

## What is the best way to manage neurogenic bowel dysfunction?

McClurg, Doreen; Norton, Christine

*Published in:*  
BMJ

*DOI:*  
[10.1136/bmj.i3931](https://doi.org/10.1136/bmj.i3931)

*Publication date:*  
2016

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication in ResearchOnline](#)

*Citation for published version (Harvard):*  
McClurg, D & Norton, C 2016, 'What is the best way to manage neurogenic bowel dysfunction?', *BMJ*, vol. 354, no. i3931. <https://doi.org/10.1136/bmj.i3931>

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

### Take down policy

If you believe that this document breaches copyright please view our takedown policy at <https://edshare.gcu.ac.uk/id/eprint/5179> for details of how to contact us.

## PRACTICE



## UNCERTAINTIES

# What is the best way to manage neurogenic bowel dysfunction?

Doreen McClurg *professor of physiotherapy and the pelvic floor*<sup>1</sup>, Christine Norton *professor of clinical nursing research*<sup>2</sup>

<sup>1</sup>Nursing Midwifery and Allied Health Professions Research Unit, Glasgow Caledonian University, Glasgow G4 0BA, UK; <sup>2</sup>King's College London School of Medical Education, Florence Nightingale School of Nursing and Midwifery, London, UK

A single episode of faecal incontinence can precipitate a fear of repetition and may lead to reduced social activity and isolation. Bowel dysfunction, faecal incontinence, and constipation have a prevalence of around 70% in people with central neurological disease such as Parkinson's disease, stroke, multiple sclerosis, or spinal cord injury. Tools such as the Bristol Stool Chart have been developed to aid conversation about bowel dysfunction (fig 1). Constipation may lead to difficult evacuation, abdominal pain and bloating, haemorrhoids, anal fissures, rectal bleeding, prolapse, and autonomic dysreflexia. Hospital admission for impaction occurs more than twice as frequently as in healthy people. Management to ameliorate either incontinence or constipation risks precipitating the other. The condition is time consuming and arduous and causes anxiety to the patient and care givers.

## What is the evidence of the uncertainty?

Various approaches have been tried for faecal incontinence and constipation in these patients, but limited research is available to allow recommendations for care to be made. An updated Cochrane review published in 2014 identified 20 randomised controlled trials (902 participants) comparing different management strategies (table 1<sup>1</sup>). Five studies that reported on the use of cisapride and tegaserod were excluded from this update owing to adverse cardiovascular effects. Limited evidence from individual trials suggests improvement in bowel function with a bulk forming laxative (psyllium), an isosmotic macrogol laxative, abdominal massage, transanal irrigation, and sacral nerve stimulation. Some suppositories were effective in aiding bowel movements, particularly with morning use. One study found digital evacuation of stools to be more effective than oral or rectal drugs. Overall, the review concluded that the

evidence was of very poor quality as most studies are small and not reliably reported.

Using the same search criteria, we updated the Cochrane searches and identified eight additional randomised controlled trials (367 participants) on the role of physical interventions such as daily standing and abdominal massage, acupuncture, electrical stimulation, and drugs. However, these additional studies are small and at high risk of bias (table 1<sup>2</sup>).

## Is ongoing research likely to provide relevant evidence?

We searched clinicaltrials.gov for ongoing studies and found one trial, which is our own Health Technology Assessment funded trial comparing abdominal massage plus advice with advice alone in people with multiple sclerosis (200 participants), which will report in 2017. A qualitative study is ongoing in patients with multiple sclerosis to evaluate the effect of bowel dysfunction on quality of life and their experience in accessing services.

## What should we do in the light of the uncertainty?

Cisapride and tegaserod should not be prescribed. Guidance on faecal incontinence from the National Institute for Health and Care Excellence (NICE) suggests that clinicians should proactively ask about symptoms as patients may not volunteer the information. Explain to patients that, although evidence is poor, clinicians have some experience with a variety of options and it may be a case of trying the simpler ones such as diet modification to start with.

