

# Spinal cord injury bowel management

## Guide for clinicians in non-spinal units

DECEMBER 2022

Neurogenic bowel is the loss of normal bowel function. It may be due to a spinal cord injury that causes interruption of neural pathways between a person's brain and bowel.

This resource is for healthcare professionals providing care to people with spinal cord injury (SCI) in a non-specialist context who have limited access to specialist resources.

It focuses on bowel management, particularly from the time of acute care, and covers:

- what needs to be done immediately
- developing an individualised bowel management plan
- implementing routine care.

The goals include maintaining the person's dignity, privacy and independence. The key aim is for the person to have regular and predictable bowel emptying while minimising pharmaceutical interventions.

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# At a glance



## Basic principles

Digital rectal examination should be conducted daily, from day one following injury.

Any digital rectal procedure should be conducted gently and sensitively with a well-lubricated glove. (Lignocaine gel is recommended for people with intact anal sensation.)

## Immediate actions

- Monitor for paralytic ileus in the first 48-72 hours following spinal cord injury (SCI). Nil by mouth if diagnosed.
  - Fluids and nutrition are gradually re-introduced when bowel sounds return and flatus has passed.
- During any period of spinal shock, people with SCI require management for lower motor neuron and/or non-reflex bowel, regardless of their level of injury.
- Assess for neutropenia before commencing a bowel management plan.



## Planning

- As early as possible develop an individualised bowel management plan, with the goal of:
  - self-management as far as possible
  - regular, predictable bowel emptying at a socially acceptable time and place
  - Bristol Stool Chart type 3 or 4
  - using minimal interventions.
- A cycle of assessment, planning and evaluation ensures a bowel management plan stays current with the person's needs.
- When changing a component of a person's bowel management plan, wait 3-4 bowel cycles before making another change.



## Routine care

- Implement a scheduled bowel emptying regime in line with the person's bowel management plan.
- A flowchart of bowel emptying procedures is in [Appendix 1](#).
- Common bowel conditions and complications associated with neurogenic bowel.
- Bowel management requires continued interprofessional support and specialist input from a range of medical and allied health services.

# Summary

## Neurogenic bowel is the interruption of neural pathways between a person's brain and bowel, resulting in reduced or no control of the defecation process.

There are two types of neurogenic bowel commonly experienced by people with spinal cord injury (SCI), whether their injury is complete or incomplete.

- 1. Upper motor neuron or reflex bowel** is when the bowel has a positive reflex response to some stimulus, but the person cannot effectively increase intra-abdominal pressure to evacuate the bowel voluntarily and requires external stimulation of the sphincter.
- 2. Lower motor neuron or non-reflex or flaccid bowel** is when the bowel has no reflex response and does not respond to increased intra-abdominal pressure. The sphincter is loose, meaning that stool leaks more frequently.

Immediately after an SCI, a person may experience spinal shock and paralytic ileus. These temporary conditions change a person's bowel function and management actions while present.

A person-centred bowel management plan is developed, and a bowel care routine established in line with the plan, as early as possible after any period of paralytic ileus and/or spinal shock has passed.

These are the goals for person-centred bowel management.

1. Maintain the person's dignity and privacy and encourage independence
2. Provide adequate bowel assessment
3. Aim for regular and predictable bowel emptying
4. Minimise bowel accidents, the incidence of autonomic dysreflexia and other complications
5. Minimise pharmaceutical interventions
6. Aim for the appropriate Bristol stool type (3 or 4).

## Bowel management

General considerations foundational to bowel care and any bowel management plan are a person’s diet and fluid intake, lifestyle and the competence of their carer.

Bowel emptying techniques are introduced in this resource, in order of increasing intervention. This is in line with the bowel management goals to establish a routine that facilitates independence and that minimises pharmaceutical interventions. Digital rectal examination (DRE) is a key health maintenance bowel care technique. From the first day following injury, clinicians use DRE to understand the person’s bowel emptying needs, for example, assessment of anal tone, presence of stool and stool type. DRE is also used to monitor for presence of any bowel conditions or complications.

This guides bowel management for a person with SCI from the time of injury. Management actions are grouped in this way.

<b>Immediate actions</b>	High-priority steps, especially relevant or important to know for the first few days of care following injury.
<b>Planning</b>	Actions related to health planning and management.
<b>Routine care</b>	Regular actions required for day-to-day care.

A flowchart of bowel emptying routines typically used for upper motor neuron or reflex and lower motor neuron or non-reflex neurogenic bowel types is in [Appendix 1](#).

People with neurogenic bowel due to SCI are at increased risk of a range of bowel-related conditions and complications. Autonomic dysreflexia (AD) is a high-risk complication that may be triggered by irritation of nerve endings in the bowel. In line with rectal bowel care, impaction and a full bowel not emptied on time are some of the common causes of AD incidences in people with SCI.

Loose or hard stool types, anal fissures, haemorrhoids and bowel impaction are also common complications associated with neurogenic bowel. An individualised bowel management plan that is regularly reviewed helps to prevent such complications.

[Table 1](#) provides a list of common bowel conditions and complications, including symptoms and basic treatment notes.

Person-centred bowel management plans are multidisciplinary. A range of specialists contribute to effective bowel care for people with neurogenic bowel associated with SCI.

This resource includes referrals for specialist input and advice, and details sources of further information on the clinical guidance.

