he is out?
- Why might a surgeon to surgery to treat peritonitis?

- A pt just came out from surgery due to peritonitis, what are your interventions?

Complications

- Intestinal obstruction
- Sepsis
- Shock (due to **sepsis** or **hypovolemia**)

Priority Nursing Interventions

1) Check v/s **every 4 hrs or more frequently**
2) Fluid and electrolyte replacement per orders
3) Strict **I and o** and daily weights
4) **Give antibiotics**
5) Transfer pt to ICU if needed (esp. if pt has sepsis, shock, or unstable v/s)

Nursing Management

- Assess abdomen and check NG tube placement
    - Mouth and nose care
- Check fluid and electrolyte imbalance
- Check v/s
- Nutritional support
    - Keep pt **NPO** and administer **TPN or PPN**
- Manage n/v
- Pain management
    - **Give opioid analgesics**
    - Position pt on **side with knees flexed** to decrease tension
- Post-op care: **monitor incision**

Treatment

- **Fluid, colloid, and electrolyte replacement** –main focus
- Surgery
    - Purpose:
        - → Remove infected material
        - → Correct cause like perforation
        - → Insert drains
    - Common post-op complications:
        - → **Wound dehiscence**
            - ✓ Pt may say that he/she feels like "something gave way"
            - ✓ Very sudden **serosanguineous wound drainage**
        - → Abscess formation
- Drain fluid/abscess
- NG suction
- Antibiotics
- Antiemetic

INTESTINAL OBSTRUCTION

- Mostly in small intestines
    - Most commonly caused by **surgical adhesion** (60-70%)

Intestinal Obstruction

- What is the most common cause of intestinal obstruction?

- Differentiate mechanical obstruction vs functional one.

- What are the causes of mechanical obstruction?

- Which type of obstruction can lead to paralytic ileus?

- A pt just came out from GI surgery to repair obstruction. You should be careful when giving _____ b/c it can prolong paralytic ileus.

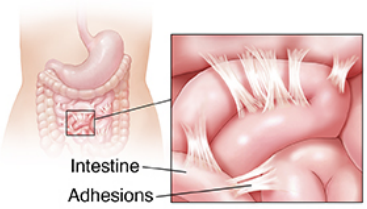
- What are the causes of functional obstruction?

Clinical Manifestations

- What are the initial s/s of intestinal obstruction?

- What are the late s/s of intestinal obstruction?

→ **Adhesion**: bond of tissue together like **scar tissue formation**



- Types:
  - **Mechanical**
  - **Functional**

Mechanical Blockage

- **Def**: blockage that doesn't allow content to pass through
- Causes:
  - Hernias
  - Tumors
  - Carcinoma stool impaction
  - Gallstones
  - **Volvulus** (twisted intestines)
  - Foreign bodies

Functional Blockage

- **Def:** no peristalsis
- Can lead to **paralytic ileus**
  - Paralytic ileus is normal right after surgery for up to **3 days only**
    - → **Opioid use can prolong it though**
- Causes:
  - Abdominal surgery
  - Peritonitis
  - Diabetes
  - Pancreatitis
  - Appendicitis
  - **Hypokalemia**
  - **Narcotics**
  - Lumbar and thoracic fracture

Clinical Manifestations

1) Initial symptom:
   - **Crampy, wavelike pain** due to constant peristalsis in attempt to move things
   - n/v
   - Constipation for months
   - Distention
   - Unable to pass flatus
   - Others
2) Late symptom: peristalsis waves move in reverse direction → **vomiting**
   a. Pt vomits **stomach content**
   b. Pt vomits **bile-stained content**
   c. Pt vomits fecal-like content (if obstruction is in **ileum**)
   d. Pt gets severely dehydrated and can lead to **shock**

Assessments

- A pt comes in with suspected intestinal obstruction, what are the physical assessments you should do?
- A pt comes in with suspected intestinal obstruction, what are some questions you may want to ask and s/s to check for?
- What are some s/s of bowel perforation?

