

Bowel Dysfunction

Presented by

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adapted from

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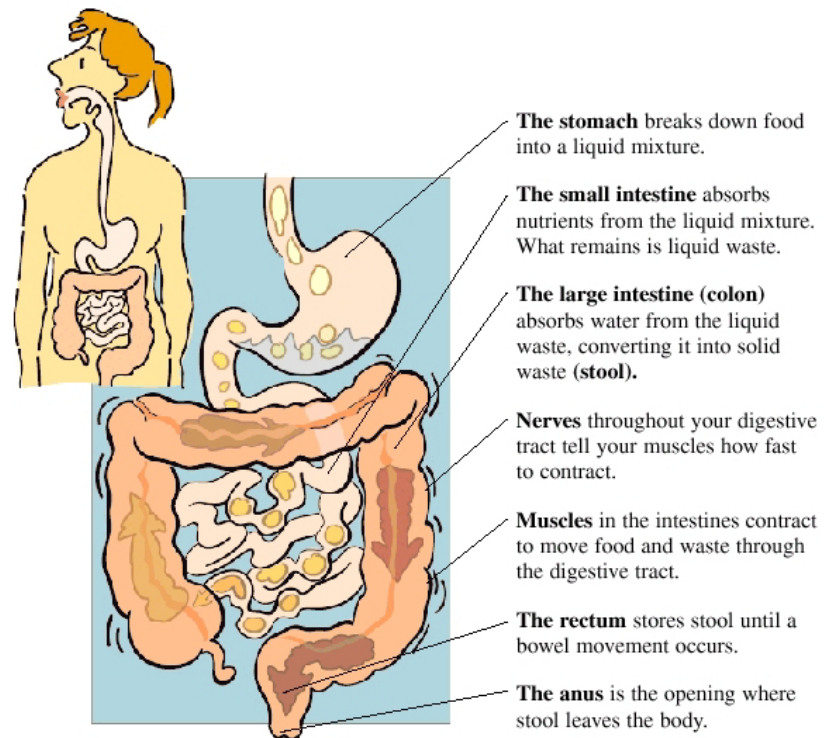
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Objectives

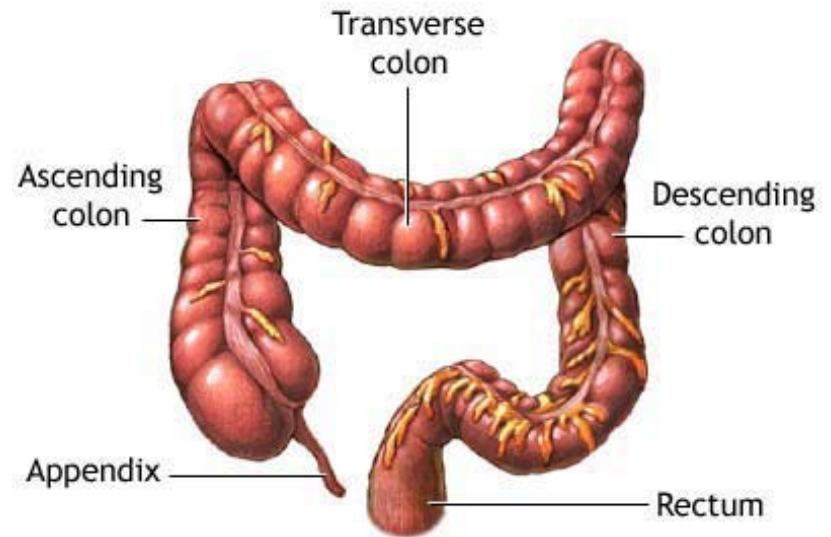
- Review GI anatomy and bowel function
- Explain neural control of bowel activity
- Define neurogenic bowel dysfunction (NBD)
- Differentiate reflexic vs areflexic bowel
- Review management strategies and medications
- Discuss pediatric considerations
- Practice CRRN-style questions

GI Anatomy Overview

- Mouth → Esophagus → Stomach → Small Intestine → Large Intestine → Rectum → Anus
- Accessory organs: liver, pancreas, gallbladder
- Function: digestion, absorption, elimination