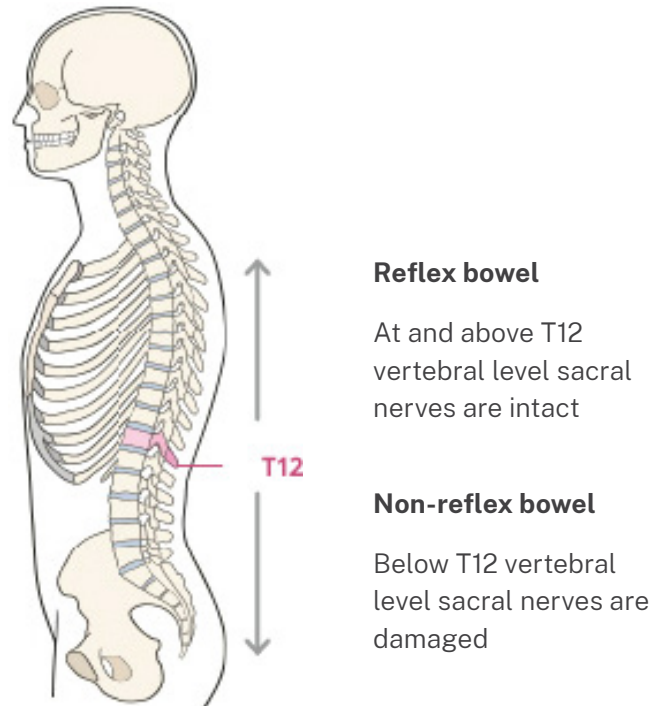
# Bowel care with spinal cord injury

Neurogenic bowel is a condition in which nerve messages between the brain and bowel are interrupted by illness or injury such as SCI. The person has reduced, or no, control over the defecation process. People with SCI most commonly experience upper motor neuron or reflex bowel or lower motor neuron or flaccid bowel, depending on the SCI level.

1. Upper motor neuron or reflex bowel. This is usually experienced as sudden involuntary bowel movements when the bowel has a positive reflex response to some stimulus. But the person cannot effectively increase intra-abdominal pressure to evacuate the bowel voluntarily. They require external stimulation of the sphincter. It is associated with injury to the spinal cord at or above T12 vertebral level.
2. Lower motor neuron or non-reflex or flaccid bowel. This is usually experienced as frequent stool leakage. It occurs when the bowel has no reflex response and does not respond to increased intra-abdominal pressure. The sphincter is loose, meaning that stool leaks more frequently. It is associated with injury to the spinal cord below T12 vertebral level.

People with complete or incomplete SCI may have neurogenic bowel.

Figure 1: Neurogenic bowel type associated with level of spinal cord injury



**Reflex bowel**

At and above T12 vertebral level sacral nerves are intact

**Non-reflex bowel**

Below T12 vertebral level sacral nerves are damaged

Note: Sacral nerves are responsible for controlling the bowel.

Source: Middleton JW, Arora M, McCormick M and O’Leary D (2020). Health Maintenance Tool: How to stay healthy and well with a spinal cord injury. A tool for consumers by consumers; Ed. 1, NSW Australia, p.42.

## Acute care stage – specific considerations

### Digital rectal examination

A digital rectal examination (DRE) is conducted to assess the need for bowel emptying as part of daily care, and as part of comprehensive assessment of a person's bowel management needs. A DRE is necessary every day, even if a person is emptying their bowels.

A DRE comprises:

- visual inspection of the perianal area for anal skin tags, external haemorrhoids, wounds, any abnormality in the perianal skin and any faecal matter present
- assessment of:
  - presence of any stool in rectum and consistency of the stool
  - sphincter tone if present or not
  - characteristics of the rectal wall, e.g. dilated, ballooned or collapsed
  - haemorrhoids or fissures
  - any abnormalities felt.

See the bowel management flowchart, including DRE, in [Appendix 1](#).

### Spinal shock

Spinal shock is a period of areflexia following an acute SCI. It is characterised by loss of all spinal mediated reflexes, including sacral reflexes, e.g. defecation reflex. Spinal shock can last from two days to two weeks following an acute injury, with a gradual return of reflexes. During this period, people with lesions above T12 will behave like lower motor neuron or non-reflex bowel and require management as per the lower motor neuron bowel protocol.<sup>1</sup> They should be regularly monitored for the return of sacral reflexes, indicated by return of anal tone and presence of bulbocavernosus reflex. Monitoring enables upper motor neuron or reflex bowel care to be initiated in a timely way.

### Paralytic ileus

During the first few days of a person's SCI, observe them for the onset of paralytic ileus – an obstruction of the intestine that commonly occurs after injury, particularly in the first 48 hours. Early detection is crucial. This is because the build-up of gastric contents may lead to abdominal distension that compresses their diaphragm and limits ventilator effectiveness. Aspiration of gastric contents via a nasogastric tube may be required.

## General considerations

Both types of neurogenic bowel often cause constipation, difficulty with evacuation, faecal incontinence, haemorrhoids and incontinence-associated dermatitis.

Bowel conditions and some bowel care practices place people at risk of AD. See [Table 1](#) Basic outline of common bowel conditions and complications.

### Establishment of a bowel management program

Bowel management programs help people with SCI self-manage their bowel emptying in a way that is as complete, regular and predictable as possible, using a minimum of interventions.<sup>2,3</sup> The program should assist the person to achieve a stool type of 3 or 4 on the Bristol Stool Chart (Figure 2), depending on the type of neurogenic bowel.

A person’s bowel management program, started after resolution of any period of paralytic ileus, consists of a mix of these three aids.

1. Dietary and fluid intake routines that ensure a balance of different types of fibre and appropriate hydration
2. Oral laxatives (stool softeners, stimulant laxatives and bulking agents), based on assessment of individual needs and history, and timed around regular planned bowel emptying
3. Assistive techniques to encourage daily bowel movement (see the section, Bowel emptying).

The program establishes a scheduled daily routine of bowel care that supports the person with SCI to empty their bowel at the same time or times every day. Typically, this is timed to be 20-30 minutes after food or drink, as this generally stimulates defecation (gastrocolic reflex). A scheduled routine helps identify changes in stool frequency that may indicate constipation, faecal incontinence and diarrhoea.<sup>4</sup>

Consider equipment needs, such as a mobile shower commode with padded seat that has full cut-outs at front or back, or partial cut-outs at sides, to facilitate independence with bowel care.