Diagnosis and Treatment

- What are the 2 diagnostic tests for intestinal obstruction?
- What are some nurs interventions to treat bowel obstruction (ex: keeping pt NPO)

IBD

- Differentiate **Crohn's vs ulcerative colitis** (location, bleeding, stool characteristics, and treatment)

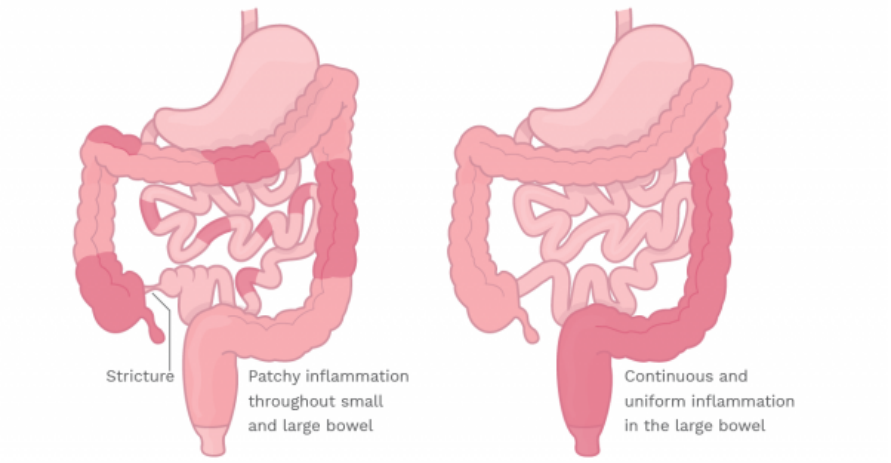
Assessments

- Physical:
  - **Bowel sounds** –high pitched above the obstruction site and absent below
  - **Tenderness**
  - **Distention**
- Vomiting that reliefs abdominal pain
  - Check type of pain
- Check for **s/s of bowel perforation** as it is highly likely
  - Rectal bleeding
  - Sudden abdominal pain
  - Distention
  - Others
- Check history for:
  - Recent surgery in abdomen
  - Bowel issues

Diagnosis and Treatment

- Diagnostic test
  - X-ray
  - CT
- Treatment
  - NPO
  - Insert NG tube for suction
  - IV fluid
  - K+ replacement
  - Nutritional support (via TPN or IV)
  - Prep for possible colonoscopy
    - → To **untwist and decompress** colon
  - **If obstruction is due to strangulation, pt needs immediate surgery**

INFLAMMATORY BOWEL DISEASE



Clinical Manifestations

- A pt has severe diarrhea with rectal bleeding and fluid imbalance. Which IBD do you suspect?
- A pt has diarrhea, weight loss, fatigue, and severe LLQ, which IBD do you suspect?
- A pt has diarrhea and rapid weight loss, which IBD do you suspect?

Diagnostic Studies

- A pt comes to ER with suspected IBD, which tests do you anticipate to do?
- What are the test results going to look like for ulcerative colitis?

Drug Therapy

- What are some general meds that can be used drugs IBD? (name 5 types)
- A pt was prescribed **sulfasalazine** for her IBD but found out that she has sulfa allergy, what are some alternatives?

- Name some antidiarrheal meds for IBD

- Types:
  - **Chron's disease**
  - **Ulcerative colitis**

	Crohn's	Ulcerative Colitis
Location	Ileum, ascending colon Can effect small intestines	Rectum, descending colon Does not occur in small intestines
Bleeding	If occurs, is mild	Common-Severe
Diarrhea	Less Severe	Severe
	Partial or complete colectomy with ileostomy	Proctocolectomy with ileostomy

Clinical Manifestations

Ulcerative colitis	Crohn's
- **Diarrhea with mucous, blood, and pus (10-20 liquid stool/day)** - **Rectal bleeding** - LLQ pain - **Pallor, anemia, and fatigue due to vomiting** - Weight loss - Electrolyte imbalance - Remission and relapse	- **Diarrhea** (less severe) - Dehydration - No bleeding or mild - **Rapid weight loss (malabsorption)** - Fever and fatigue - **Periods of remission and relapse**