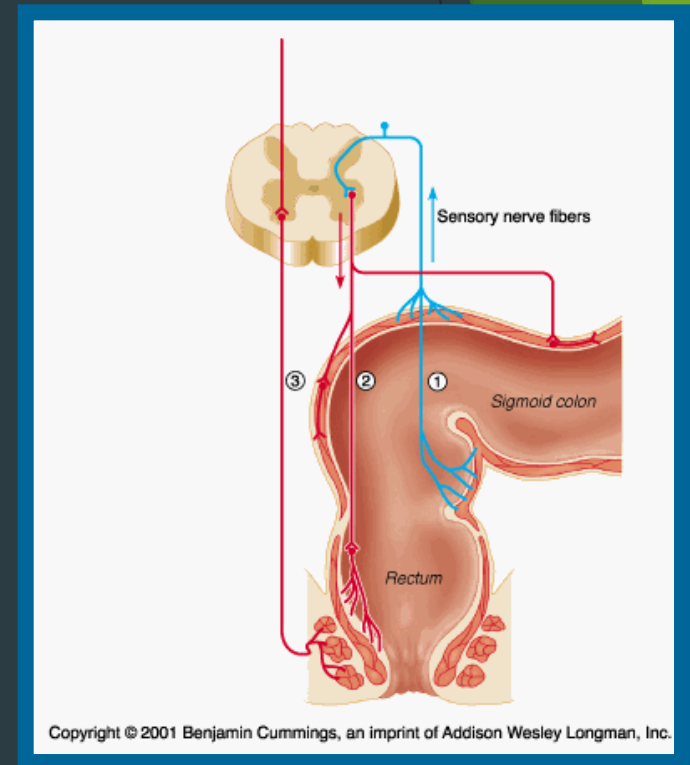


Large Intestines



Pudendal Nerve

- ▶ Runs from the sacral spinal cord S2-S4 to the anal region
- ▶ Provides motor control and sensory feedback to external anal sphincter
- ▶ Intact- Urge and control is present
- ▶ Damaged- leakage or incontinence can occur



Normal Bowel Function

- Coordinated peristaltic movement of stool
- Reflex and voluntary control of defecation
- Parasympathetic → stimulates motility
- Sympathetic → inhibits motility
- Pudendal nerve (S2-S4) controls external sphincter

Ingredients for Normal Stool Formation

- ▶ Adequate fiber
- ▶ Adequate fluid
- ▶ Activity and mobility
- ▶ Upright posture



Lifespan Bowel Pattern

- ▶ Infants - No Voluntary control everything happens by REFLEX
- ▶ Children - Begin to feel the urge
- ▶ Adults - Voluntary control
- ▶ Older Adult - Decrease in motility, sensation and weakening of pelvic floor sphincter muscles

Neurogenic Bowel Dysfunction

- Loss of normal bowel control due to nervous system injury
- Causes: SCI, MS, Spina Bifida, Stroke, TBI, Diabetes
- Results in constipation, incontinence, or both

Types of Neurogenic Bowel Dysfunction

- Reflexic (UMN, above T12): reflex intact, sphincter hypertonic
- Areflexic (LMN, below T12): flaccid bowel, no reflex activity
- Treatment depends on reflex presence and tone

Upper Motor Neuron: Reflexic Neurogenic Bowel

- ▶ T12 or higher
- ▶ Peristalsis, external anal sphincter (EAS) and pelvic floor muscles remain intact
- ▶ Stool builds up until reflex is triggered
 - Digital stimulation
 - Suppository/enema
- ▶ EAS relaxes and bowel movement occurs

Nursing Management of Upper Motor Neuron:

- ▶ Develop regular bowel program
- ▶ Manage stool consistency

Reflex Stimulation

- ▶ Gastrocolic Reflex
- ▶ Digital Stimulation
- ▶ Suppository
- ▶ Enema

Lower Motor Neuron: Areflexic Neurogenic Bowel

- ▶ SCI damage below T 12-S1
- ▶ No cortical control
- ▶ Lack of tone at internal and external sphincters
 - ▶ Higher risk of bowel accidents
- ▶ Damage to sacral reflex arc at S2-S4
- ▶ Peristalsis decreased
- ▶ Associated with constipation and increased risk of incontinence

Nursing Management of Lower Motor Neuron:

- ▶ High-fiber Diet (to bulk stool)
- ▶ Fluid Intake 1800-2200 ml /day
- ▶ Stool Softener every day or BID
- ▶ Suppositories are not effective
- ▶ Manual evacuation
- ▶ Plan for accidents
- ▶ Keep rectal vault clear

