ABC's of Bowel Management

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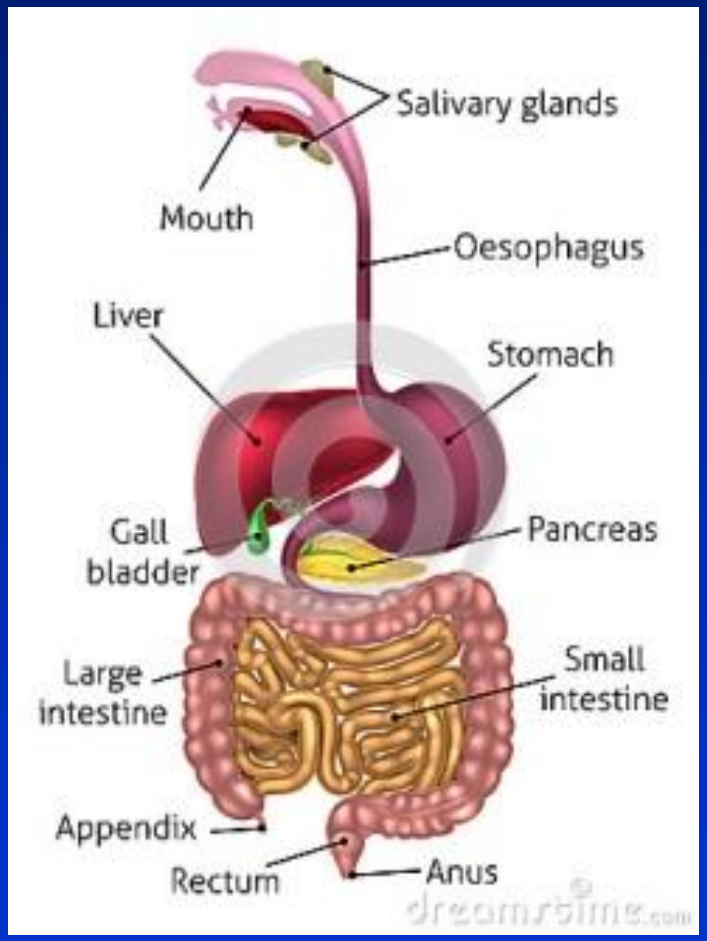
Gastrointestinal (GI) Tract

