SCI-KidsCAN
Growing pediatric spinal cord injury knowledge

Pediatric Neurogenic Bowel Dysfunction

What is it?

Neurogenic bowel dysfunction is commonly described as the loss of normal bowel functioning usually resulting from trauma or disease within the spinal cord. Symptoms of neurogenic bowel may include constipation, fecal incontinence, and abdominal pain.

Types of Neurogenic Bowel Dysfunction

Areflexic Bowel

- Damage to the **lower end** of the spinal cord or nerve branches that lead to the bowel.
- This leads to reduced reflex control of the anal sphincter.
- Therefore, the body is unable to feel the need to have a bowel movement, so it is difficult for the rectum to empty.
- This is also known as a **lower motor neuron injury.**

Reflexic Bowel

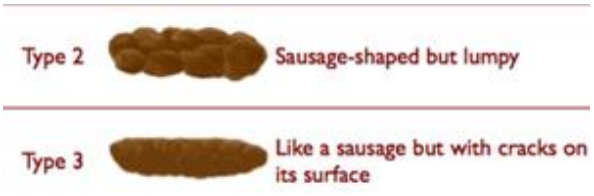
- Damage to the **upper end** of the spinal cord (above chest area).
- The brain is incapable of communicating the need for a bowel movement, however reflexes from the spinal cord to the bowel still work.
- As such, when stool builds up in the rectum, it can trigger a reflexic bowel movement without warning.
- This is also known as an **upper motor neuron injury.**

Bowel Movements: What to Know

The Bristol Stool Chart classifies bowel movements into seven categories based on appearance and consistency. **See Appendix A.**

Areflexic Bowel

- For an areflexic bowel, the goal is to have one bowel movement daily scoring type 2-3 on the bristol stool chart.



Reflexic Bowel

- For a reflexic bowel, the goal is to have one bowel movement daily scoring type 4 on the bristol stool chart.

Consideration:
*Using the bathroom and talking about bowel movements is typically private and personal to many. Readiness to share and participate in the bowel routine can be a challenging adjustment after an SCI.

Holland Bloorview
Kids Rehabilitation Hospital

Bowel Routine

A bowel routine promotes control over bowel function by establishing a routine that is individual to you and designed to help improve quality of life. It may help to prevent bowel accidents and stooling outside of regular and predictable times. Various bowel interventions are available ranging from conservative to surgical (See **figure 1.0** below). Each bowel management protocol is individualized, in collaboration with your interprofessional team (physician/NP, dietician, physiotherapist, occupational therapist, psychologist, etc.)

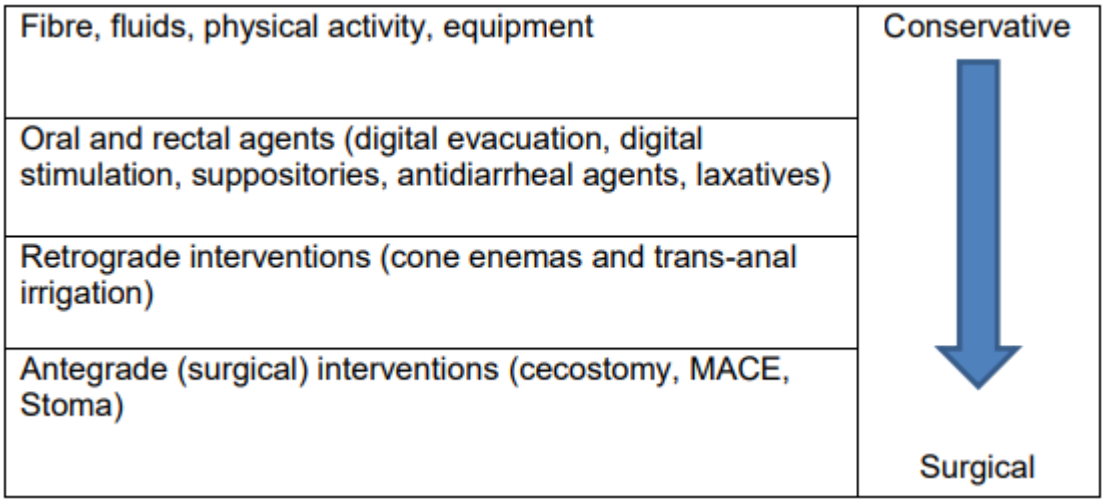


Figure 1.0 *Movement through the hierarchy is guided by ongoing monitoring and evaluation by a medical professional.* ***Always consult your medical professional before initiating new bowel interventions.***

How do I know if my bowel routine is effective?