Reflexic vs Areflexic Programs

- ▶ Reflexic (UMN): rectal stimulant + digital stimulation; scheduled routine
- ▶ Areflexic (LMN): manual evacuation; soft stool maintenance
- ▶ Consistency = Control

Uninhibited Neurogenic Bowel: Damage to Brain

Common Causes

- ▶ Stroke
- ▶ TBI
- ▶ Brain Tumor
- ▶ MS
- ▶ Cerebral Palsy

Symptoms

- ▶ Sudden urge incontinence
- ▶ Spontaneous evacuation

Nursing Management: Uninhibited Neurogenic Bowel

- ▶ Establish regular bowel routine
- ▶ Respond quickly to the urge
- ▶ Encourage fiber and fluids
- ▶ Medications

Autonomic Dysreflexia

Abnormal or exaggerated reaction of the ANS to stimuli

Occurs at or above the T6 level and can be life threatening.

Symptoms:

Pounding headache, flushed skin & sweating above level of injury, blurry vision, nasal stuffiness, goose bumps, nausea, and elevated blood pressure.

Causes:

Full bladder or bowel, infection, constipation, skin ulcers, traumatic pain (broken bones or cuts) below level of injury, tight clothing, tests & procedures (cysto, GYN), ingrown toenails, or any painful stimulus below level of injury.

Paralytic Bowel

- ▶ Paralysis of bowels
 - ▶ Peristalsis slows down or completely stops
 - ▶ Gastroparesis
 - ▶ Can cause obstruction and blockage of the intestinal content
- ▶ Diabetes or Tabes Dorsalis
- ▶ Rarely produces incontinence
- ▶ Constipation
- ▶ Management
 - ▶ Monitor patient for s/s of Ileus
 - ▶ Provide rest to the intestine
 - ▶ Keep patient NPO
 - ▶ Administer nutrition per dietitian recommendations

Ileus-Temporary stop or slowdown of peristalsis

Causes

- ▶ Abdominal surgery
- ▶ Medications
- ▶ Electrolyte imbalances (low potassium/mag)
- ▶ Infections or severe illness
- ▶ SCI/Trauma

Signs & Symptoms

- ▶ Absent bowel sounds
- ▶ Abd distention, bloating
- ▶ Pain or cramping
- ▶ Nausea and vomiting
- ▶ Little or no stool or gas output

Ileus: Nursing Management

- ▶ Monitor bowel sounds and abd distention
- ▶ Encourage ambulation if appropriate
- ▶ NPO until bowel activity returns
- ▶ Notify provider
- ▶ NG tube

Tabes Dorsalis

Slow degeneration of the nerve cells and nerve fibers that carry sensory information to the brain.

- ▶ Untreated syphilis infection

Symptoms

- ▶ Weakness
- ▶ Diminished reflexes
- ▶ Unsteady gait, loss of coordination
- ▶ Pain
- ▶ Dementia, deafness, visual impairment

Affects more middle aged men than middle aged women

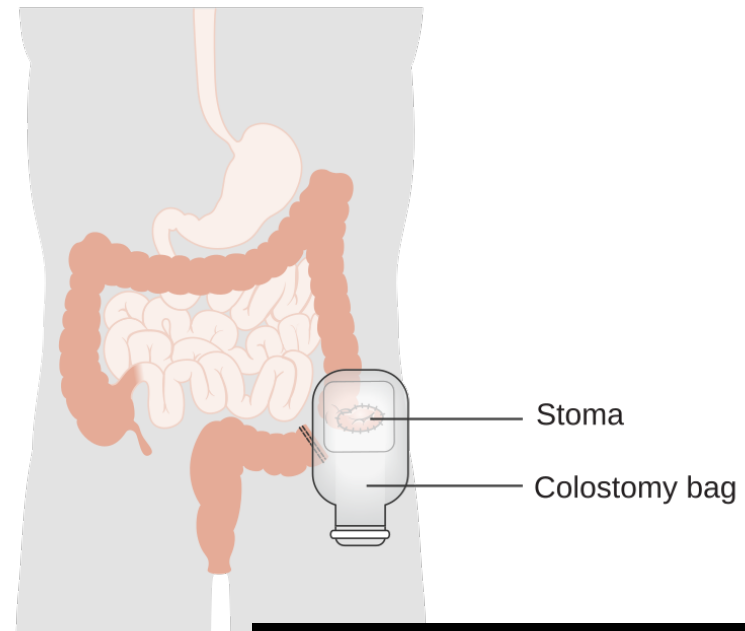
Pediatric NBD

- Common in Spina Bifida, CP, Sacral Agenesis
- Focus: continence, independence, family education, prevention of complications
- Early bowel programs and psychological support are vital