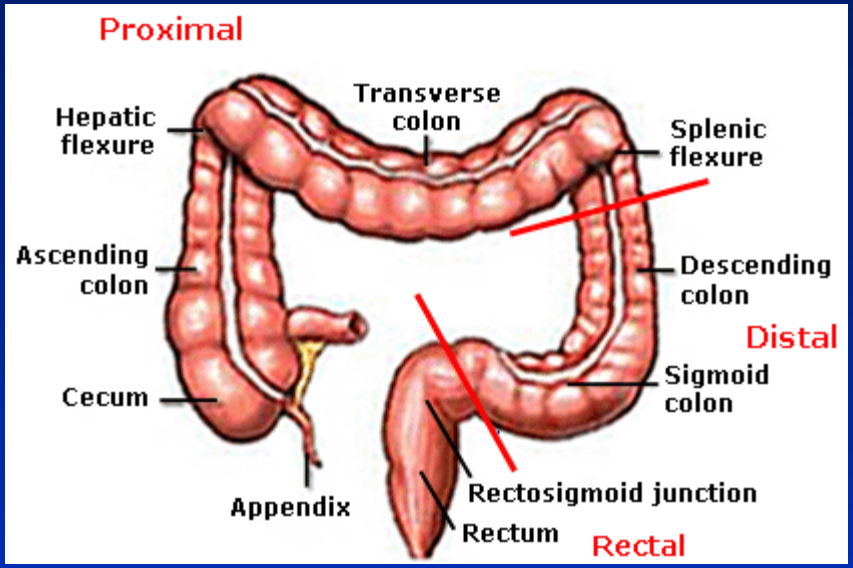


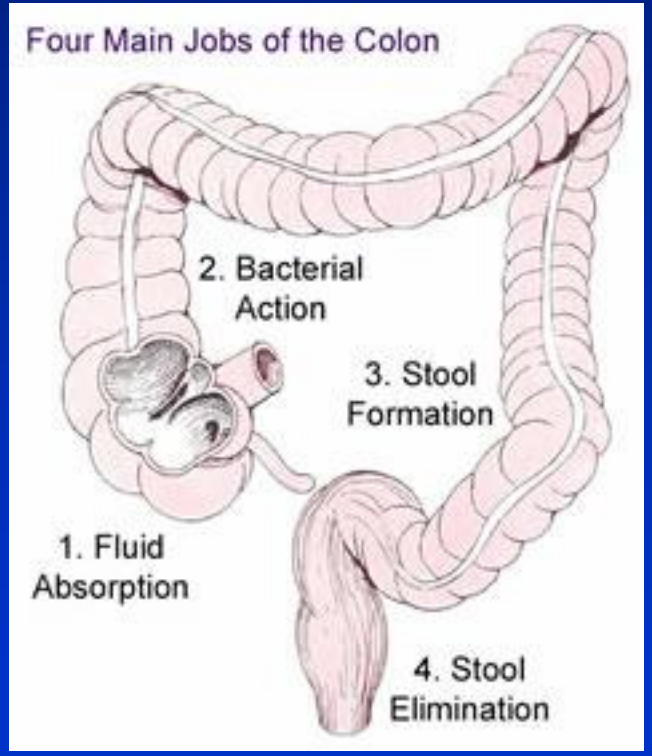
Function of GI Tract

- Primary Functions
  - Digestion of food
  - Absorption of nutrients and fluid
  - Elimination of waste

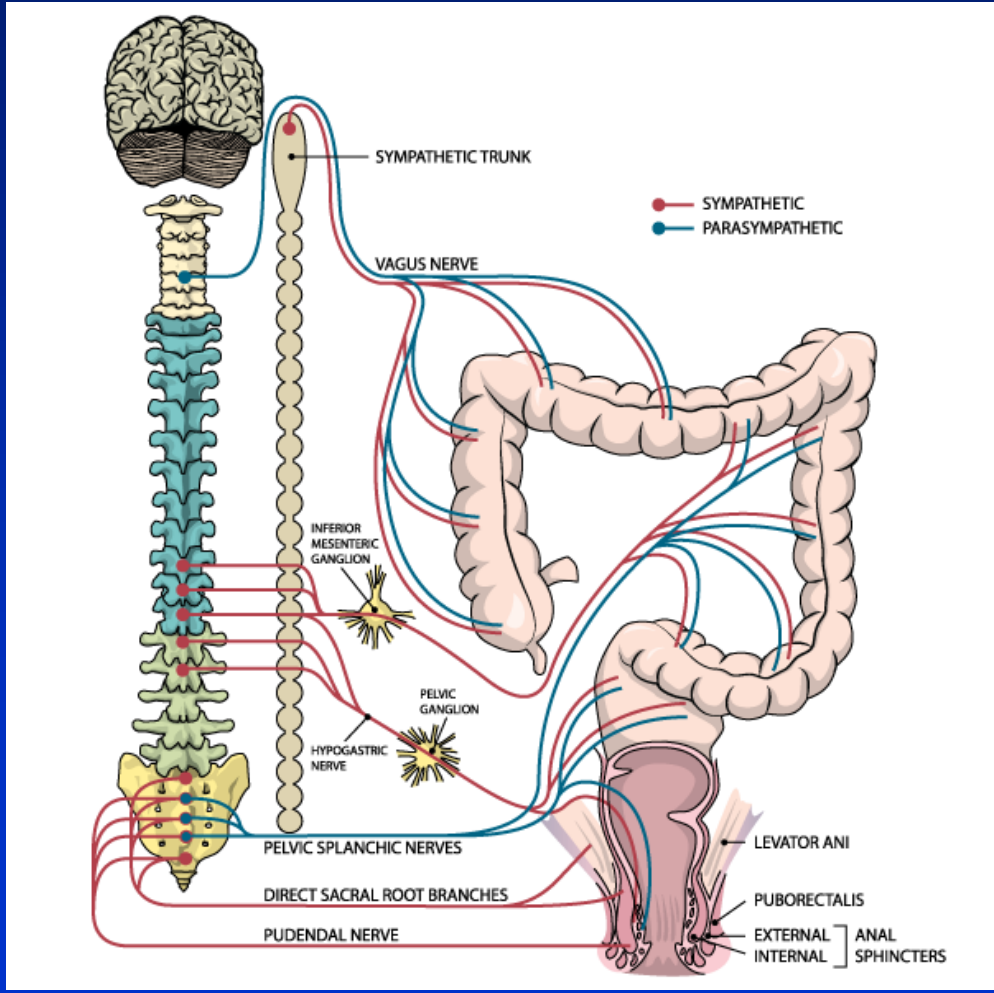
- ***Peristalsis*** is the contraction of the muscles of the bowel causing contents to flow through the GI tract.
  - Can be affected by many things including stress, anxiety, emotional state and physical activity