Correspondence to: D McClurg Doreen.mcclurg@gcu.ac.uk

This is one of a series of occasional articles that highlight areas of practice where management lacks convincing supporting evidence. The series advisers are Sera Tort, clinical editor, and David Tovey, editor in chief, the Cochrane Library. To suggest a topic for this series, please email us at [uncertainties@bmj.com](mailto:uncertainties@bmj.com)

**What you need to know**

- Constipation and faecal incontinence are common in patients with central neurological disease and may prove difficult to manage
- Limited evidence and clinical expertise suggest that diet modification, oral laxatives, rectal stimulants, digital stimulation, manual evacuation of faeces, and abdominal massage are options that may be tried
- Quality data to support these approaches are lacking, and trials are needed in mixed groups of patients to explore the efficacy of common approaches alone and in combination

On the basis of guidance from the Multidisciplinary Association of Spinal Cord Injured Professionals, we recommend a stepwise approach to establish a regular pattern that is comfortable for the patient, using any number of the possible interventions alone or in combination:

- Establish an appropriate diet—for example, avoid insufficient or excessive fibre, attempt three meals a day, and aim for liquid intake of at least 1.5 L per day.
- Aim to establish a bowel habit by a routine of attempting defecation when peristalsis is likely to be maximal (after meals).
- Make sure the patient can access the toilet or is supported in doing so as needed.
- Review drugs that could exacerbate either constipation (for example, analgesics) or faecal incontinence (for example, laxatives or antacids).
- Consider oral laxatives or rectal suppositories alone or in combination.
- A continence nurse specialist could teach abdominal massage, manual evacuation, digital stimulation, or transanal irrigation to the patient or carer to aid self management.

Consider referral to a specialist service if symptoms remain unsolved. A combination of anorectal physiology tests, gut transit studies (fig 2), and endoanal ultrasonography will assist in determining whether further management, such as surgery, is appropriate.

Competing interests: We have read and understood BMJ policy on declaration of interests and declare the following interests: None.

Provenance and peer review: Commissioned; externally peer reviewed.

1 Emmanuel A. Review of the efficacy and safety of transanal irrigation for neurogenic bowel dysfunction. *Spinal Cord* 2010;48:664-73. doi:10.1038/sc.2010.5 pmid:20142830.

