

Holland Bloorview Kids Rehabilitation Hospital	Manual Standard Of Care	Cluster Interprofessional
	Theme Bowel and bladder management	Number 00423
Neurogenic Bowel Management		

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Purpose

The aim of this standard is to provide clinicians with best practice guidelines on bowel care program assessment, design and evaluation for achieving social continence. It also addresses how to problem solve when a bowel care program is not effective. This standard has been adapted from 3 clinical practice guidelines using clinical expertise from the interprofessional working group:

- **Department of Family Medicine and Ontario Neurotrauma Foundation.** (2012). Caring for Persons with Spinal Cord Injury – Neurogenic bowel. Available at: <http://eprimarycare.onf.org/NeurogenicBowel.html>
- **Multidisciplinary Association of Spinal Cord Injured Professionals.** (2012). Guidelines for management of neurogenic bowel dysfunction in individuals with central neurological conditions. Available at: <https://www.mascip.co.uk/wp-content/uploads/2015/02/CV653N-Neurogenic-Guidelines-Sept-2012.pdf>
- **Royal National Orthopedic Hospital Trust.** (n.d.). Neurogenic bowel. Available at: <https://www.rnoh.nhs.uk/services/spinal-cord-injury-centre/medical-management-advice/neurogenic-bowel>

This standard is built upon the following principles identified by the interprofessional working group:

- Outlines standard and consistent elements of care
- Flexible and responsive to individual needs
- Interdisciplinary
- Addresses psychosocial and cognitive needs
- Facilitates implementation
- Leads to improved outcomes

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Purpose

An interprofessional approach is used for the assessment, development of plan, implementation and ongoing evaluation using the following steps:

- Evaluate current bowel function and history
- Perform a holistic assessment and exam
- Optimize fiber, fluids and physical activity
- Prescribe appropriate equipment
- Manage constipation and incontinence with oral and or rectal agents
- Establish a consistent personalized routine

Acronyms:

NP: Nurse Practitioner

MD: Physician

OT: Occupational Therapist

PT: Physical Therapist

RN: Registered Nurse

SCI: Spinal Cord Injury

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Standard

A bowel management routine is established using a stepped approach from conservative to less conservative. Chart is available in the procedure below. Standards are addressed in the procedure below.

Definitions:

Areflexic: Areflexic bowel usually results from a spinal cord injury (SCI) that damages the lower end of the spinal cord or the nerve branches that go out to the bowel. In this case you have reduced reflex control of your anal sphincter. You can't feel the need to have a bowel movement, and your rectum can't easily empty by itself. Also known as a lower motor neuron injury. (UPMC, 2019)

Reflexic: This usually occurs from a SCI above the chest area. This type of injury interrupts messages sent between the colon and the brain that are relayed up the spinal cord. The brain cannot communicate to the person to have a bowel movement; however the reflexes from the spinal cord to the bowel still work. When stool builds up in the rectum it can trigger a reflex bowel movement without warning. This is also known as an upper motor neuron injury. (UPMC, 2019)

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. (Lekan-Rutledge, Doughty, Moore & Wooldridge, 2004)

Gastrocolic Reflex: This is a physiological reflex that controls the motility of the lower gastrointestinal tract following a meal. (Malone & Thavamani, 2019)

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Procedure:


Fibre, fluids, physical activity, equipment	
Oral and rectal agents (digital evacuation, digital stimulation, suppositories, antidiarrheal agents, laxatives)	
Retrograde interventions (cone enemas and trans-anal irrigation)	
Antegrade (surgical) interventions (cecostomy, MACE, Stoma)	
	Surgical

Figure 1.

Note: Not all steps are appropriate to all individuals and the arrow does not represent strict lines of therapy. Movement up and down the hierarchy in Figure 1 is guided by ongoing monitoring and evaluation. This table was adapted from the following three sources: 1) [Multidisciplinary Association of Spinal Cord Injured Professionals](#) 2) [A Partnership between the Department of Family Medicine and the Ontario Neurotrauma Foundation](#) and 3) [NHS Royal National Orthopaedic Hospital](#).

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Procedure:

	Step	Rationale
1.	<input type="checkbox"/> Prior to admission, MD/NP will consult with the acute care team to initiate a bowel clean-out before discharge from the acute care setting if appropriate. <input type="checkbox"/> Consider: <ul style="list-style-type: none"> o The hardness of the stool o The amount of stool o Number of days since last bowel movement <p>The approach for the clean out: (1) PICO-SALAX® or (2) Polyethylene glycol 3350. Refer to <i>Bowel Clean out Standard of Care</i>.</p>	Clients may benefit from a bowel clean-out before designing a bowel care program at Holland Bloorview.
2.	On admission within the first 24 hours:	
a.	The MD/NP completes a history & physical assessment, including: <ul style="list-style-type: none"> ▪ Elimination frequency/duration ▪ Stool consistency using Bristol stool chart ▪ Medications (pharmacy) 	