The Colon (large intestine)





Innervation of the Colon



Normal Function of Colon

- Storage of stool
- Elimination of stool and continence
- Absorption of water
  - The longer the transit time through colon, the dryer and harder the stool
  - The faster the transit time, the looser, more watery the stool
- Bacterial hangout
- When stool enters rectum, causes sensation of fullness (predefecation urge) and often triggers more rapid squeezing of the bowel
- As stool is pushed into the anal canal, the internal anal sphincter relaxes and the external anal sphincter contracts (the anorectal reflex) preventing incontinence.
- Stool, liquid, or gas in the anal canal produces a sensation called the defecation urge. This usually prompts someone to go to the bathroom.
- Voluntary elimination (or bowel movement) in the toilet.
  - Voluntary relaxation of external anal sphincter
  - Valsalva maneuver to increase intra-abdominal and intra-rectal pressure

Neurogenic Bowel

- Nerves from the spinal cord are involved in anal and rectosigmoid function, primarily S2 to S4
- From 90 to 95% of people with spina bifida will have some impairment of the nervous system affecting bowel function
  - Impaired voluntary control of external anal sphincter
  - Impaired automatic function of internal anal sphincter
  - Impaired anal and rectal sensation
  - Impaired sensation of the perianal skin
  - Impaired peristalsis through the lower colon
  - Impaired control of muscles used in having a bowel movement

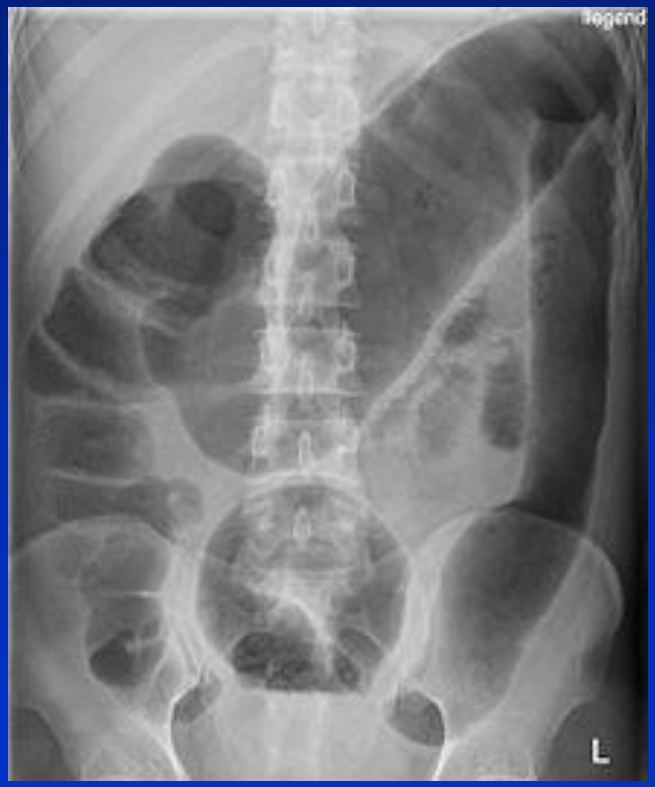
Patterns of Neurogenic Bowel Dysfunction