Changes in the person’s health, lifestyle, medication, functional ability, resources or other impacting factors will need to be addressed in their bowel management program.

A period of trial and error is often required to determine the right mix of components. Changing one component at a time, although time-consuming, is the best way to determine the effectiveness of any changes.

Figure 2: Bristol Stool Chart

Type 1	Separate hard lumps	Severe constipation
Type 2	Lumpy and sausage like	Constipation
Type 3	A sausage shape with cracks in the surface	Firm
Type 4	Like a smooth, soft sausage or snake	Normal
Type 5	Soft blobs with clear-cut edges	Lacking form
Type 6	Mushy consistency with ragged edges	Mild diarrhoea
Type 7	Liquid consistency with no solid piece	Severe diarrhoea

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**Diet and fluid intake**

Adequate dietary fibre is crucial to bowel management programs for people with SCI. A daily fibre intake of 15-20g is recommended from a variety of sources (taking account of individual tolerances and with a balance of insoluble fibre, soluble fibre and resistant starch).

Recommended fluid intake will be highly individual. People with SCI need about 500ml more per day than people in the general population – so 2.5 litres is recommended, to compensate for fluid re-absorbed during slower than usual movement of stool through the colon.

**Lifestyle**

People’s activity, exercise, sleep patterns, levels of stress, age and use of cigarettes, alcohol and other recreational drugs all affect their digestion and bowel.

**Carer competence**

Effective bowel management relies on a carer’s thoroughness and skill. Appropriate carer expertise reduces risk of complications such as AD, impaction, haemorrhoids and diarrhoea. Appropriate carer training before the person with SCI is discharged can improve self-management success.

**Bowel emptying**

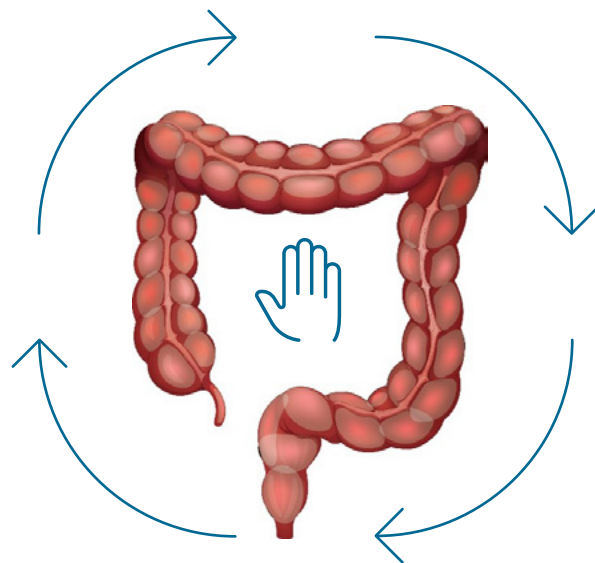
It is crucial that planned bowel emptying will be at the same time or times of day. Usually, once or twice daily for lower motor neuron or flaccid bowel, and daily or every second day for upper motor neuron or reflex bowel.

Assistive techniques and management interventions to support bowel emptying range from conservative to more complex. Supports and interventions are outlined here in order of level and complexity of intervention.

**Abdominal massage**

Gentle but firm pressure on the abdomen, using the heel of the hand in a clockwise motion – in the direction the bowel moves – may stimulate stool movement through the colon.

**Figure 3: Abdominal massage**



Source: Middleton JW, Arora M, McCormick M and O’Leary D (2020). Health Maintenance Tool: How to stay healthy and well with a spinal cord injury. A tool for consumers by consumers; Ed. 1, NSW Australia, p.46.



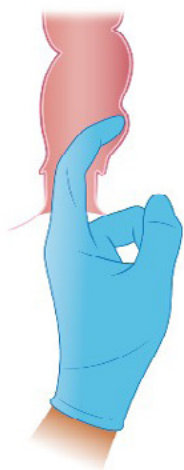
### Medications or aperients

There are a range of oral medications (laxatives) and rectal medication (enemas and suppositories) that may help regular bowel routines for people with SCI.<sup>5</sup> Tables in [Appendix 2](#) describe some common oral and rectal medications. Aim for Bristol stool type 3 or 4, depending on the type of neurogenic bowel.

### Digital rectal stimulation

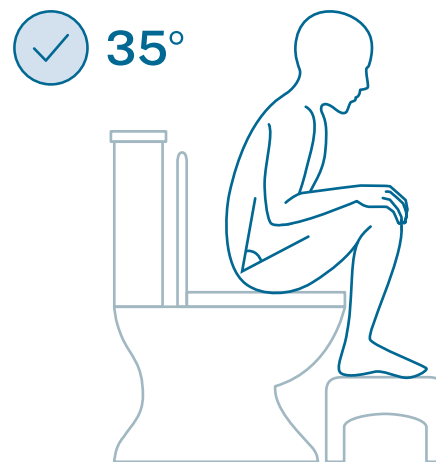
For people with upper motor neuron or reflex neurogenic bowel, bowel movements are initiated with digital rectal stimulation of the perianal and rectal area. This follows any necessary rectal medications such as enemas. Digital rectal stimulation encourages bowel emptying by increasing reflex muscular activity and pressure in the rectum and relaxing the external anal sphincter. This may be followed by digital removal of faeces.<sup>6</sup>

Figure 4: Digital rectal stimulation



Source: ACI

Figure 5: Optimal positioning for bowel care



Source: Middleton JW, Arora M, McCormick M and O’Leary D (2020). Health Maintenance Tool: How to stay healthy and well with a spinal cord injury. A tool for consumers by consumers; Ed. 1, NSW Australia, p.58.

### Digital removal of faeces

In general, lower motor neuron or flaccid neurogenic bowel requires manual removal of faeces with a lubricated gloved finger inserted through the anus to break up and remove faeces from the rectum. Rectal stimulants such as suppositories or enemas may be used; however, they are unlikely to be effective.

