

The Neurogenic Bowel - Pathophysiology, Assessment and Management  
Conservative management - lifestyle and rehabilitative treatments  
ICS Annual Meeting Montreal Canada  
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Optimize stool consistency

- Soft enough to pass easily, Solid enough to stay in rectum
- Reflexic evacuation = soft formed stool
- Areflexic evacuation (manual) = firm stool
- I am not a dietician and will give only limited info on diet and fluid changes.
- MD will cover choices of fiber supplements, enemas, stool softeners.
- Foods that increase bowel motility: spicy foods, fatty foods, milk products
  - Avoid caffeine, alcohol, and sorbitol to avoid loose stools (Drake 2013)
- Foods that increase gas: beans, corn, onions, peppers, radish, cauliflower, turnips, cucumbers, apples, melon, broccoli, smoking, chewing gum
- Foods that stiffen feces: cheese, banana, whole grains, vegetables
- Adequate fiber intake
  - Many recommend 15 to 30 mg fiber per day
  - Do not assume dietary fiber affects the transit time of pts with SCI the same as those without neurological dysfunction and it might even result in undesirable changes (Cameron 1996)
  - LMN gut = slow motility - low fiber diet to avoid bloating and gas (Drake 2013 - level B)
  - Parkinson's - insoluble dietary fiber improved stool consistency and increased stool frequency - level 3 (Drake 2013)
- Adequate fluid intake
  - Some evidence that carbonated water improved constipation scores in pts with CVA. (Coggrave 2014)
  - Water intake of more than 2 liters per day was associated with longer bowel care time in pts with SCI (Engkasan 2013)
  - Intake of caffeine may stimulate bowels to empty and can be suggested before bowel program (not during the day while off commode)
- Physical illness, medications, and stress affect bowel motility

Characteristics of bowel management programs for patients with SCI (Engkasan 2013)

- 52% have been using current bowel program for more than 5 years
- 79.2% use 2 to 4 interventions
- 76% learned the program from a health professional
- Defecation every other day (51.2%)
- In the morning (47.2%)
- Upright (72.8%)
- Independent care (56%)

Bowel management in pts with SCI (Adriaansen 2015)

- 74% use more than one conservative bowel management method
- digital evacuation 35%
- mini enemas 31%

Common pattern of bowel training program (Benevento 2002)

- Upright position on commode
  - Supine / legs straight - closes anorectal angle, less PFM relaxation for defecation
  - Upright uses effect of gravity (Drake 2013)
  - Bending forward, feet up on stool can open anorectal angle (swatty potty)
  - Good safety on commode - height of commode, side rails
- Privacy and comfort
- Relaxation, breathing
- Performed the same time every day (or every other day)
- Slightly quicker success with AM versus PM bowel schedules (Venn 1992)
- Gastrocolonic reflex - stimulation of peristalsis 30 mins after AM meal esp fatty or protein rich foods
- Adaptive devices - suppository inserter, digital stimulator
- Usually takes 30 to 60 minutes

UMN bowel syndrome, or hyperreflexic bowel - tight sphincter, evacuate with reflex stimulation

- Reflexic evacuation = soft formed stool
- Suppository or enema is inserted - wait 5 to 10 minutes
- Digital stimulation
  - Lubricate index finger and use a circular motion in the anal canal
  - For 20 to 60 seconds every 5 to 15 min until rectum is clear
  - Cautions to avoid aggressive manipulation to avoid autonomic dysreflexia and rectal mucosal injury (Drake 2013)
  - Digital stimulation - resulting in EAS relaxation and increased peristalsis (Korsten 2007, Shafik 2000, Drake 2013 level 3)
- Drinking warm liquid right before bowel evacuation
- Abdominal massage right before bowel evacuation
- Shifting weight side to side can shift position of colon to increase emptying
- Stimulation of skin around anus to initiate peristalsis

LMN bowel syndrome, or areflexic bowel - slow motility and weak sphincter

- Areflexic evacuation (manual) = firm stool
- Manual evacuation - break up stool with index finger and gently pull the stool out
- Bearing down / valsava - to advance feces, avoid in pts with SCI above T6 prone to autonomic dysreflexia (Drake 2013 level B, Furusawa 2011)

## Evidence for biofeedback not specific to neurogenic bowel

Cochrane on idiopathic constipation - "Currently insufficient evidence to allow any firm conclusions" (Woodward 2014). No one type of biofeedback is better than another.

Predictors of success in biofeedback therapy in patients with constipation (Shim 2011)

- Harder stool
- Shorter duration of laxative use
- Higher straining rectal pressure
- Prolonged balloon expulsion

Training included: toilet behavior, abdominal breathing, anal relaxation during bearing down, balloon expulsion retraining, and rectal sensory retraining

Predictors of success with biofeedback therapy in patients with AI (Fernandez-Fraga 2003)

After multivariate analysis

- 30% of patients with abnormal defecation mechanics failed treatment - those under 55 yo did more poorly than those over 55 yo
- Overall older pts (over 55 yo) had a better response to treatment

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