- Loose anal sphincter with constipation
- Loose anal sphincter with frequent stools
- Tight anal sphincter with constipation

Consequences of Neurogenic Bowel Dysfunction

- Constipation: hard stools, infrequent stools, incomplete bowel emptying
- Significant stool retention → dilatation of the rectum and bowel
- Dilatation of the bowel impairs bowel function
- Constipation and dilatation of the bowel can effect lower urinary tract function
  - Increased urinary incontinence
  - Increased risk of urinary tract infection
- Fecal incontinence
  - Can restrict participation in activities
  - Effects on self-esteem
  - Effects on social acceptance

Megacolon



Factors Affecting Constipation

- Fluid intake
- Food intake
- Bowel flora (bacteria)
- Bowel transit time
- Physical activity
- Medications
  - Anticholinergic medications like oxybutynin make constipation worse
- Emotional state, stress, etc.

Bristol Stool Scale

Type 1 Separate hard lumps, like nuts

Type 2 Sausage-like but lumpy

Type 3 Like a sausage but with cracks in the surface

Type 4 Like a sausage or snake, smooth and soft

Type 5 Soft blobs with clear-cut edges

Type 6 Fluffy pieces with ragged edges, a mushy stool

Type 7 Watery, no solid pieces

Symptoms of Constipation, →Obstipation → Impaction

- Hard stools
- Straining
- Infrequent bowel movements
- Diminished appetite
- Fecal and urinary incontinence
- Abdominal discomfort / cramps
- Nausea and vomiting

Bowel Continence is Very Important

- Adults with SB rate bowel incontinence as one of their top challenges
- Bowel continence significantly affects quality of life
- Affects social relationships

Evaluation

- History
  - Past surgeries
  - Bowel habits/pattern
    - Incontinence
  - Dietary habits including fluid intake, foods that trigger incontinence
  - Medications
  - Previous treatments (what has been tried and what happened)
- Exam
  - Neurologic exam
  - Abdominal exam
  - Rectal exam
- Radiologic studies (optional)
  - Abdominal x-ray
  - Barium or Gastrograffin enema
- Patient goals

Goals of Treatment

- Treat constipation
  - Prevent symptoms
  - Prevent progression to obstipation or impaction
- Prevent dilatation of the bowel
- Continence or timed evacuation
  - Incontinence is involuntary leakage of stool, with or without intervention
  - Evacuation of bowel at acceptable time with no accidents in between
- Social acceptance
- Prevent skin breakdown

Bowel Program

- A bowel program is a regimen or intervention designed to promote evacuation of the bowel at socially acceptable times
- Bowel training is trying to regulate the bowel to have regular bowel movements on a commode/toilet

Bowel Management Strategies

- Dietary (and fluid) management
- Bowel training / Timed toileting
- Oral medications
  - Fiber products (psyllium,
  - Stool softeners (docusate, polyethylene glycol, lactulose, mineral oil)
  - Osmotic laxatives (polyethylene glycol, lactulose)
  - Stimulant laxatives (senna, bisacodyl)
- Digital stimulation
- Suppositories
- Enemas
- Anal plugs
- Biofeedback

Diet

- Some foods cause loose stools/diarrhea
  - Fresh fruit, hot condiments, corn, chocolate, etc
- Some foods slow things down and can exacerbate constipation
  - Starches (rice, bread), bananas, dairy products
- Monitor diet and effects on bowel habits to determine how different foods affect you/your child
- Dietary management of constipation
  - Adequate fluid intake
  - Juices, fruit and vegetables
    - Prune juice