Upper motor neuron or reflex neurogenic bowel should generally commence with a digital rectal examination and use of a rectal stimulant such as a suppository or enema. Digital removal of faeces may still be required.

See the procedure in [Routine care](#) under Management actions.

## Transanal irrigation

Transanal irrigation (TAI) is not often engaged during the acute care stage but may need to be initiated during a person's readmission, following a comprehensive review of bowel care.

TAI is an option that may be considered when conservative bowel management programs are no longer effective.<sup>7</sup> This technique is designed to assist the evacuation of faeces through the instillation of tepid water into the lower bowel, via a rectal catheter or cone. It can be self-administered or performed by a carer who has had appropriate training. People already established on a TAI program should be supported to continue this whenever readmitted to inpatient services.

**A thorough assessment MUST be performed** prior to commencing TAI for the first time, to ensure client suitability. This is conducted by a clinical nurse specialist or someone with specialist experience in SCI bowel care.

The assessment will indicate whether high or low volume TAI is recommended.

Perforation and AD are a risk of TAI. It is also contraindicated for people with certain conditions such as active bleeding haemorrhoids, recent colorectal surgery or inflammatory bowel conditions – hence the importance of assessment by suitably qualified clinicians

- Royal North Shore Hospital SCIU:  
Phone (02) 9926 7111
- Prince of Wales Hospital SCIU:  
Phone (02) 9382 2222
- Royal Rehab SCIU:  
Phone (02) 9808 9269

## Surgery

Surgical options such as elective colostomy may be considered, in consultation with a specialist clinician,<sup>8</sup> after other options have been exhausted.

## Conditions and complications

[Table 1](#) provides a basic outline of common conditions associated with neurogenic bowel. Symptoms listed in this table should prompt clinical review. The treatment notes are prompts for further reading only. Also see Resources for further information, in particular [Solving common bowel problems – a resource tool for persons with spinal cord injury](#).

Table 1. Basic outline of common bowel conditions and complications

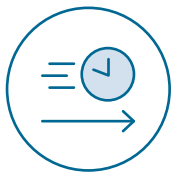
Condition	Symptoms	Diagnosis and treatment notes
<b>Autonomic Dysreflexia (AD)</b>	May be caused by per rectal bowel care; full bowel not emptied on time; constipation; enlarged haemorrhoids; rectal distension; or irritation from enema. See the <a href="#">Treatment Algorithm for Autonomic Dysreflexia (Hypertensive Crisis) In Spinal Cord Injury</a> for further information.	
<b>Diarrhoea/ loose stool</b>	<ul style="list-style-type: none"> <li>• Bristol stool type <math>\geq 6</math> (see Figure 2)</li> <li>• Less control over bowel movements</li> <li>• Nausea, vomiting, loss of appetite</li> </ul>	<p><b>Bowel conditions in people with SCI will generally trigger review of these.</b></p> <ul style="list-style-type: none"> <li>• Diet and fluid intake, to monitor any link between symptoms and balance of fibre and fluids (and other diet elements such as caffeine).</li> <li>• Bowel routine, to monitor any link between appropriate allocation of timing (e.g. of drug administration), symptoms and the balance of bulking agents, stool softeners, aperients, enemas and suppositories.</li> <li>• Carer's bowel management practices, as conditions such as haemorrhoids and faecal incontinence can be caused or exacerbated by the way that digital rectal stimulation and other manual procedures are delivered.</li> <li>• Other medications that have bowel-related side-effects.</li> </ul> <p><b>For specific conditions consider these actions.</b></p> <ul style="list-style-type: none"> <li>• Abdominal x-ray may help confirm conditions such as impaction.</li> <li>• Screen for infective causes, e.g. stool culture.</li> <li>• Consider use of anal plug for faecal incontinence at any injury level (usually associated with lower motor neuron or flaccid bowel), taking account of risk of AD.</li> <li>• Medical and surgical treatments for bowel conditions such as cancer and haemorrhoids are mostly the same as those for the general population, taking into consideration: <ul style="list-style-type: none"> <li>– differences in signs and symptoms (see Symptoms column)</li> <li>– bowel management programs that will impact treatment of diarrhoea and constipation.</li> </ul> </li> </ul>
<b>Constipation/ hard stool</b>	<ul style="list-style-type: none"> <li>• Bristol stool type 1</li> <li>• Less frequent bowel movements</li> <li>• Difficulty opening bowels</li> </ul>	
<b>Impaction</b>	<ul style="list-style-type: none"> <li>• Hardened faecal matter in the large bowel which cannot be evacuated by regular peristaltic activity</li> <li>• Caused by chronic or severe constipation</li> <li>• Overflow diarrhoea or alternating diarrhoea and constipation</li> <li>• Abdominal pain and distention</li> <li>• Nausea and vomiting</li> <li>• Anorexia</li> </ul>	
<b>Faecal incontinence</b>	<ul style="list-style-type: none"> <li>• Unplanned bowel movements</li> <li>• Bowel movements outside of scheduled bowel regime</li> </ul>	
<b>Anal fissure</b>	<ul style="list-style-type: none"> <li>• Small, oval-shaped tear in the skin that lines the opening of the anus</li> <li>• Bleeding with bowel movements</li> <li>• Severe pain</li> </ul>	

Table 1. Basic outline of common bowel conditions and complications (cont.)

Condition	Symptoms	Diagnosis and treatment notes
<b>Haemorrhoids</b>	<ul style="list-style-type: none"> <li>• Rectal bleeding and/or mucus. Severity increases with frequency of bleeding and/or amount of blood</li> <li>• Pain/discomfort when sitting for a long time</li> <li>• Pain/sweating during bowel movements</li> <li>• One or more swellings near anus</li> </ul>	See above
<b>Bowel cancer</b>	<ul style="list-style-type: none"> <li>• Signs and symptoms are the same as those for the general population. However, they may be harder to detect for people with SCI due to their range of sensation of pain/discomfort, and also because some symptoms such as constipation occur for them more frequently, from other causes</li> <li>• People with SCI are not at increased risk of developing bowel cancer, however they are less likely to have routine bowel screening tests, which may lead to delayed diagnosis</li> </ul>	

# Management actions

Actions to manage the first days of bowel care, establishment of a bowel management program and the support of daily bowel care and bowel emptying, are outlined below as:



## Immediate actions

High-priority steps, especially relevant or important to know for the first few days of care following injury.