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	<ul style="list-style-type: none"> ▪ Bowel program initiated in acute care ▪ Pre-injury pattern of elimination ▪ Abdominal exam ▪ Anorectal exam that includes sensation, tone, anal contraction and reflexes as required ▪ Stool testing for occult blood as indicated 	
b.	The MD/NP completes a referral for dietician consult, OT, PT, and psychologist, Child Life Specialist, etc.	All relevant referrals are entered into the system.
c.	The dietician completes a full dietary assessment and includes: Dietitian consults with the nurse to prescribe a diet that contains at least 15 g fibre and fluids as below: <ul style="list-style-type: none"> <input type="checkbox"/> Modify fibre intake based on current and desired stool consistency, the client's age, and weight. When modifying fibre, consider the following: <input type="checkbox"/> Make any increases in fibre gradually, from a variety of sources. <input type="checkbox"/> Do not place clients on uniformly high fibre diets (greater than 20g a day) <input type="checkbox"/> Attention should be paid to the combination of soluble and insoluble fibre. <input type="checkbox"/> Ensure adequate hydration based on the client's age, weight, 	<p>Fibre, fluids and activity are used to modulate stool consistency and evacuation frequency. These areas must be addressed first before considering other bowel care interventions.</p> <p>Dietary fibre in appropriate quantities can promote bowel regularity and improve constipation. Modifying insoluble fiber can assist with stool consistency.</p> <p>Increased fluid intake prevents hard stool that can result from decreased colon transit time.</p>

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	stool consistency and current fluid intake. <input type="checkbox"/> Refer to Appendix A for further guidance on liquid and fibre intake. For infants who were breastfed prior to injury, continue to breastfeed. For mothers who are pumping refer to the Handling, Storage, Thawing and Administration of Expressed Breast Milk (EBM) Standard of Care.	
d.	The pharmacists complete a full medication reconciliation and assessment.	
3.	All members of the team complete their profession specific assessment following the 5 day admission guidelines using the following standards with rationale:	
a.	Developmental age and size	<ul style="list-style-type: none"> The age and size of a client influences bowel program aspects such as: Fiber/fluid intake Independence and ability to participate in the bowel program
		Bowel care interventions (e.g. medications, equipment)
b.	Physical function & performance OT/PT will collaborate to assess: <ul style="list-style-type: none"> Upper and lower extremity function Breath patterns Sitting tolerance and posture Transfer skills Spasticity Risk for pressure injury Toileting environment and will assess for equipment needs 	<ul style="list-style-type: none"> Equipment needs for hospital, home and community settings Client's ability to participate in the bowel program Intervention selection
c.	Psychosocial The interprofessional team will assess:	Psychosocial components can impact a client's motivation and ability to participate in the bowel program.

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	<ul style="list-style-type: none"> • Readiness to participate • Coping with trauma • Family conflict and support • And make referrals to psychology when appropriate. 	
d.	Cognition The Psychologist will assess and identify co-morbidities that may affect:	Cognitive functioning impacts a client's ability to participate, level of independence and adherence to the bowel program, as well as intervention selection.
	<ul style="list-style-type: none"> • Ability to learn and direct others • Understanding of injury • Attention, memory and planning skill 	
4.	A personalized bowel care program is developed by the interprofessional team as soon possible as after admission. An interprofessional meeting may be required to facilitate this. See Protocols for Reflexic and Areflexic	Comprehensive assessment is required to ensure a holistic approach is used.
5.	Determine client and family readiness once level of injury and type of bowel dysfunction is determined.	Client and family readiness is integral to the success of the bowel program. Level of injury and Reflexic or Areflexic is required to develop the bowel program.

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6.	The interprofessional team determines a personalized plan to provide education to client and family as appropriate.	Education is a key component for a successful bowel care program. Standard <input type="checkbox"/> An educational program should reflect the client's personalized bowel program and is the responsibility of the interprofessional team. Education delivery should be ongoing and based on client/family needs, age and readiness: <ul style="list-style-type: none"> o Impact of SCI on bowel function o Rationale of bowel program o Role of regularity, timing, positioning o Address misconceptions on willful or defiant behaviour o Prevention and treatment of common bowel problem o Managing emergencies o Techniques for oral and rectal interventions o Long-term implications
7.	Ensure first family team goal plan meeting is scheduled within 5 days of admission to establish goals and priorities for the bowel routine.	A common understanding between clients, families and clinicians increases the success of the bowel care program.
8.	PT/OT will encourage physical activity based on clinical judgement and informed by best available evidence such as the Canadian 24-Hour Movement Guidelines for Children and Youth (2018) and	Physical activity including standing and passive movements promotes overall bowel health and can reduce constipation (Coggrave et al., 2014). As stated by the Spinal Cord Injury Research Evidence, in the Bowel Dysfunction and Management Following Spinal Cord Injury .