Bowel Training

- Bowel training for typically developing children usually occurs between 2 and 3 years of age
- Neurogenic bowel dysfunction makes it much harder
- Bowel training is possible
- To achieve bowel training
  - Need to prevent dilatation of the bowel
  - Treat constipation

Readiness

- Is your child aware of other family members using the toilet?
- Is your child familiar with words such as potty and diaper?
- Does your child use a sign (or communicate) to indicate that he or she is ready to have a bowel movement?
- Is your child able to sit on a potty-chair for 5 to 10 minutes?
- Does your child indicate, or have you observed, a regular time during the day when his or her bowel movements seems to occur?
- Is your child able to remove and replace pants and underclothing?
- If majority are yes, then he/she is a candidate for toilet training.

Steps to Bowel Training

- Choose a word for bowel movement and use it consistently
- Have a potty chair or commode that is appropriate. Feet should touch the floor. Armrests can be helpful.
- Teach the child to pull down pants and then underpants
- Place the child on the potty about 15 to 20 minutes after meals taking advantage of the gastrocolic reflex. Start with 3 to 5 minutes per episode increasing as tolerated up to 10 minutes.
- Make sitting on the potty fun.
- Assist the child in recognizing when he/she is eliminating
- Help the child wipe himself
- Teach the child to flush the toilet
- Assist with handwashing after toileting
- Use verbal praise for successes.

Timed Toileting

Oral Medications

- Fiber products: Metamucil (psyllium), Fibercon (polycarbophil), Benefiber (wheat dextrin), Citrucel
- Stool softeners: **docusate**, **polyethylene glycol** (Miralax), **lactulose**, mineral oil
- Osmotic laxatives: **polyethylene glycol**, **lactulose,** milk of magnesia (magnesium)
- Stimulant laxatives: **bisacodyl**, **senna**, castor oil, cascara sagrada, others
- Newer GI agents for Constipation: Amitiza (lubiprostone), Linzess (linaclotide), Zelnorm (tegaserod)
- Probiotics (good bacteria)

Docusate

- Over-The-Counter (OTC)
- Brand Names (oral): Colace, Dulcolax Stool Softener
- Brand Names (rectal enema): Enemeez Mini, DocuSol Kids, Vacuant Mini-enema
- Surfactant laxative and stool softener
  - Reduces surface tension of the oil-water interface resulting in enhanced incorporation of water and fat into the stool (softening it)
- Oral docusate sodium, 1 to 2 times a day
  - Capsules or liquid

Senna

- Over-The-Counter (OTC)
- Common Brands: Senokot, Perdiem, Ex-Lax
- Stimulant laxative
- Typically takes 6 to 24 hours to work
- Can be taken routinely (daily or every other day) or just as needed (PRN)
- Should be given to synchronize with timed evacuations
- Docusate & Senna Products (have both)
  - Brand Names: Peri-Colace, Senokot-S, Senna Plus, etc.

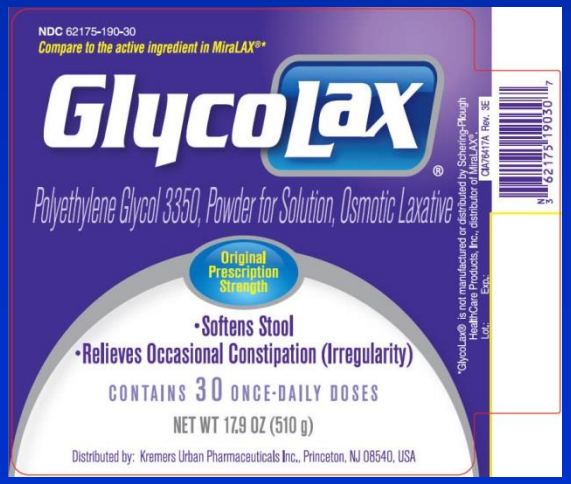
Bisacodyl

- OTC
- Oral Brands: Dulcolax, Ex-Lax Ultra, Fleet Laxative
- Rectal Brands: Dulcolax suppositories, The Magic Bullet, Fleet Bisacodyl (enema)
- Stimulant laxative
  - Stimulate peristalsis by directly irritating smooth muscle of the intestine
- Onset typically 6 to 12 hours
- 5 mg tablets only. Should not be crushed.
- Can cause cramping