## Planning

Actions related to health planning and management.



## Routine care

Regular actions required for day-to-day care.

A **bowel management flowchart** of daily bowel emptying actions, by neurogenic bowel type, is in [Appendix 1](#).

A **table of commonly used medications** is in [Appendix 2](#).



## Immediate actions

- Conduct a DRE for a person with SCI daily, from day one following injury. DRE should be conducted gently and sensitively with a well-lubricated glove.
- Lignocaine gel is recommended as a lubricant to reduce pain or discomfort during bowel care for people with intact anal sensation.
- Monitor for paralytic ileus in the first 48-72 hours following SCI.
- If paralytic ileus is diagnosed:
  - insert a nasogastric/orogastric tube to decompress the stomach
  - nil by mouth, with intravenous fluid to stay hydrated
  - check the rectum for the presence of stool on a daily basis and if present, gently remove manually using a water-based lubricant.
- Following any period of paralytic ileus, fluids and nutrition are gradually re-introduced when bowel sounds return and flatus is passed.
- Manual bowel care and bowel emptying techniques should be performed gently and sensitively to reduce risk of AD. In addition to this, consider using lignocaine gel for people who experience AD in response to bowel care.
- Enemas or rectal stimulants are administered daily for people with upper motor neuron bowel after paralytic ileus has resolved.
- Assess for neutropenia before starting a bowel management plan. People with SCI cannot receive rectal bowel care during periods of neutropenia and require an approach using laxatives.



## Planning

- As early as possible when bowel sounds return, develop an individualised bowel management plan with the goal of establishing self-management of regular, predictable bowel emptying of Bristol stool type 3 or 4 at a socially acceptable time and place, using minimal interventions. Consultation with a dietitian may be of benefit.
- A personalised bowel management plan is based on comprehensive assessment of the type of bowel dysfunction and other factors, including:
  - cognitive and functional ability
  - pre-existing medical conditions or multi-morbidities
  - medications
  - caregiver skill
  - individual factors including their motivations, resources and lifestyle.

A cycle of assessment, planning and evaluation ensures a bowel management plan stays current with the person's needs.<sup>1</sup> Review bowel health and bowel management programs annually or if something happens that impacts the person's bowel and/or bowel management. This review should include reassessment of:

- medications
- equipment needs.

This should be done in line with changes to functional ability associated with injury and/or age.

- If the person with SCI or the clinician wishes to consider TAI as a bowel management technique, a thorough assessment **MUST** be performed, to ensure client suitability. This is ideally conducted by someone with specialist experience in SCI bowel care. See information on TAI and specialist contacts
- When changing a component of a person's bowel management plan, wait three to four bowel cycles before making another change.
- People with SCI who have had a colostomy should be reminded to attend a per rectal check and enema every six months, to help prevent mucus build-up.



## Routine care

- Implement a scheduled bowel emptying regime in line with the person's bowel management plan, which includes:
  - DRE, starting from day one following injury, to assess bowel health and presence of faeces
  - abdominal massage
  - attending bowel care 20-30 minutes after a warm drink and/or meal to stimulate gastrocolic reflex
  - other bowel emptying techniques depending on the person and their neurogenic bowel type and management plan.
- Aim for Bristol stool type 3 or 4 based on type of neurogenic bowel.
- When conducting bowel emptying as outlined below:
  - record observations prior to and after digital removal of faeces
  - stop digital rectal procedures if the person with SCI asks you to stop, or experiences anal bleeding or increased pain, and record in the person's medical records
  - in people with SCI at T6 level or above, stop digital rectal procedures if there are any signs of AD, such as increased blood pressure or decreased heart rate, and immediately seek medical advice.

## Bowel emptying for upper motor neuron or reflex bowel

1. Conduct a DRE using a gloved lubricated finger.
2. Remove any stool present in the lower rectum, using digital rectal stimulation or otherwise digital removal of faeces.
3. Administer rectal stimulant (enema or suppository) and allow 10-15 minutes for effect.
4. Conduct digital rectal stimulation. Digital rectal stimulation is the insertion of a gloved lubricated finger through the anus into the rectum to the middle joint of the finger, and slow rotation of the finger in a circular motion maintaining contact with the rectal mucosa. Continue until flatus or stool passes, or the internal sphincter relaxes. No more than five stimulations, about 15-20 seconds in length, 5-10 minutes apart.





5. If the lower bowel remains full conduct digital removal of faeces. This involves the manual break-up and removal of faeces from the rectum. Position the person in the left lateral position, or over the toilet. Slowly and gently insert a gloved, lubricated finger through the anus into the rectum. Gently remove small sections of stool at a time, without hooking the finger as this can damage the rectal mucosa and overstretch the anal sphincter. Hard or impacted stool may require other approaches in conjunction with digital removal of faeces.
6. Check that the rectum is empty via digital rectal examination 5-10 minutes after stool has passed.
7. Repeat cycles of removal and assessment until empty.

#### **Bowel emptying for lower motor neuron or flaccid bowel**

1. Conduct a DRE using a gloved lubricated finger.
2. Conduct digital removal of faeces – see point five in Bowel emptying for upper motor neuron or reflex bowel.
3. Check that the rectum is empty via digital rectal examination 5-10 minutes after stool has passed.
4. Repeat cycles of removal and assessment until empty.