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	<p>the Evidence-based Scientific Exercise Guidelines for Adults with Spinal Cord Injury: An Update and a New Guideline (2017)</p> <p>PT/OT will provide teaching intervention on physical activity.</p> <p>Consider the client's appropriateness for pelvic muscle training (Vasquez et al., 2015) and refer to a trained healthcare professional as available.</p>	<p>This may be indicated for incomplete SCI.</p>
9.	<p>OTs and PTs will:</p> <p>Prescribe equipment to maximize client function and work with the interprofessional team to decrease the risk of pressure injury.</p>	<p>Equipment can support client participation in the bowel program</p>
10.	<p>The nurse assesses all clients at risk for pressure injury using the Braden Scale (Bergstrom et al., 1987) on admission and every 30 days.</p>	<p>Clients are at high risk of pressure injuries from prolonged sitting. Refer to Positioning and Surface Selection for Pressure Injury Prevention and Management standard of care. Excellent communication is required between healthcare providers on the plan to reduce and treat pressure injuries, especially as bowel management plans are implemented.</p>
11.	<p>Pharmacy/RN/NP will consider a two-pronged approach of oral and rectal interventions. Refer to Appendix B for further guidance.</p> <p>Provide teaching intervention on constipation, incontinence, and the proper use and effects of medications.</p>	<p>These strategies can manage constipation and fecal incontinence. They should only be considered after fiber, fluids, and physical activity have been optimized.</p>

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12.	<p>The interprofessional team will consider potential assistive techniques for use with the client including but not limited to some of the examples below:</p> <ul style="list-style-type: none"> • Warm fluids • Core exercises (Mannell, Wiebe & Larin, 2017) • Diaphragmatic (deep) breathing (Zivkovic et al., 2012). • Toilet positioning • Epsom salt baths • Abdominal massage* • Standard forward leaning <p>The appropriate profession will provide a teaching intervention on selected assistive techniques. Refer to Appendix C for further guidance</p>	<p>Assistive techniques can address constipation issues and/or promote pelvic health.</p> <p>*Note: Abdominal massage may not be appropriate for all clients based on co-morbidities and age, consultation with medical team is required.</p> <p>Consider the client's appropriateness for pelvic muscle training (Vasquez et al., 2015) and refer to a trained healthcare professional as available.</p>
13.	<p>The nurse documents the personalized routine in the client Collaborative Care Plan.</p>	<p>The routine should reflect an interprofessional approach that is:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Based on history, exam and assessment of developmental age, physical function, psychosocial, and cognition. <input type="checkbox"/> Addresses fiber, fluid, activity, equipment needs. <input type="checkbox"/> Reflects appropriate oral and rectal interventions when indicated. <input type="checkbox"/> Tailored to reflexic or areflexic bowel. <p>Developmental consideration: For children under the age of 6, habit training and toilet training maybe appropriate.</p>

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14.	<input type="checkbox"/> RN/NP will monitor and document the following aspects after each bowel routine: <ul style="list-style-type: none"> o Date and time o Time from rectal stimulation until evacuation is completed o Total time for bowel care routine o Stool colour, consistency, amount o Rectal interventions used o Oral interventions used o Unplanned evacuations o Positioning and pressure injury o Signs and symptoms of hemorrhoids and anal fissures o How the program is tolerated. <p>Consult and collaborate with the appropriate members of the interprofessional team if issues arise.</p>	
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15.	The team evaluate and re-evaluate the bowel program based on the algorithm below with every 5 bowel movements.	<ul style="list-style-type: none"> <input type="checkbox"/> The interprofessional team will adhere to a consistent program for 5 bowel movements <input type="checkbox"/> The following indicators should be used to determine effectiveness by the interprofessional team: <ul style="list-style-type: none"> o Time taken is less than 30 minutes o Stool form is: <ul style="list-style-type: none"> - Bristol stool type 4 for reflexic - Bristol stool type 3 for areflexic o Regular and predictable evacuations in a socially acceptable time and place o Evacuations occur daily or alternate days o No incontinence o Routine fits with the client's lifestyle o No chronic constipation o No abdominal pain o No rectal pain o Signs and symptoms of hemorrhoids o No straining o Signs and symptoms of autonomic dysreflexia o No pressure injury o Client is adjusting/coping well with the routine
16.	Nursing notifies the MD/NP if the client experiences an increase or decrease in established bowel routine.	Goal of bowel routine is to establish one soft bowel movement every one to two days. If client does not have a BM within 3 days the Physician/NP is always notified.

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Protocols for Reflexic and Areflexic bowels.

The following table was adapted from 1) [Multidisciplinary Association of Spinal Cord Injured Professionals](#) and 2) [A Partnership between the Department of Family Medicine and the Ontario Neurotrauma Foundation](#).