Polyethylene Glycol

- OTC
- Brands: Miralax, Glycolax
- Osmotic laxative and stool softener
- It is a powder. Relatively tasteless. Can be mixed with any drink, 1 tsp/ 2 oz drink.
- Give once or twice a day.
- Dose can be measured in teaspoons and titrated to effect. Typically goal of soft bowel movement daily.
- Does not cause gas or cramping

Polyethylene Glycol



Lactulose

- Prescription (Rx)
- Indigestible sugar
- Osmotic effect
- Also broken down in colon producing gas and breakdown products which promote evacuation

Oral Meds versus Rectal Intervention

- Oral medications generally do not improve continence and often make it worse
- Oral meds can be an important part of bowel program when paired with rectal intervention to promote bowel evacuation at a convenient time

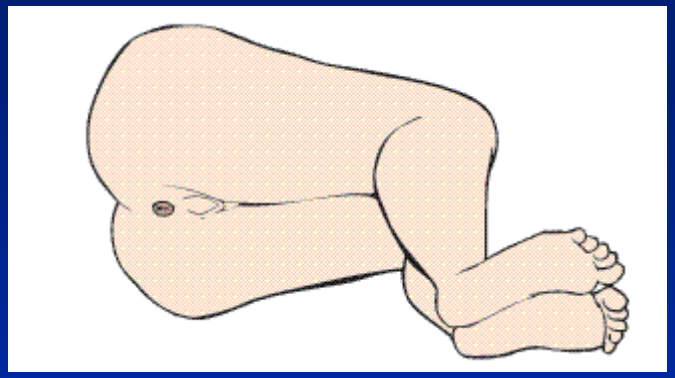
Enema/Suppositories

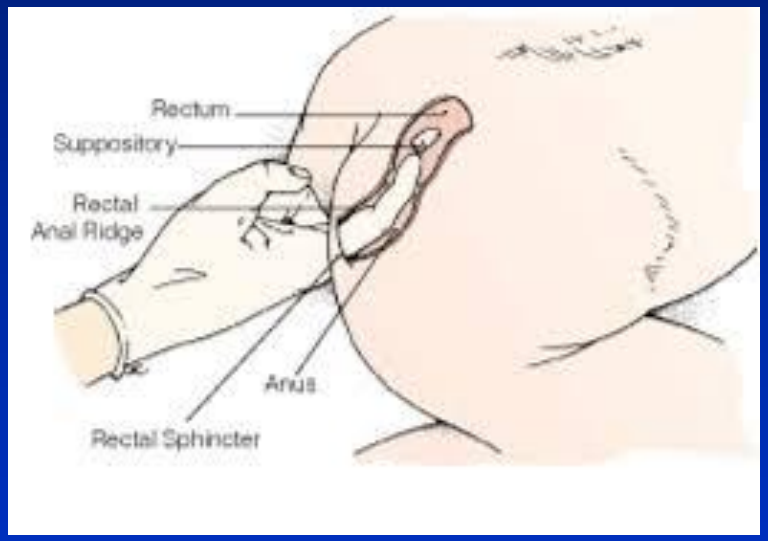
Suppositories

Suppositories

- Two main types
  - Bisacodyl (Dulcolax, Fleet, Magic Bullet)
    - Stronger stimulant
  - Glycerin
    - Milder
    - Often first suppository used in young children
- Usually work in 15 to 30 minutes
- Can administer at convenient time
- Challenges
  - Self-administration
  - Keeping it from shooting back out
  - Ineffective for some patients

Suppository Administration





Types of Enemas

- Retrograde
  - Standard Fleet enema (saline)
  - Mini enema (Enemeez, etc)
  - Cone enema (Convatec, others)
  - Peristeen (made by Coloplast)
- Antegrade (require a surgical procedure)
  - Malone Antegrade Continence Enema (MACE or ACE)
    - Appendicocecostomy
  - Chait Cecostomy
    - A pigtail or gastrostomy in place