## Referrals and community-based SCI care

Bowel management requires continued interprofessional support and specialist input from a range of medical and allied health services, whether the person has been living with SCI for weeks or years.

An interdisciplinary approach to assessment and planning is best practice. This means that specialists are aware of each other's work with the person and contribute to a single integrated care plan. This is usually achieved via a lead healthcare professional, such as a general practitioner or a nominated member of an acute care team.

### Common referrals

#### Spinal specialist

Spinal specialists can provide overall systems review to ensure bowel management is optimised. Contact details for NSW specialist spinal cord injury services are outlined in the adjacent table. Further information is available at the [Agency for Clinical Innovation \(ACI\) Spinal Cord Injury Referral Directory](#).

<b>Royal North Shore Hospital (RNSH) Spinal Cord Injury Unit</b>	Phone (02) 9926 7111
<b>Royal Rehab Spinal Cord Injury Unit</b>	Phone (02) 9808 9269
<b>Prince of Wales Hospital Spinal Cord Injury Unit</b>	Phone (02) 9382 2222
<b>NSW Spinal Outreach Service</b> Multidisciplinary transitional outreach program for people discharged from the SSCIS units.	Phone (02) 9808 9666
<b>Regional Spinal Services</b>	
<b>Hunter Spinal Cord Injury Service (community-based rehab)</b>	Phone (02) 4925 7888
<b>Royal Newcastle Centre (inpatient rehab for low/incomplete SCI)</b>	Phone (02) 4922 3786
<b>Port Kembla Hospital Rehabilitation Service</b>	Phone (02) 4223 8203
<b>Rural SCI Service (RSCIS)</b> Network of nine specialist medical/multi-disciplinary spinal clinics per year across rural NSW.	Phone (02) 9808 9666

**Continence nurse**

Continence nurses support continence management and prevention, assessment and monitoring of complications related to bowel continence.

**Occupational therapist**

Occupational therapists ensure people with SCI have the physical equipment they need. Key equipment and tools such as mobile shower commodes, hoists and slings must be appropriately fitted to help enable effective bowel care and prevent pressure injuries. Occupational therapists can advise on bathroom design to support safety and function for people with SCI and their carer.

**Dietitian**

Dietitians provide specialist advice on adjusting a person's fibre, fluid and other nutritional intake to support their bowel management plan and general health following a SCI.

**Medical practitioner**

Medical practitioners such as general practitioners support and monitor bowel health, including through regular screening, and coordinate referrals to specialists as needed.

As part of an interdisciplinary approach, other specialists such as psychologists or social workers may influence a person's bowel management plan.

## About the project

This is one of four clinical resources on the provision of SCI care, developed primarily for clinicians who work with people with SCI in non-specialist settings. These include resources on bladder, bowel, skin and AD. They have been developed to fill a knowledge gap identified by non-specialist services, to support the co-design of a Spinal Cord Injury Network Model of Care.

The purpose of this clinical resource is to provide a summary of considerations for SCI care, sufficient to guide basic care and support clinicians to seek further information.

Information about the impact is outlined in the Summary, followed by bowel management that includes:

- immediate actions
- planning
- routine care.

These two sections are best read together, to gain a full picture of how and why.

# Background

This is a clinical resource on bowel management for people with SCI, particularly from the time of injury in acute care.

The target audience is healthcare professionals who are providing care to people with SCI in a non-specialist context, with limited access to specialist resources. An intended outcome of this resource is to reduce unwarranted clinical variation in care for people with SCI between specialist and non-specialist sites.

## Spinal cord injury

Spinal cord injury is damage to the spinal cord. As the spinal cord is a critical neural pathway between the brain and the rest of the body, SCI results in reduced function and mobility. The reduction can be to different extents, depending on the type of injury and the level of injury. The damage to the spinal cord may be complete or incomplete. Also, the higher the injury, the more parts of the body will have reduced or no function or mobility.

In Australia, SCIs may be the result of a trauma such as a motor vehicle collision or a workplace injury. Or it could be the result of non-traumatic causes such as infection, cancer or degenerative disorders.

Polytrauma patients who present with multiple traumatic injuries and SCI, may require a different care approach to what is outlined in this resource. In such circumstances, this resource should be used alongside specialist multi-trauma policies and guidelines.

People not diagnosed with SCI but who present with neurological deficit from other conditions, such as spina bifida and multiple sclerosis, may also benefit from the information and actions in this resource. The focus of this resource is people with SCI.

## Consultation and evidence review

This resource was developed in line with the ACI principles for developing clinical guidance (2021).

Consultation with healthcare professionals was facilitated by the NSW State Spinal Cord Injury Service (SSCIS). The process included these actions.

1. Formation of a working group that included clinicians from non-specialist settings to determine training needs and ensure content was fit for purpose, and clinicians with specialist knowledge to ensure content was current and evidence-based.
2. The working group met via regular online meetings to co-produce and refine the core content in this resource. The regular meetings had their own value, beyond delivering this resource. They contributed to a shared understanding and shared language between specialist and non-specialist clinicians on matters related to SCI care.
3. Final consultation with key healthcare professionals in non-specialist and specialist SCI units was conducted for review and approval.

To inform the development of this resource, a PubMed search was conducted of terms ("spinal cord injuries" OR "paraplegia" OR "quadriplegia") and ("neurogenic" AND "bowel management") filtered from 2014 to 2022. Broader studies were opportunistically gathered from snowball searches informed by reference lists of key articles and stakeholder advice.

Google was searched for grey literature using key terms such as ("spinal cord injury" AND "bowel management" and ("neurogenic" AND "bowel management"). Only the first three pages (or top 30 hits) of the search results were screened.