What type of neurogenic bowel does the client have?

Reflexic		Areflexic	
Goal: Soft-formed stool (Bristol type 4), daily or alternate days at a regular time		Goal: Firm stool (Bristol type 2-3), daily or alternate days at a regular time	
Initiation		Initiation	
<ul style="list-style-type: none"> Stimulant laxative 8-12 hours before planned bowel routine (as indicated) should be given Ingest food 30 minutes before bowel routine to trigger gastrocolic reflex Take oral medication as prescribed Consider prophylactic use of topical creams upon initiation of digital stimulation to prevent adverse effects for e.g. Annusol™. Encourage optimal toilet position 		<ul style="list-style-type: none"> Ingest food 30 minutes before bowel routine to trigger gastrocolic reflex Take oral medication PRN Encourage optimal toilet position 	
Routine		Routine	
Step 1	Gastrocolic reflex	Step 1	Gastrocolic reflex
Step 2	Insert rectal stimulant (suppository/enema)	Step 2	Digital removal of feces
Step 3	Digital rectal stimulation	Step 3	Digital rectal exam to check if evacuation is complete
Step 4	Digital removal of feces if required	Step 4	Rectum empty?
Step 5	Digital rectal examination to check complete evacuation		No - return to step 2
Step 6	Rectum empty? No - return to step 3 Yes - repeat check after 5 minutes to ensure evacuation is complete		Yes - repeat check in 5 minutes to ensure evacuation is complete

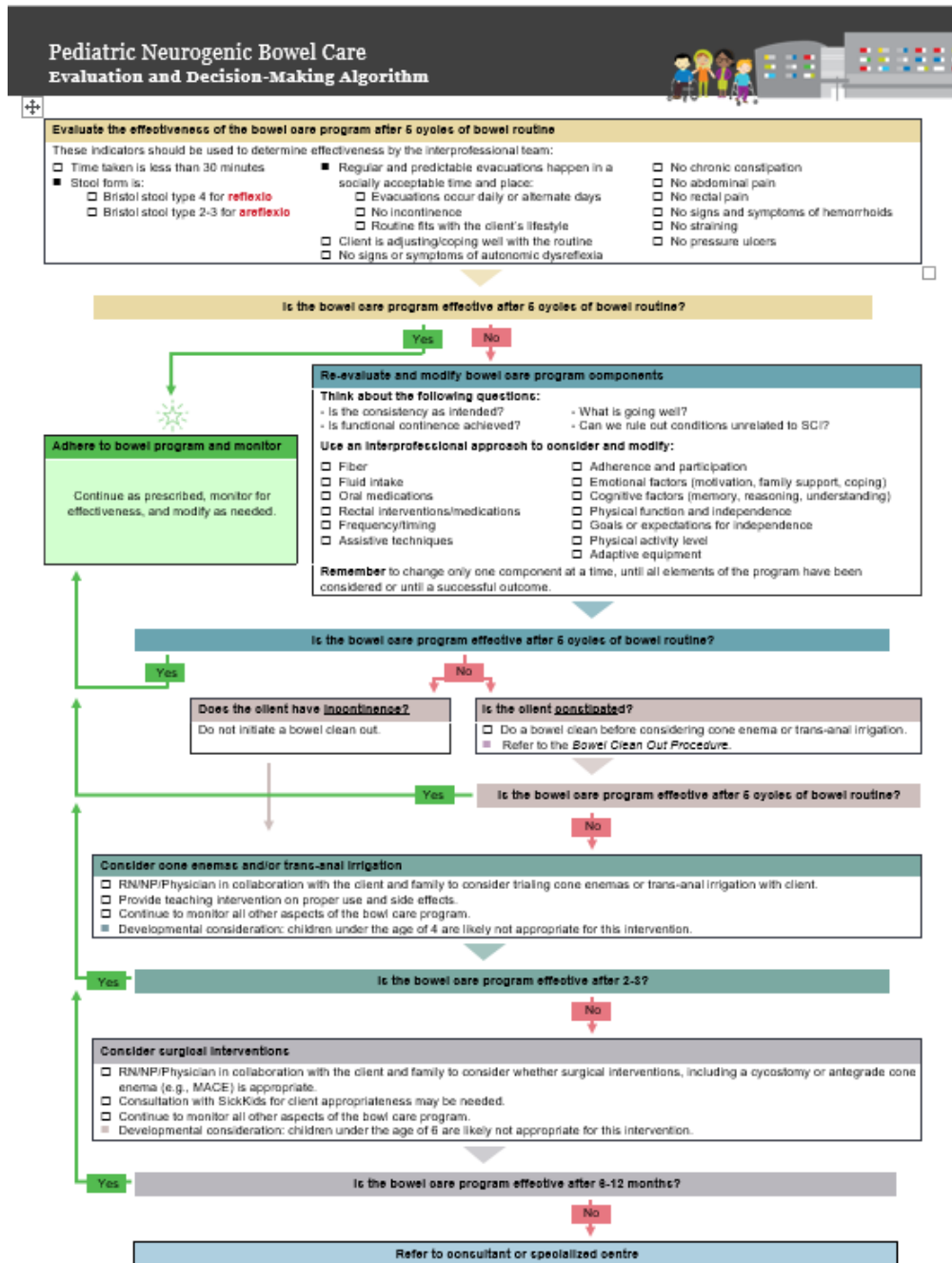
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Note: If the client has a successful bowel movement after step 2, determine the need to continue to step 5 based on the results.