Enema


Fleet
enema
LATEX FREE


Fleet
DOCTOR #1 RECOMMENDED
Enema
mineral oil
lubricant
laxative
ready-to-use
sodium free
latex free
Soft, Flexible Comfortip.
4.5 Fl Oz (133 mL)
*Laxative Brand
Fleet
DOCTOR #1 RECOMMENDED
Enema
mineral oil
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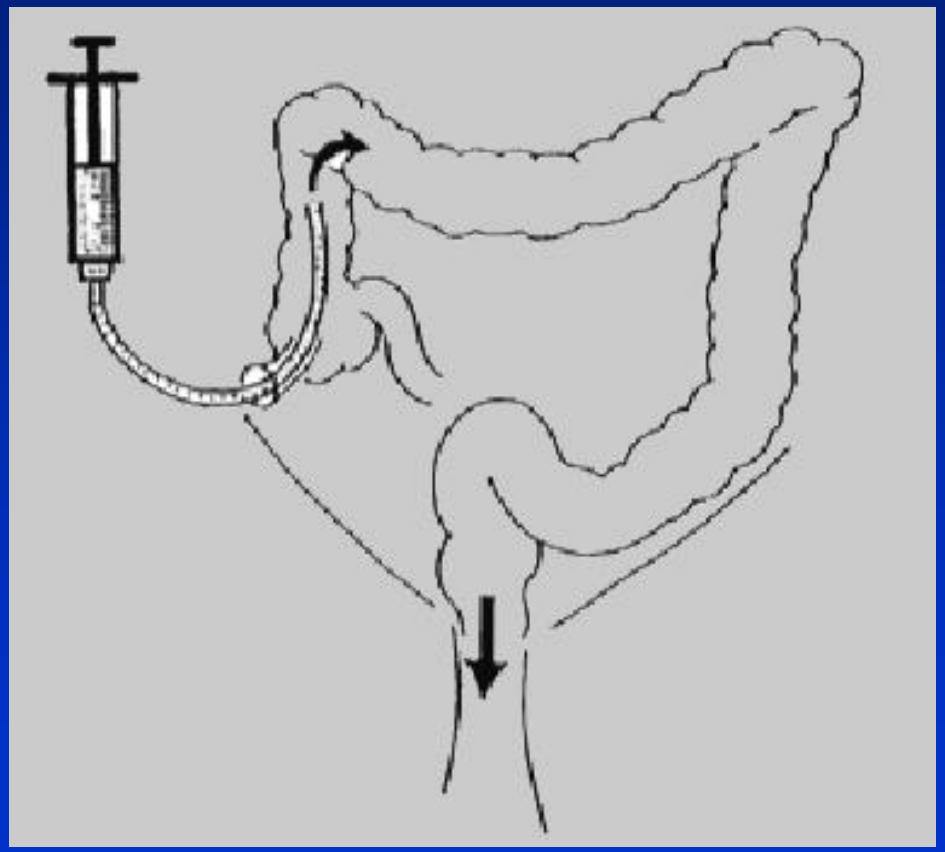
*Laxative Brand

The Mini Enema

The Antegrade Continence Enema (ACE)



Peristeen

School

- Bowel management or continence can be put into IEP or 504 plan
- Review needs with the school
- Request needed accommodations including
  - Special bathroom
  - Equipment and supplies
  - Supervision of toileting program or aide
- May need permission to leave class
- May have toileting schedule

Reconditioning the Dilated Bowel

- Start with a bowel cleanout
- Then aggressive maintenance therapy with goal of preventing stool retention
- May worsen continence for a period of time

Barriers to Compliance

- Executive function
- Eye/hand coordination
- Physical limitations
- Available bathroom/space
- Caregiver not available
- Lack of acceptability
- Chaotic schedule
- Denial

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