For a bowel routine decision-making algorithm, please see **Appendix B.**

Helpful Tip:
Find a convenient time of day in the morning or evening to do the bowel routine. Ensure that it is always done at the same time each day to maintain consistency. Eating a meal or drinking warm fluids approximately 30 minutes prior to bowel care may help stimulate a bowel movement and produce greater results. This is called the **gastrocolic reflex**.

Bowel Care Tracking Tools

A bowel care record is used to monitor the effectiveness of your bowel routine. This is a helpful resource to share with your healthcare provider to ensure that your bowel routine is working. Maintaining a bowel care record is most helpful during the first couple of weeks after you leave the hospital and if challenges with the bowel routine arise. See list of resources below:

- For an example of a bowel care record see **Appendix C**.
- Alternatively, while we do not endorse any specific resources, the following 'apps' may be used to help monitor bowel movements:
  1. "Poop Tracker - Toilet Log"
  2. "Happy Poop: Toilet Journal Log".
- Continence tools for Families (Peds option)

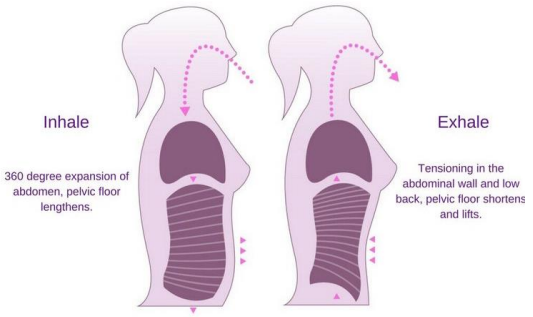
General Strategies

Toilet Posture

- Feel safe and welcoming
- Use appropriate toileting equipment (Toilet, commode, potty) as needed
- Check skin and position frequently when using toileting equipment
- Use a **stool** for feet - knees higher than hips!
- Make use of gastro-colic reflex – 20 min after meals
- Warm beverage and ILU massage before using the toilet

Breathing Techniques (on the toilet)

- Inhale to relax, exhale as you assist with evacuation
- Using windmill, bubbles, breathing into your fist
- Alternate nostril breathing
- **Avoid straining & breath holding**



Note: *See **Appendix D.** for an additional resource.

Leaving Home?! See tips for a Neurogenic Bowel Dysfunction "to-go" bag below:

Helpful Tip:
When leaving the house, pack a "**to-go" bag** of supplies that your child may need for bowel care. This may help ensure that you're prepared if a bowel accident occurs. Please see example below.

Neurogenic Bowel Dysfunction "to-go" bag contents:

1. Wipes
2. Gloves
3. Soap
4. Disposable changing pads (also sometimes referred to as blue pads)
5. An extra set of clothes
6. Diapers/pull-ups
7. Paper or digital bowel care record (if applicable)
8. Diaper or barrier cream (if applicable)
9. Lubricant for digital stimulation or disimpaction (if applicable)
10. Any other specific supplies required to perform the bowel routine

Things to know for Children with Cancer

- Prophylactic bowel regime of oral agents before constipation arises.
- Rectal manipulations such as enemas, suppositories are contraindicated in patients with abnormal counts and are discouraged for those on chemotherapy and/or with central lines even when counts are good.
- Consultation with pediatric oncology/hematology or pediatric gastroenterology if other treatments are not effective