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The following Pediatric Neurogenic Bowel Care Evaluation and Decision-Making Algorithm was adapted from [Multidisciplinary Association of Spinal Cord Injured Professionals](#) and 2) [A Partnership between the Department of Family Medicine and the Ontario Neurotrauma Foundation](#).

For a PDF version, please click [here](#).



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- Coggrave, M., Mills, P., Willms, R., Eng, JJ., (2014). Bowel Dysfunction and Management Following Spinal Cord Injury. In Eng JJ, Teasell RW, Miller WC, Wolfe DL, Townson AF, Hsieh JTC, Connolly SJ, Noonan VK, Loh E, McIntyre A, editors. *Spinal Cord Injury Rehabilitation Evidence*. Version 5.0. Vancouver: p 1- 48. Available at: https://scireproject.com/wp-content/uploads/2022/02/S5_bowel_management.pdf
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- Martin Ginis, K.A., van der Scheer, J.W., Latimer-Cheung, A.E. *et al*. Evidence-based scientific exercise guidelines for adults with spinal cord injury: an update and a new guideline. *Spinal Cord* 56, 308–321 (2018). <https://doi.org/10.1038/s41393-017-0017-3>
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Pelvic Health Solutions. (2017). Level 1: The physical therapy approach to female and male urinary incontinence. Instructor: Nelly Faghani & Carolyn Vandyken. Course description at: <https://courses.pelvichealthsolutions.ca/collections/all-courses> (n.d.). ILU massage.

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Appendixes

The purpose of the appendix is to provide clinicians with supplemental information to inform clinical decision making. The information presented here is intended for clinical education/decision-making only; it is not suitable for use with clients/families.

- Appendix A – Fiber and Fluids
- Appendix B – Pharmacological Agents
- Appendix C – Performing Assistant Techniques
- Appendix D – Online resources

Created by: interprofessional SCI standard of care task force

Reviewed by:

Family Leader: November 2019

NPC: June 2022

OT Practice Council – February 2020

PT Practice Council – February 2020

Dietician Practice Council – December 2019

Pharmacy & Therapeutics

MAC

PAC – February 2020

Other Policies:

Bowel Clean Out, Digital Fecal Disimpaction; Digital Rectal Stimulation; Height Measurement; Weight Measurement; Bowel Clean out; Handling, Storage, Thawing and Administration of Expressed Breast Milk (EBM), Peristeen Anal Irrigation System Management and Cone enema.

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Appendix A: Fiber and fluids

Recommendations for fibre and fluid intake should be individualized. Clinical judgement can be informed by the following tables, charts, education materials and recommendations.

Definitions

- **Insoluble fibre** bulks and softens stool, increasing faecal weight, and decreasing intestinal transit time in normal gut function, found in whole-grains 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)

A.1.Fiber recommendations Reference

Coggrave, M., Mills, P., Willms, R., Eng, JJ., (2014). Bowel Dysfunction and Management Following Spinal Cord Injury. In Eng JJ, Teasell RW, Miller WC, Wolfe DL, Townson AF, Hsieh JTC, Connolly SJ, Noonan VK, Loh E, McIntyre A, editors. Spinal Cord Injury Rehabilitation Evidence. Version 5.0. Vancouver: p 1-48. Available at: https://scireproject.com/wp-content/uploads/2022/02/S5_bowel_management.pdf

Recommendation

Start an initial diet with no less than 15g – 18g of fibre a day. Do not place the client on a uniformly high fibre diet (greater than 20g per day) and make adjustments if problems arise with stool consistency.

There is a need for further research to examine the optimal level of dietary fibre intake in patients with SCI.

Note: This resource is primarily based on adult literature

A.2.Fiber: What to do when stools are too soft or too hard

(Fiber titration) Reference

Multidisciplinary Association of Spinal Cord Injured Professionals. (2012). Guidelines

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for management of neurogenic bowel dysfunction in individuals with central neurological conditions. Available at: <https://www.mascip.co.uk/wp-content/uploads/2015/02/CV653N-Neurogenic-Guidelines-Sept-2012.pdf>

Please visit [Multidisciplinary Association of Spinal Cord Injured Professionals](#), to see a decision-making chart on what to do if stools too soft (page 48) or stools too hard (page 49) as part of an **adult-focused** resource. The numbers are based on the Englyst method of calculating fibre content used in the UK. This gives a number about 30% lower than the AOAC method, which is used by the USA and the rest of Europe.