Colostomy & Ileostomy

Artificial openings on abdominal wall

- ▶ Malignant tumors
- ▶ Ulcerative colitis
- ▶ Abdominal resection
- ▶ Neurogenic bowel



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BRISTOL STOOL CHART



Type 1 Separate hard lumps

SEVERE CONSTIPATION



Type 2 Lumpy and sausage like

MILD CONSTIPATION



Type 3 A sausage shape with cracks in the surface

NORMAL



Type 4 Like a smooth, soft sausage or snake

NORMAL



Type 5 Soft blobs with clear-cut edges

LACKING FIBRE



Type 6 Mushy consistency with ragged edges

MILD DIARRHEA



Type 7 Liquid consistency with no solid pieces

SEVERE DIARRHEA

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Bristol Stool Chart

Constipation: Infrequent or Difficulty Passage of stool

Acute - Recent onset < 12 weeks

Chronic - Functional bowel disorder

Severe - Lasts longer than 3 months with 2 or more of the following:

Straining

Hard dry stool

Sensation of incomplete emptying

Fewer than 3 spontaneous movements per week

Nursing Assessment

- ▶ Patient History
- ▶ Prior Bowel Pattern/Management
- ▶ Present Bowel Pattern/Management
- ▶ Current Medications
- ▶ Medical History

- ▶ Acute Constipation
 1. Evaluate perineum
 2. Assess for hemorrhoids
 3. Administer medication
- ▶ Chronic Constipation
 1. Increase fiber
 2. Increase activity
 3. Increase fluid
 4. Patient education

Nursing Management

Complications of Constipation

Obstruction

- Medical Emergency

Bowel sounds

- High pitched or absent

Obtain Abdominal X rays
to r/o obstruction

Transfer patient off unit
to a higher level of care

Diarrhea- Frequent Passage of Loose, Watery Stool

- ▶ 3 or more times in a day
- ▶ Common Causes:
 1. Infection
 2. Food intolerance
 3. Medication
 4. Stress/Anxiety
 5. Inflammatory Bowel Diseases (Crohn's, UC or IBS)