Diagnostic Studies

- History and physical exam
- **Blood studies**
  - **CBC**
  - **Serum electrolyte**
  - **Serum protein**
- **Stool exam and culture**
  - Monitor for pus, blood, and mucous
- X-ray
- Sigmoidoscopy, colonoscopy, barium enema **–for ulcerative colitis only**

Ulcerative colitis: test results
- **CBC (low h/h and high WBC)** - **Low albumin** (due to bad nutrition) - **Electrolyte imbalance**

Complications

Ulcerative colitis	Crohn's
- Hemorrhage - Perforation - Peritonitis - Colon cancer	- Small bowel obstruction - **Severe malnutrition** - Strictures and fistulas (permanent abnormal passageway between 2 organs) - **Anal fissures** - Peritonitis - Others

Drug Therapy

- Depends on severity and location
  - Step up therapy and step down therapy
- Specific meds used: meds containing **5-ASA** like **Sulfasalaz**
  - → Prevents remission and "flare-ups"
  - → Sulfa free versions: **Olsalazine** and **Mesalamine**
- Anti-diarrheal (Imodium, Lomotil, and Questran)

- Which drug is most important to treat IBD in long-term?

- A pt is taking corticosteroid for her IBD, what are some SE you should educate about? What are your interventions?
- A pt asks why she needs to take **infliximab** for her IBD, what is your explanation?

- Which type of immune modulator is used for IBD?

<u>Management of IBD</u>

- What are your interventions for **acute exacerbations** of IBD? What about after exacerbation?
- What are some diet education to give for IBD pts?
- Surgery for IBD can treat _____ but not _____
- A pt asks why she needs surgery for Crohn's if it won't cure her; what is your explanation?
- A pt just came out from surgery to fix Colitis, what are your interventions?

<u>Ileostomy</u>

- If pt has ileostomy, pt cannot regulate _____
- A pt had surgery to get an ileostomy, you check that there is no drainage, what does it mean? What should you do?
- Explain ileostomy care (skin, stoma, pouch, education)

- Pt can develop _____ if he/she does not _____ ASAP

- **Antispasmodics**
- Immunosuppressants (**corticosteroids**)
    - **Cornerstone management**
    - Goal:
        - → **Decrease inflammation and prevent remission and flare ups**
    - SE: puffy face and weight gain due to increased appetite
    - Need to monitor **CBC** regularly to prevent infection and hemorrhage
- Immune modulators: **ends with "mab"**
    - **TNF (anti-tumor necrosing factor) agents**
    - **Integrin receptor antagonist**

Management of IBD

- For acute exacerbation
    - Bowel rest
        - → NPO
        - → IV fluid and parenteral nutrition
- After exacerbation
    - Clear liquid diet and full liquid diet, then low residue diet
    - Vitamin and iron supplements
    - Determine food triggers
- Administer meds (listed previously)
- Diet change
    - Low residue (like refined grains, white rice, gritz, etc.)
    - Educate to peel off skin on fruit and vegetables
    - Avoid **dairy**
    - Avoid **carbonated drinks** (irritates GI tract)
- Surgery and ileostomy
    - Can be curative for ulcerative colitis; **is not curative for Crohn's** but can relieve pain
    - **NG tube care post-op**
    - **Stoma care**

Ileostomy

- **Def:** opening or stoma is made surgically to allow stool to pass
    - Stool will be **liquid to semi-solid**
- Bowel movement cannot be regulated
- There should always be **drainage**
    - Otherwise it means **obstruction** → notify doctor
- Pt will need to increase fluid intake
- Care:
    - Pouch and skin barrier management
        - → **Always keep pouch open**
    - Education provided by **ostomy care nurse**
    - Make sure that **stoma is red and moist**
        - → **Pale, dusky, cyanotic,** and **black** coloration needs immediate help!
    - **Early ambulation** to prevent paralytic ileus; but expect initial paralytic ileus