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A.3.Fiber contents of foods

Reference

Harborview Medical Centre. (n.d.). Fiber facts. Retrieved from:
<http://sci.washington.edu/info/forums/reports/FiberFacts.pdf>

Please click [here](#) to see examples of the fiber content of foods.

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A.4.Fluid intake guidelines (miscellaneous)

Reference

Health Canada. (2010). Dietary Reference Intakes Tables. Retrieved from:

https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/nutrition/dri_tables-eng.pdf

Please click [here to see a Dietary Reference Intakes Reference Values for Macronutrients Table \(page 12\) from Health Canada.](#)

Reference

NSW Agency for Clinical Innovation. (2014). Nutrition fact sheet healthy eating for adults with spinal cord injury. Eds: Simon Wright. Retrieved from:

https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0010/224677/ACI_Eat_for_Health_Nutrition.pdf

Recommendation

- The National Health and Medical Research Council recommend an adequate intake of 2.6L of fluid a day for men and 2.1L of fluid a day for women (from plain water, milk and other drinks). The adequate intake of total water from food and fluids is set at 3.4L for men and 2.8L for women.
- In clinical practice 35ml/kg or 1ml/kcal may also be used.
- Patients should be encouraged to drink plain water as their main fluid and they should space their intake of fluid over the day. Further research is required to assess fluid requirements in the SCI population.

Note: This recommendation is reflective of the adult spinal cord injury population.

Reference

Consortium for Spinal Cord Medicine. (1998). Neurogenic bowel management in adults with spinal cord injury: Clinical Practice Guidelines for Health-Care Professionals. Washington, DC: Paralyzed Veterans of America. Retrieved from:

https://www.andeal.org/worksheet.cfm?worksheet_id=250191

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Recommendation

- The amount of fluid needed to promote optimal stool consistency must be balanced with the amount needed for bladder management. In general, fluid intake should be approximately 500 ml/day greater than the standard guidelines used to estimate the needs of the general public (National Research Council, 1989). Standard guidelines indicate that adult fluid needs can be estimated by either of the following formulas:
- 1 ml fluid/Kcal of energy needs + 500 ml/day or 40 ml/kg body weight + 500 ml/day
- (Scientific evidence—none; grade of recommendation—expert consensus; strength of panel opinion— moderate)

Note: This recommendation is reflective of the adult spinal cord injury population.

Reference

Brylowski, L., & Lowndes, R. et al (1989). Nutritional Prescription. In *Nutrition Care Manual* (Sixth Edition, pp. 97). Toronto, Ontario: The Ontario Hospital Association.

Recommendation

- 40-60 mL/kg

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A.5. List of bladder irritants and constipation foods

Reference

Lea Damata MSc (PT). (2019). List of bladder irritants and constipation foods. Adapted from: The John Hopkins Women's Center for Pelvic Health. (n.d.) & Pelvic Health Solutions: Pediatric incontinence & pelvic floor dysfunction. (2018).

List of bladder irritants and constipation foods:

Bladder irritants:

Certain foods and drinks have been associated with worsening symptoms of urinary frequency, urgency, urge incontinence, or bladder pain. If you suffer from any of these conditions, you may wish to try eliminating one or more of these foods from your diet and see if your symptoms improve. Once you are feeling better, you can begin to add foods back into your diet, one at a time. If symptoms return, you will be able to identify the irritant. Most people are not sensitive to ALL of these products; your goal is to find the foods that make YOUR symptoms worse.

- Acidic foods
- Tomato based products
- Vinegar
- Coffee
- Tea
- Curry
- Citrus fruits & juices
- Spicy foods
- Caffeinated beverages
- Carbonated beverages
- Cola
- Milk
- Artificial sweeteners
- Chocolate
- Foods with red or blue dye in them

Constipation foods:

Just as there are many foods you can eat to help prevent or relieve your constipation, there are foods that can have a binding effect that can make your constipation worse. These are some common foods to avoid when you are constipated:

- Apple sauce
- Arrowroot biscuits
- Marshmallow
- Banana

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- Peanut Butter
- Tapioca
- Cheese

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Appendix B. Pharmacological agents