- Coggrave M, Norton C, Cody JD. Management of faecal incontinence and constipation in adults with central neurological diseases. *Cochrane Database Syst Rev* 2014;1:CD002115.pmid:24420006.
- McClurg D, Beattie K, Lowe-Strong A, Hagen S. The elephant in the room: the impact of bowel dysfunction on people with multiple sclerosis. *Journal of the Association of Chartered Physiotherapists in Women's Health* 2012;111:13-21.
- Correa GI, Rotter KP. Clinical evaluation and management of neurogenic bowel after spinal cord injury. *Spinal Cord* 2000;38:301-8. doi:10.1038/sj.sc.3100851 pmid:10822403.
- Harari D, Sarkarati M, Gurwitz JH, McGlinchey-Berroth G, Minaker KL. Constipation-related symptoms and bowel program concerning individuals with spinal cord injury. *Spinal Cord* 1997;35:394-401. doi:10.1038/sj.sc.3100417 pmid:9194264.
- Lynch AC, Wong C, Anthony A, Dobbs BR, Frizelle FA. Bowel dysfunction following spinal cord injury: a description of bowel function in a spinal cord-injured population and comparison with age and gender matched controls. *Spinal Cord* 2000;38:717-23. doi:10.1038/sj.sc.3101058 pmid:11175370.
- Kwok S, Harvey L, Glinsky J, Bowden JL, Coggrave M, Tussler D. Does regular standing improve bowel function in people with spinal cord injury? A randomised crossover trial. *Spinal Cord* 2015;53:36-41. doi:10.1038/sc.2014.189 pmid:25366527.
- McClurg D, Hagen S, Cunningham AL, Paul L, Dickinson L, Jamieson K. Feasibility of abdominal massage for the alleviation of symptoms of constipation in people with Parkinson's[abstract]. *NeuroUrol Urodyn* 2013;32:685-6.
- Ondo WG, Kenney C, Sullivan K, et al. Placebo-controlled trial of lubiprostone for constipation associated with Parkinson disease. *Neurology* 2012;78:1650-4. doi:10.1212/WNL.0b013e3182574f28 pmid:22573627.
- Grijalva, Guizar-Sahagún G, Rodríguez-Pacheco D, Francisco-Argüelles C, Castañeda-Hernández G, Palma-Aguirre JA. Gastric emptying effect by 4-aminopyridine in patients with chronic spinal cord injury. *Arch Med Res* 2007;38:392-7. doi:10.1016/j.arcmed.2006.11.007 pmid:17416285.
- Ren Z, Wu QM, Li DD, Liu WA, Li XR, Lin XM. [Post-stroke constipation treated with acupuncture therapy of regulating qi circulation of fu-organ] [Chinese]. *Zhongguo Zhenjiu* 2013;33:893.
- Xiao L, Wang LY, Cui Q, Xu Y, Yao LH. [Clinical observation of integrated acupuncture and herbal medicine for constipation of excess fu syndrome due to phlegm heat in acute cerebral infarction] [Chinese]. *Zhongguo Zhenjiu* 2011;31:400-4.
- Worsøe J, Rasmussen M, Christensen P, Krogh K. Neurostimulation for neurogenic bowel dysfunction. *Gastroenterol Res Pract* 2013;2013:563294. doi:10.1155/2013/563294 pmid:23573076.
- Khan U, Mason JM, Mecci M, Yiannakou Y. A prospective trial of temporary sacral nerve stimulation for constipation associated with neurological disease. *Colorectal Dis* 2014;16:1001-9. doi:10.1111/codi.12789 pmid:25251843.
- ISRCTN Registry. ISRCTN 85007023: Abdominal massage for bowel dysfunction in people with multiple sclerosis. 2014. <http://www.isrctn.com/search?q=85007023>.
- National Institute for Health and Care Excellence. *Faecal incontinence: the management of faecal incontinence in adults*. NICE, 2007.
- Multidisciplinary Association of Spinal Cord Injured Professionals. Guidelines for management of neurogenic bowel dysfunction in individuals with central neurological conditions. 2012. <http://www.mascip.co.uk/wp-content/uploads/2015/02/CV653N-Neurogenic-Guidelines-Sept-2012.pdf>.
- Krogh K, Christensen P, Sabroe S, Laurberg S. Neurogenic bowel dysfunction score. *Spinal Cord* 2006;44:625-31. doi:10.1038/sj.sc.3101887 pmid:16344850.

Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to <http://group.bmj.com/group/rights-licensing/permissions>

**Recommendations for future research**

As most commonly used approaches are poorly researched, a need exists for adequately powered randomised controlled trials as below:

- Population—People with various neurological conditions
- Interventions—Individual and combined approaches for constipation and faecal incontinence
- Outcomes—Standardised outcome measures such as the Neurogenic Bowel Dysfunction Score, which records frequency of defecation, time spent trying to defecate, frequency of faecal or flatal incontinence, interventions such as drugs or digital stimulation, and perianal skin problems; acceptability of interventions to patients

Additionally, research on innovative faecal containment devices is needed

**How patients were involved in creation of this article**

We discussed a draft of this paper with five patients with neurogenic bowel dysfunction. They stressed the need for information on self management strategies such as diet and use of laxatives and on drugs that could make them constipated, as often they might receive misleading information (such as all fibre is good).

Establishing a routine, if possible, was important for both patients and their carers. They wanted to know how to decide which adjunctive treatment may be tried when symptoms did not respond. In patients with faecal incontinence, containment of faecal matter was a major challenge.