## Guideline review

Clinical guidelines that inform this work include those by the Spinal Cord Injury Rehabilitation Evidence (SCIRE)<sup>9</sup>, the Consortium for Spinal Cord Medicine for the Paralyzed Veterans of America<sup>10</sup> and others.<sup>1, 11, 12</sup>

## Further information

This resource is an adjunct to other more detailed resources currently available on bowel management for people with SCI. It functions as:

1. a framework of basic care and is intended as a starting point for further discussion with Spinal Cord Injury Unit (SCIU) specialists
2. a complement to local policies and guidelines on bowel management and related areas of care, that supports staff to develop a deeper understanding of the needs of people with SCI that builds on their current practice – not an alternative or replacement resource.

A range of more detailed resources, with different purposes and target audiences, have been used in the development of this document. They provide further information for people with SCI, their families and diverse professionals in their care team.

[See Resources for further information.](#)

## Additional resources

Table 2: Resources for further information

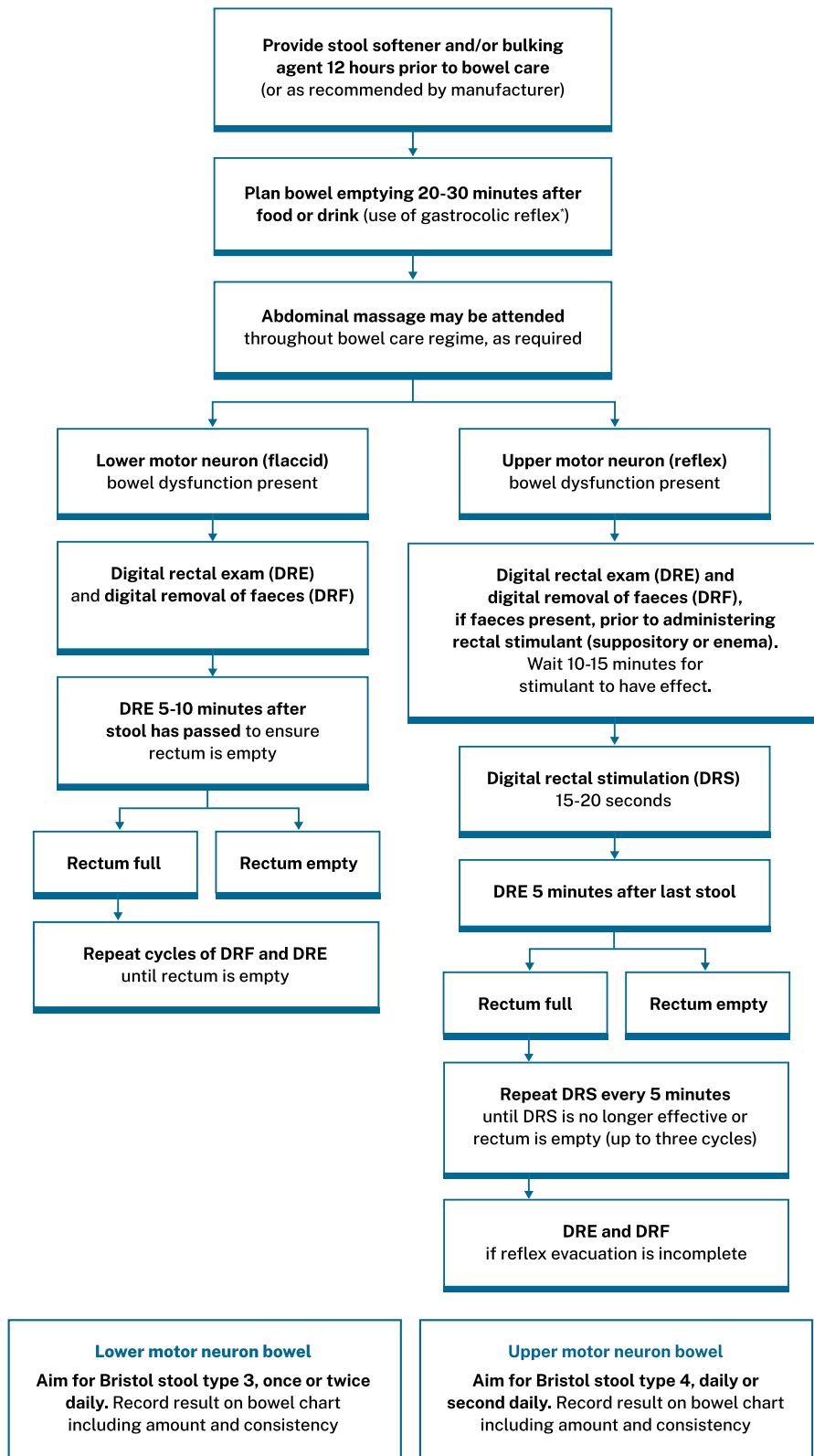
Purpose	Includes information on
<p><a href="#">Management of the Neurogenic Bowel for Adults with Spinal Cord Injuries</a> fact sheet NSW Agency for Clinical Innovation (ACI), 2022</p>	
<p><b>Targets:</b> non-specialist health professionals involved in health plans for people with SCI</p> <p><b>Content:</b> functional anatomy and physiology of defecation; defecation following SCI; bowel management; where to obtain supplies; who to contact for advice</p> <p><b>Total pages:</b> 23</p>	<ul style="list-style-type: none"> <li>• Bowel conditions</li> <li>• Day-to-day management actions</li> <li>• Health planning and maintenance</li> </ul>
<p><a href="#">Health Maintenance for Adults with Spinal Cord Injuries</a> fact sheet NSW Agency for Clinical Innovation (ACI), 2014</p>	
<p><b>Targets:</b> non-specialist health professionals involved in health plans for people with SCI</p> <p><b>Content:</b> health maintenance recommendations for key areas of health and functioning for people with SCI, including bowel</p> <p><b>Total pages:</b> One for bowel, with other relevant general sections such as Red flags and Additional resources in the 15-page fact sheet</p>	<ul style="list-style-type: none"> <li>• Health planning and maintenance</li> </ul>
<p><a href="#">Spinal Cord Injury Health Maintenance Tool</a> – the section, the bowel and its associated problems SCI Wellness Project – Royal Rehab with the University of Sydney and icare, 2020</p>	
<p><b>Targets:</b> People with SCI and carers</p> <p><b>Content:</b> know about your bowels; check if you have a problem; prevention; bowel management toolbox; management of bowel problems; further resources</p> <p><b>Total pages:</b> 40</p>	<ul style="list-style-type: none"> <li>• Bowel conditions</li> <li>• Day-to-day management actions</li> <li>• Health planning and maintenance</li> </ul>

Table 2: Resources for further information (cont.)