CLASS	MECHANISM OF ACTION	ONSET OF ACTION	MEDICATION EXAMPLES	SIDE EFFECTS	DOSE	OTHER NOTES										
OSMOTIC	Increases water retention in bowel, stimulating peristalsis	24-96 hours	<ul style="list-style-type: none"> PEG3350 <ul style="list-style-type: none"> MiraLax Restoralax Lax-A-Day 	Nausea, cramping, diarrhea	0.5-1 g/kg/dose PO/Enteral Tube once daily Usual dose limit: 17-34 g/day. May increase to a maximum dose of 100 g/day in children weighing >34 kg who have failed to respond to lower doses.	At HB, product is ordered in 'ml' of powder: <table border="1"> <thead> <tr> <th>Weight</th> <th>Volume</th> </tr> </thead> <tbody> <tr> <td>4.25 g</td> <td>5 mL</td> </tr> <tr> <td>8.5 g</td> <td>10 mL</td> </tr> <tr> <td>12.75 g</td> <td>15 mL</td> </tr> <tr> <td>17 g</td> <td>20 mL</td> </tr> </tbody> </table>	Weight	Volume	4.25 g	5 mL	8.5 g	10 mL	12.75 g	15 mL	17 g	20 mL
		Weight	Volume													
4.25 g	5 mL															
8.5 g	10 mL															
12.75 g	15 mL															
17 g	20 mL															
HYPER-OSMOTIC	24-48 hours	Lactulose	Bloating, flatulence, cramps, diarrhea	Initial dose: 5-10 mL/day PO/Enteral Tube once daily; double daily dose until stool is produced Usual adult dose: 15-30 mL/day (constipation)	Sweet taste and volume may be intolerable to some patients. Can be used in patients with diabetes.											
LUBRICANTS	Coat stool to prevent colon from reabsorbing water	15-30 minutes	Glycerin suppositories	Leakage from rectum can cause irritation and pruritus	Children 2 to 5 years: 1 pediatric suppository once daily as needed or as directed Children ≥6 years and Adolescents: 1 adult suppository once daily as needed or as directed	May not be effective if stool is higher up in colon										
ORAL STIMULANT	Irritate bowel wall which stimulate colonic peristalsis	6-12 hours	<ul style="list-style-type: none"> Bisacodyl <ul style="list-style-type: none"> Dulcolax Senna <ul style="list-style-type: none"> Senokot 	Abdominal cramping, Melanosis coli (Senna)	<u>Bisacodyl:</u> Oral: 0.3 mg/kg/dose PO/Enteral Tube 6-12 hrs before desired effect Dose limit: 15 mg PO/Enteral Tube <u>Senna:</u> <u>Liquid:</u> 2-5 yrs: 3-5 mL/dose PO/Enteral Tube qhs 6-12 yrs: 5-10 mL/dose PO/Enteral Tube qhs <u>Tablet:</u> 6-12 yrs: 1-2 tablets/dose PO/Enteral Tube qhs											

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CLASS	MECHANISM OF ACTION	ONSET OF ACTION	MEDICATION EXAMPLES	SIDE EFFECTS	DOSE	OTHER NOTES
					Dose limit: Usual adult dose: 2-4 tablets PO/Enteral Tube qhs	
RECTAL STIMULANT	Increase peristalsis by providing mild colonic irritation	30 min – 1 hour	<ul style="list-style-type: none"> • Bisacodyl suppositorie <ul style="list-style-type: none"> ○ Dulcolax suppositories 	Rectal irritation	≤6 yrs: 5-10 mg suppository PR 15-60 min before desired effect >6 yrs: 10 mg suppository PR 15-60 min before desired effect	
FIBER	Absorbs water to create stool bulk	12-72 hours	<ul style="list-style-type: none"> • Psyllium <ul style="list-style-type: none"> ○ Metamucil • Fiber <ul style="list-style-type: none"> ○ Benefiber 	Bloating, flatulence, abdominal cramps, GI obstruction	<u>Metamucil:</u> Children 6-12 years: Half a teaspoon (2.9 g) mixed in 240 mL liquid up to 3 times daily Children over 12 years: Three level teaspoons (5.8 g) mixed in 240 mL liquid up to 3 times daily <u>Benefibre:</u> Children 6-12 years: 0.5 – 1 teaspoon mixed in ½ a cup of water up to twice daily Adults: 1-2 teaspoons mixed in ½ a cup of water up to twice daily	Must be dissolved in and taken with adequate fluids to prevent fecal impaction Contraindicated if partial obstruction of GI tract. Not appropriate for fluid restricted patients or those with dysphagia.

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Appendix C

The resources in the following sub-appendices include more information on performing assistive techniques.

C.1. Toilet

Posture

Reference

Lea Damata MSc(PT). (2019). Toilet posture. Adapted from: Hodges, M.D. (2016). & Pelvic Health Solutions: Pediatric Incontinence & Pelvic Floor Dysfunction. (2018).

Toilet Posture

The 90/90 Rule:

- Feet supported & legs apart
- Elevate hip/knee to at least 90/90 degrees position while sitting on the toilet (a deep squat)
- Forearms on thighs
- Spine straight with a slightly lean forward

The 90/90 rule is a general guideline to strive towards but must be adapted according to a client's individual needs.

Why?