Diarrhea

Acute Diarrhea

- ▶ 3 loose or liquid stool in 24 hrs.
- ▶ Viral or bacterial infection

Small intestines -

- ▶ Watery stools
- ▶ Hyperactive bowel sounds

Large intestines- Indicates infection

- ▶ Abdominal pain
- ▶ fever

Chronic Diarrhea

- ▶ Lasting >30 days
- ▶ IBS

Symptoms

- ▶ LLQ pain
- ▶ Feeling of incomplete bowel evacuation

Nursing Management



Replace fluid loss



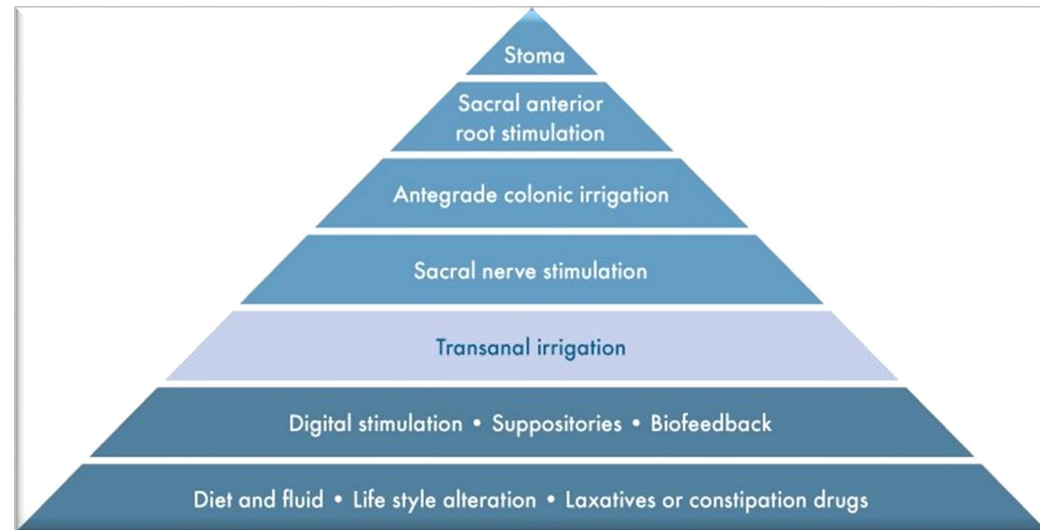
Obtain stool sample



Administer medication
to slow motility and/or
stabilize gut

Bowel Management

- ▶ 1. Diet & Fluids | Lifestyle | Laxatives or Constipation Drugs
- ▶ 2. Digital Stimulation | Suppositories | Biofeedback
- ▶ 3. Transanal Irrigation
- ▶ 4. Sacral Nerve Stimulation
- ▶ 5. Antegrade Colonic Irrigation
- ▶ 6. Sacral Anterior Root Stimulation
- ▶ 7. Stoma (colostomy/ileostomy)



Pharmacologic Management

- Stimulants: Senna, Bisacodyl → increase peristalsis
- Osmotics: PEG, Lactulose → draw water into bowel
- Softeners: Docusate → ease stool passage
- Bulking: Psyllium → increase stool mass
- Rectal agents: Suppositories, mini-enemas

Pharmacologic Management

Oral Laxatives	Medications	Purpose
Stimulants	Bisacodyl, Cascara, Castor Oil, Senna	Increase peristalsis, move feces through faster and keep it soft
Osmotic Laxatives	Lactulose, Magnesium Citrate Go -lytely	Increase stool bulk by pulling water into colon. Increase water intake
Bulk Forming Laxatives	Hydrophilic Muciloid, Methylcellulose, Psyllium	Adds bulk, Fiber to stool. Increase water intake
Stool Softners	Docusate Sodium, Mineral Oil	Help stool retain fluid and soft
Prokinetic Agents	Metoclopramide (Reglan)	Stimulate bowel peristalsis

Pharmacologic Management

Rectal Stimulants	Medications	Purpose
Suppositories 	■ Bisacodyl (Magic Bullet) ■ CO₂ ■ Glycerin	■ Increases colon activity by stimulating (irritating) the nerves in the lining of the colon ■ Produces Carbon Dioxide gas , the gas inflates the colon and stimulates peristalsis ■ Stimulates peristalsis in the colon and lubricates the rectum
Enemas 	■ Mineral oil ■ Mini-enema (Enemeez)	■ Lubricates the intestine ■ Stimulates the rectal lining and softens stool

Summary

- NBD = bowel dysfunction from neural injury
- Two main types: Reflexic vs Areflexic
- Management progresses stepwise up the pyramid
- Pediatric and pharmacologic care are integral parts
- Education, consistency, and interdisciplinary support are key

CRRN Practice Questions

- ▶ Patient with an autonomous neurogenic bowel may experience incontinence during transfers because:
 - a. Anal sphincters are flaccid and do not retain stool under abdominal pressures
 - b. The rectum will reflexively empty when stool enters it
 - c. This problem is associated with stress incontinence
 - d. Sensation is impaired which limits reflex contraction of the external sphincter

Answer

- ▶ A-Anal sphincters are flaccid and do not retain stool under abdominal pressures

CRRN Practice Questions

- ▶ Which bowel program is most appropriate for a patient who has had a spinal cord injury at C5-6:
 - a. a. Enemas given daily in the morning to prevent incontinence during the day
 - b. b. Consistent time of day associated with the gastrocolic reflex, triggering of reflex emptying with suppositories or digital stimulation
 - c. c. Administration of laxatives and suppositories every evening timed within 6 hours of laxative administration
 - d. d. Bulk fiber products used to form stool with toileting time at a consistent time of the day associate with gastro-colic reflex

Answer

- ▶ B- Consistent time of day associated with the gastrocolic reflex, triggering of reflex emptying with suppositories or digital stimulation

CRRN Practice Questions

- ▶ The most common bowel elimination problem is:
 - a. Diarrhea
 - b. Constipation
 - c. Incontinence
 - d. Urgency

Answer

▶ B-Constipation

Thank You / Questions?