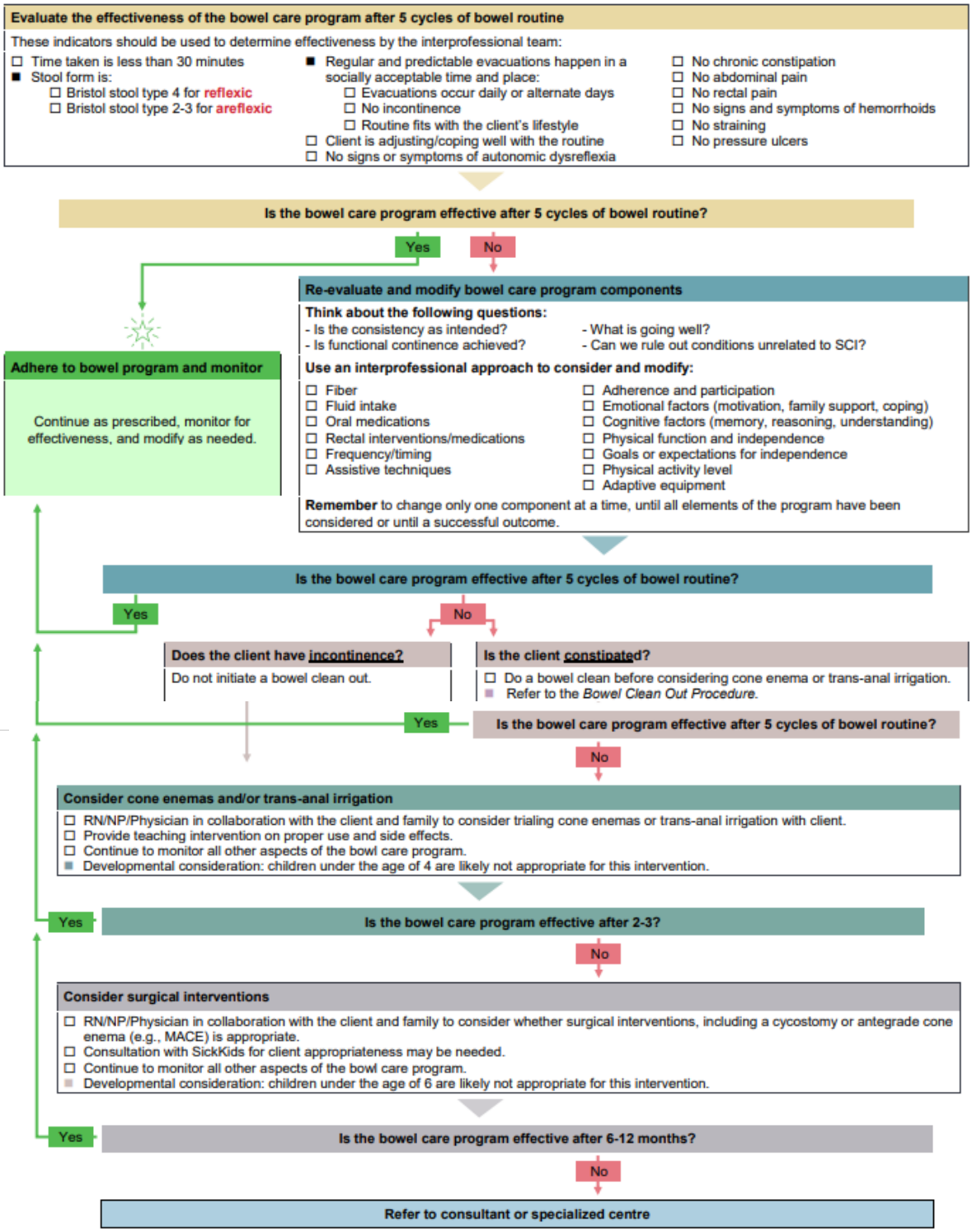
Additional Bowel Intervention Information and Resources: Beyond Conservative Management, see appendix E