Sitting in this position stretches the abdominal cavity, giving the colon more room to pump stool to the rectum for emptying. It also helps the pelvic floor muscles relax and places the rectum in a more vertical position, giving the child the benefit of gravity.

Please click [here to see an image of the pelvic floor muscles when sitting and squatting provided by The Yoga Shala.](#)

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C.2. ILU massage

Reference

Pelvic Health Solutions©. (n.d.). ILU massage.

ILU Massage



The purpose of ILU (I Love You) massage is to calm tension in your abdominal wall, intestines and/or to help move chyme (digested food) through your system more efficiently.

This can be done in lying, sitting or standing. Always do from right to left, using soap in the shower, or cream on your fingertips.

Start by forming the letter “I” by stroking with moderate pressure from the back of your left ribcage forward and down to the front, left hipbone. Repeat this 10 times.

Next, form the letter “L” by stroking with moderate pressure from the right ribcage, underneath the ribcage to the left, and down to the left hip bone, forming the letter “L”. Repeat this 10 times.

Last, do 10 strokes from the right hip bone up to the right ribcage, across to the left ribcage, and down to the left hip bone, forming the letter “U”. Repeat this 10 times.

Finish with 1-2 minutes of clockwise circular massage around the belly button to stimulate the small intestine.


Please click [here to see an image of the pattern of an ILU massage](#) provided by Gut and Psychology Syndrome Diet Australia.

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Appendix D

SCI Neurogenic Bowel Management Standard of Care: Moving Beyond Conservative Treatment Online Resources

April 2021, version 2

Fibre, fluids, physical activity, equipment	Conservative  Surgical
Oral and rectal agents (digital evacuation, digital stimulation, suppositories, antidiarrheal agents, laxatives)	
Retrograde interventions (cone enemas and trans-anal irrigation)	
Antegrade (surgical) interventions (cecostomy, MACE, Stoma)	


3. Retrograde interventions

- Transanal Irrigation & Peristeen (Coloplast): https://www.coloplast.ca/bladder-bowel/professional/product-solutions/?section=transanal-irrigation-and-peristeen%c2%ae_86736
- Transanal Irrigation - Scintigraphic pictures (Colorplast): https://www.coloplast.ca/bladder-bowel/professional/education/#section=Scintigraphic-pictures_86870
- Helping children manage their bowels with Peristeen (Coloplast): https://www.coloplast.ca/bladder-bowel/professional/education/#section=Helping-children-manage-their-bowels-with-Peristeen%c2%ae_86810
- Cone Enema Instructions (Gillette Children's Hospital): <https://www.gillettechildrens.org/your-visit/patient-education/cone-enema-instructions>
- High-Volume Cone Enema Video (The Children's Hospital of Philadelphia): https://www.youtube.com/watch?v=4MVIhqbTOsk&ab_channel=TheChildren%27sHospitalofPhiladelphia

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SCI Neurogenic Bowel Management Standard of Care: Moving Beyond Conservative Treatment Online Resources

April 2021, version 2

Fibre, fluids, physical activity, equipment	Conservative  Surgical
Oral and rectal agents (digital evacuation, digital stimulation, suppositories, antidiarrheal agents, laxatives)	
Retrograde interventions (cone enemas and trans-anal irrigation)	
Antegrade (surgical) interventions (cecostomy, MACE, Stoma)	

4. Antegrade (surgical) interventions

- What is a Cecostomy? (John Hopkins Medicine):
<https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/cecostomy-for-children>
- Cecostomy Video (Phoenix Children's Hospital):
https://www.youtube.com/watch?v=WK0RGVGYEjE&ab_channel=PhoenixChildren%E2%80%99sHospital
- What is MACE? (Columbia University Department of Urology):
<https://www.columbiaurology.org/mace-malone-antegrade-continence-enema>
- MACE Video (Children's Mercy Kansas City):
https://www.youtube.com/watch?v=Pe8FW0JqMCU&ab_channel=Children%27sMercyKansasCity
- Documents on Ostomy/Stoma Care (Wound, Ostomy, and Continence Nurses Society) :
<https://www.wocn.org/learning-center/document-library/>

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Select Client Resources

- Stoma Concerns for Clients (FAQ's): <https://www.eakin.eu/help-advice/stoma-care-concerns/>
- Ostomy and Stoma Overview: <https://www.hollister.ca/en-ca/ostomycare/educationaltools>
- Ostomy Resources for Families (Peds option): <https://www.hollister.ca/en-ca/ostomycare/ostomy-clinical-education/pediatric-education>
- Continence tools for Families (Peds option): <https://www.hollister.ca/en-ca/continencecare/educationaltools>

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Reviewed and Approved by:

Physiotherapy Practice Council – Feb 2020
Occupational Therapy Practice Council – Feb 2020
Nursing Practice Council – January 2020
Professional Advisory Council – Feb 2020
Pharmacy & Therapeutics – March 2020
Medical Advisory Council – June 2020

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