Purpose	Includes information on
<p><a href="#">Solving common bowel problems - A resource tool for persons with spinal cord injury</a>            Contenance Foundation of Australia, 2009</p>	
<p><b>Targets:</b> people with SCI</p> <p><b>Content:</b> bowel management program and autonomic dysreflexia; stools too fluid; stool is well-formed but high-up and seems very slow to pass; stool moves to the rectum but is too soft to pass; alternating diarrhoea and constipation; stool is too hard and too high-up; stool is too hard to pass; accidents or irregularity; stool is too high-up and too soft</p> <p><b>Total pages:</b> 13</p>	<ul style="list-style-type: none"> <li>• Bowel conditions</li> <li>• Day-to-day management actions</li> <li>• Health planning and maintenance</li> </ul>
<p><a href="#">Your Bowel fact sheet</a>            Forward Ability Support (previously Paraquad), 2019</p>	
<p><b>Targets:</b> people with SCI</p> <p><b>Content:</b> how does the bowel normally work; how does a spinal cord injury affect the bowel; what are the main factors in bowel management; tips to assist with bowel evacuation; difficulties managing your bowels</p> <p><b>Total pages:</b> 2</p>	<ul style="list-style-type: none"> <li>• Bowel conditions</li> <li>• Day-to-day management actions</li> </ul>
<p><a href="#">Guidelines for Management of Neurogenic Bowel Dysfunction in Individuals with Central Neurological Conditions</a>            Initiated by the Multidisciplinary Association of Spinal Cord Injured Professionals, 2012</p>	
<p><b>Targets:</b> healthcare practitioners</p> <p><b>Content:</b> quick guide to neurogenic bowel management; what is neurogenic bowel dysfunction; clinical outcomes and complications; neurogenic bowel management; who should assess and plan the management program; who can give neurogenic bowel care; interventions for management; bowel management in early acute-onset central neurological conditions; how is an individualised bowel care program developed; what should be recorded about bowel management; what preparation does an individual need for managing their bowel dysfunction</p> <p><b>Total pages:</b> 56</p>	<ul style="list-style-type: none"> <li>• Bowel conditions</li> <li>• Day-to-day management actions</li> <li>• Health planning and maintenance</li> </ul>



# Appendix 1: Bowel management after spinal cord injury flow chart



\* Gastrocolic reflex occurs when the ingestion of food stimulates defecation 20-30 minutes later.

## Appendix 2: Commonly used oral and rectal medications

There are many different types of oral medications (laxatives) and rectal medication (enemas and suppositories) that may be of assistance in establishing a regular bowel routine. Sometimes these will need to be adjusted accordingly.

**Table 3: Common oral medications**

Type of laxative	How it works	Common examples
<b>Softener</b>	Help manage the consistency of the stool. They help stool to retain water, soften the stool and help it slide through the colon	Docusate sodium (Coloxyl)
<b>Osmotic</b>	Increase stool bulk by drawing water into the stool from the colon. This promotes movement of the stool through the colon and softens the stool	Macrogol (Movicol, Osmolax), lactulose (Duphalac, Actilax)
<b>Bulk forming</b>	These fibre supplements add bulk to the stool. They can be used to alter the consistency of the stool. The person needs to drink extra fluid when taking these	Psyllium husk (Metamucil), wheat dextrin (Benefibre), sterculia (Normafibre, Normacol), ispaghula husk (Fybogel)
<b>Stimulant</b>	Stimulates the colon to contract and move the stool through the colon. Stimulant medications should be avoided for long-term use	Sennosides (Senokot, Senna, Coloxyl with Senna, Nulax), Bisacodyl (Bisacodyl, Ducolax)
<b>Bulk forming + stimulant</b>	Adds bulk to stool at the same time as stimulating the colon to contract.	Sterculia and frangula bark (Normacol Plus)

Table 4: Common rectal medications

Type of medication	How it works	Common examples
<b>Enema</b>	Lubricates the rectum and softens stool	Sodium citrate dihydrate, sodium lauryl sulfoacetate and sorbitol (MicroLax, Micolette)
<b>Stimulating enema</b>	Stimulates the lining of the rectum and softens the stool. Stimulants should be avoided for long-term use	Bisacodyl (Bisalax)
<b>Osmotic enema</b>	A high-volume osmotic laxative, used to treat severe constipation	Monobasic sodium phosphate and dibasic sodium phosphate (Fleet)
<b>Suppository</b>	Lubricates the rectum and softens the stool	Glycerol (Glycerine)
<b>Stimulating suppository</b>	Stimulates nerve ending in the rectum to increase colon activity. Stimulants should be avoided for long-term use	Bisacodyl (Bisalax, Ducolax)

\*MicroLax and Bisalax enemas may be administered as a high enema or what can be referred to as a “10x10”. Delivering either a MicroLax or Bisalax enema higher up into the rectum using a short tube. This may be of assistance if the stool is positioned higher up, and/or is too soft to be removed effectively. This is no longer offered to people with a new SCI. Some people with SCI may already have an established bowel regime using this method, and this should not be interrupted. If clinicians in non-specialist settings need further information on how to administer a high enema, contact a Spinal Cord Injury Unit at the Royal North Shore Hospital, the Royal Rehab or the Prince of Wales Hospital.

## References

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The Agency for Clinical Innovation (ACI) is the lead agency for innovation in clinical care.

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