Appendix A

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. **Entirely Liquid**

Appendix B


Evaluate the effectiveness of the bowel care program after 5 cycles of bowel routine
These indicators should be used to determine effectiveness by the interprofessional team:
☐ Time taken is less than 30 minutes
■ Stool form is:
☐ Bristol stool type 4 for reflexic
☐ Bristol stool type 2-3 for areflexic
■ Regular and predictable evacuations happen in a socially acceptable time and place:
☐ Evacuations occur daily or alternate days
☐ No incontinence
☐ Routine fits with the client's lifestyle
☐ Client is adjusting/coping well with the routine
☐ No signs or symptoms of autonomic dysreflexia
☐ No chronic constipation
☐ No abdominal pain
☐ No rectal pain
☐ No signs and symptoms of hemorrhoids
☐ No straining
☐ No pressure ulcers
Is the bowel care program effective after 5 cycles of bowel routine?
Yes
No
Adhere to bowel program and monitor
Continue as prescribed, monitor for effectiveness, and modify as needed.
Re-evaluate and modify bowel care program components
Think about the following questions:
- Is the consistency as intended?
- Is functional continence achieved?
- What is going well?
- Can we rule out conditions unrelated to SCI?
Use an interprofessional approach to consider and modify:
☐ Fiber
☐ Fluid intake
☐ Oral medications
☐ Rectal interventions/medications
☐ Frequency/timing
☐ Assistive techniques
☐ Adherence and participation
☐ Emotional factors (motivation, family support, coping)
☐ Cognitive factors (memory, reasoning, understanding)
☐ Physical function and independence
☐ Goals or expectations for independence
☐ Physical activity level
☐ Adaptive equipment
Remember to change only one component at a time, until all elements of the program have been considered or until a successful outcome.
Is the bowel care program effective after 5 cycles of bowel routine?
Yes
No
Does the client have incontinence?
Do not initiate a bowel clean out.
Is the client constipated?
☐ Do a bowel clean before considering cone enema or trans-anal irrigation.
■ Refer to the Bowel Clean Out Procedure.
Yes
Is the bowel care program effective after 5 cycles of bowel routine?
No
Consider cone enemas and/or trans-anal irrigation
☐ RN/NP/Physician in collaboration with the client and family to consider trialing cone enemas or trans-anal irrigation with client.
☐ Provide teaching intervention on proper use and side effects.
☐ Continue to monitor all other aspects of the bowl care program.
■ Developmental consideration: children under the age of 4 are likely not appropriate for this intervention.
Yes
Is the bowel care program effective after 2-3?
No
Consider surgical interventions
☐ RN/NP/Physician in collaboration with the client and family to consider whether surgical interventions, including a cycostomy or antegrade cone enema (e.g., MACE) is appropriate.
☐ Consultation with SickKids for client appropriateness may be needed.
☐ Continue to monitor all other aspects of the bowl care program.
■ Developmental consideration: children under the age of 6 are likely not appropriate for this intervention.
Yes
Is the bowel care program effective after 6-12 months?
No
Refer to consultant or specialized centre

Appendix C

Bowel Care Record

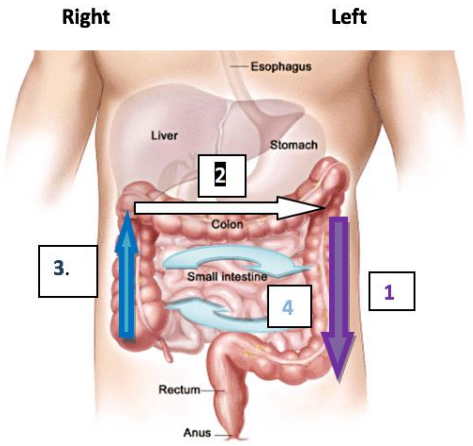
Every time you do bowel care, write down:

- **Date**.
- **Start time**. The hour and minute you start stimulation or try to start a bowel movement.
- **Position**. Left side lying, right side lying, sitting.
- **Stimulation method**. Stimulant medication, digital rectal stimulation, or other technique you use to start a bowel movement.
- **Assistive techniques**. Methods used to promote bowel emptying and the number of times used during bowel care, e.g., abdominal massage, bending, push-ups, Valsalva maneuver.
- **Times of results**. The time when the first stool begins to come out of the anus and the time when the last stool comes out.
- **Stool amount, consistency, and color**. Amount: if stool were formed into a ball—golfball, tennis ball, softball. Consistency: hard, firm, soft, liquid. Color: especially anything unusual for you.
- **Comments**. Problems such as any unplanned bowel movements, abdominal cramps, pain, muscle spasms, pressure ulcers, hemorrhoids, or bleeding.

Date	Start Time	Position	Stimulation Method	Assistive Techniques	Time of Results First/Last	Stool Amount, Consistency, Color	Comments

Appendix D: Additional Strategy

Abdominal I Love You (ILU) Massage



- Purpose of the ILU massage is to calm tension in your abdominal wall, intestines and/or to help move chyme (digested food) through your system more efficiently
- Duration: 5-10 minutes daily
- Can be completed upright or lying down with pillow under the bum (if you are trying to move gas out)
- Always go right to left with moderate pressure – complete **10 reps** per letter:
    1. Start by forming the letter “I” by stroking from the back of your left ribcage and down to the front, left hip bone
    2. Form the letter “L” by stroking from the right ribcage, underneath the ribcage to the left, and down to the left hip bone
    3. Form the letter “U” by stroking from the right hip bone to the right ribcage, across to the left ribcage and down to the left hip bone
    4. Small clockwise circles over abdomen for 2-3 minutes

Appendix E

Retrograde Interventions

Peristeen:

- Transanal Irrigation & Peristeen
- Transanal Irrigation - Scintigraphic pictures
- Helping children manage their bowels with Peristeen

Cone Enema:

- Cone Enema Instructions
- High-Volume Cone Enema Video:

Antegrade (surgical) interventions

Cecostomy:

- What is a Cecostomy?
- Cecostomy Video

Malone Antegrade Continence Enema (MACE):

- What is MACE?
- MACE Video

Ostomy/Stoma:

- Ostomy/Stoma Overview (from what it is to troubleshooting issues)
- Documents on Ostomy/Stoma Care
- Ostomy/Stoma Case Studies (including peds)
- Aboutkidshealth Ostomy Hub
- Stoma Concerns for Clients (FAQ's)
- Ostomy and Stoma Overview
- Ostomy Resources for Families (Peds option)

Possible funding resources

- Easter Seal Incontinence Supplies Grant
- Funding Ostomy Grant
- Private insurance
- Assistive Device Program (ADP)
- Assistance for Children with Severe Disabilities (ACSD)
- Ontario Works
- Ontario Disability Support Program
- Jennifer Ashleigh Children's Foundation
- SMILE Canada Support Services
- Ceridian Cares | Evaluation Criteria

Glossary

Autonomic Dysreflexia:

- Autonomic dysreflexia (AD) is a dangerous rise in blood pressure that occurs because of the body's inability to respond to pain or discomfort in the areas of the body that have no feeling. It commonly affects clients with spinal cord injuries at level T6 or above (Spinal Cord Essentials, 2015).

Cecostomy:

- May also be referred to as a C-tube, which consists of a tube or catheter placed in the first part of the large intestine (cecum). Irrigation (washing out) goes into the tube and out of the body through an anal opening in the patients bottom (Nationwide Children's Hospital, 2024).

Digital Evacuation:

- Use of one or two gloved and lubricated fingers to break up or hook stool and remove it from the rectum (Spinal Cord Medicine Consortium, 1998).

Digital Rectal Stimulation:

- **Digital rectal stimulation (DRS)** is a manual technique used to stimulate the movement of stool into the rectum (peristalsis) and initiate defecation at a chosen time. It is commonly used in practice and cited as a treatment option by several trusted clinical practice guidelines (Evidence to Care, 2021).

Enema:

- An enema is a liquid that is placed into the rectum. It flushes out stool (feces) that has built up (impacted) in the bowel. It draws water into the small intestine which subsequently causes distention and movement of still which assists in bowel evacuation (Johns et al., 2021).

Fibre and Fluids:

- **Insoluble fibre** bulks and softens stool, increasing faecal weight, and decreasing intestinal transit time in normal gut function, found in wholegrains such as wheat, maize and rice (MASCIP,2012)
- **Soluble fibre** is associated more with lowering blood cholesterol and blood glucose levels, found in oats, fruit and vegetables; however insoluble fibre is also found in these foods in varying proportions. In view of the associated health benefits, current guidelines are for 5 portions of fruit and vegetables daily (MASCIP, 2012)

Gastrocolic Reflex:

- A physiological reflex that controls the movement of the lower gastrointestinal tract following a meal (Malone & Thavamani, 2023).

Incontinence:

- Involuntary passage of stool or urine. Also called an accident (Spinal Cord Medicine Consortium, 1998).

Laxatives:

- Medications and substances found in certain foods or herbs that stimulate bowel movements (Spinal Cord Medicine Consortium, 1998).

MACE:

- An appendicostomy is a surgery (operation) to create a passage between the abdomen and the intestine. The surgery usually involves stitching your child's appendix (located at the end of the large intestine) to their abdomen. Although the surgery is usually called an appendicostomy, it can also be called a Malone procedure or MACE (Malone antegrade continence enema) procedure, after the surgeon who invented it (Aboutkidshealth, 2014).

Ostomy/stoma:

- An opening from the inside of the body to the outside, on the abdomen (tummy). It is created during surgery, and it can be temporary or permanent. An ostomy helps your child get rid of stool or urine if their intestine or urinary tract does not work properly (Aboutkidshealth, 2023).

Trans-anal Irrigation:

- A bowel management technique that empties feces from the lower colon allowing patients to be in control of when and where they empty their bowels (Coloplast, n.d.).

Suppository:

- Medicine inserted directly into the rectum to stimulate natural bowel movements (Spinal Cord Medicine Consortium, 1998).

Social Continence:

- This is the concept that an individual can control their symptoms from the SCI to the extent that is acceptable to them, with no significant effect on their life. The purpose of a bowel management program is to control the emptying of the rectum at a time that is convenient to the individual so that there is little impact to their social life. (Rutledge, Doughty, Moore & Wooldridge, 2004)

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