With their comments, we reduced the use of medical terminology in the article and highlighted the impact of bowel dysfunction on quality of life of these patients

**Education into practice**

- Do you routinely ask patients with neurological conditions whether they have bowel symptoms?

**Table**

Table 1 | Overview of evidence

Approach	Population	No of studies; participants	Outcome	Risk of bias	Cochrane review2014*	Additional studies identified
<b>General</b>						
Diet or fluid	–	None	–	–	–	–
Education	Stroke	1; 146	Some benefit	Medium	Harari 2004	–
Stepwise advice	Spinal cord injury	1; 68	No change	Medium	Coggrave 2010	–
Carbonated water	Stroke	1; 34	Some benefit	High	Mun 2011	–
Inulin fortified beverage	Wheel chair	1; 15	No change	High	Dahl 2005	–
<b>Physical interventions</b>						
Daily standing	Spinal cord injury	1; 20	No effect	High	–	Kwok 2015
Abdominal massage	Mixed	4; 125	Limited benefit	Medium	Emly 1998	–
	Stroke	1; 31	Some benefit	High	Jeon 2005	–
	Multiple sclerosis	1; 30	Some benefit	Low	McClurg 2011	–
	Parkinson's disease	1; 30	Some benefit	Low	–	McClurg 2013
<b>Drugs</b>						
Psyllium	Parkinson's disease	1; 7	No benefit	High	Asraf 1997	–
Isosmotic macrogol	Parkinson's disease	1; 57	No benefit	High	Zangaglia 2007	–
Prucalopride	Multiple sclerosis	1; 11	Some benefit	High	Medaer 1999	–
	Spinal cord injury	1; 23	Not significant	Medium	Krogh 2002	–
Intravenous neostigmine-glycopyrrolate	Spinal cord injury	1; 18	Some benefit	High	Korsten2005	–
		1; 7	Some benefit	Medium	Rosman 2008	–
Lubiprostone	Parkinson's disease	1; 54	Marked benefit	High	–	Ondo 2012
4-aminopyridine	Spinal cord injury	1; 27	Marked benefit	High	–	Grijalva 2007
<b>Rectal stimulants</b>						
Polyethylene glycol based bisacodyl suppository	Spinal cord injury	2; 75	Marked benefit	High	Cornell 1973	–
			Some benefit	–	House 1997	–

Table 1 (continued)

Approach	Population	No of studies; participants	Outcome	Risk of bias	Cochrane review2014*	Additional studies identified
Timing of suppository use	Stroke	1; 46	Morning better	High	Venn 1992	–
<b>Chinese remedies</b>						
Acupuncture	Stroke	2; 75	Some benefit	Medium	–	Ren 2013
		1; 160	Some benefit	Medium	–	Xiao 2011
Chinese medication	Stroke	1; 200	Difficult to interpret	High	Huang 2002	–
<b>Electrical stimulation</b>						
Dorsal genital nerve	Spinal cord injury	1; 7	Inhibitory effect on rectum	High	–	Worsøe 2012
Abdominal muscles	Spinal cord injury	1; 8	Significant benefit	High	Korstein 2004	–
Electro acupuncture	Stroke	1; 80	–	High	Wang 2008	–
Sacral nerve stimulation	Multiple sclerosis	1; 12	Unclear	High	–	Khan 2014
	Spinal cord injury	1; 5				
<b>Other</b>						
Transanal irrigation	Spinal cord injury	1; 87	Benefit	Low	Christensen 2006	–

\*See Cochrane review for full references.

## Figures

### 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. <b>Entirely Liquid</b>

Fig 1 Bristol Stool Chart



Fig 2 Constipation markers. Coloured x ray of silicone markers (dots, highlighted yellow) that are being used to diagnose the severity of a patient's constipation. These markers are still in the digestive system six days after being swallowed. Normally, food passes through the digestive system in a day or two. The image also shows the bones (green) of the pelvis (across bottom) and the spine (down centre), as well as the lowest ribs (top)

[Image: CNRI/SCIENCE PHOTO LIBRARY]