



Best Practice

Evidence based information sheets for health professionals

Management of constipation in older adults

Recommendations

- Prevention is better than cure so it is recommended that older adults receive advice and education about hydration and a good diet with fibre sources: cereals; nuts and seeds; wholemeal breads; vegetables and raw vegetables; and fruits (**Grade A**)
- Screen older adult patients for the following conditions: history of medication use (especially polypharmacy and taking laxatives); cognitive status (**Grade A**)
- For persons unable to walk or who are restricted to bed or otherwise incapacitated, exercises such as low trunk rotation, pelvic tilt and single leg lifts are advised (**Grade B**)
- Monitor and record bowel movements for frequency, character, pattern, episodes of constipation/faecal soiling and use of oral or rectal laxative interventions (**Grade B**)
- Osmotic laxatives such as PEG and lactulose, and bulking agents like psyllium and bran are beneficial in managing constipation in older adults and should be promoted; it is necessary to determine individual requirements (**Grade B**)

Information Source

This Best Practice information sheet, which supersedes the JBI information sheet of the same title published in 1999,¹ is based on a systematic review (2005)² and best practice guideline.³

Background

Constipation

The term constipation refers to difficulty during defecation, and infrequent bowel movements over an extended period of time. Symptoms include hard/dry stool, bloating and abdominal pain. Definitions of normal bowel function vary, but frequency ranges between three times per week and three times per day.^{2,3} Older adults tend to gauge constipation based on symptoms like pain, stool hardness or straining rather than frequency alone. There is a link between ageing and likelihood of constipation, ≥ 70 years or older.³ Lifestyle issues are associated with constipation, particularly level of fluid intake, dietary fibre, history of laxative usage, sedentary habits and delaying the urge to defecate.

Risk Factors

While healthy, active older people have normal bowel function, risk factors do exist:³

- **Fluid Intake:** This is often cited as a risk factor in that low fluid intake is linked to slow colonic transit and low stool output.
- **Diet:** The prevalence of digestive disease is increasing due to a roughage-free modern diet. Studies have shown that dietary fibre influences bowel transit time, faecal weight and bowel movement frequency.
- **Mobility:** Constipation is more prevalent in people who do little exercise, with chair- or bed-bound people at the highest risk.

- **Environment:** Issues like reduced privacy, inaccessible toileting facilities and reliance on other people for assistance, may contribute to the development of constipation.
- **Other Factors:** Constipation may occur due to anxiety, depression and impaired cognitive function. Some medications, such as opioid analgesics, anticholinergics and anti-depressants, may also increase risk of constipation.

Objectives

The purpose of this information sheet is to present the best available evidence for the management of constipation in older adults.

Types of Intervention

Interventions consisted of traditional medical therapies for managing chronic constipation. Studies that were randomised, conducted on adult subjects and had data regarding study design, design, outcome measures, and adverse events were included. This systematic review focused on the major types of intervention: osmotic laxatives, bulking agents, wetting agents, stimulant laxatives and others (i.e. Tegaserod).

Grades of Recommendation

These Grades of Recommendation have been based on the JBI-developed *2006 Grades of Effectiveness*⁴

- Grade A** Strong support that merits application
- Grade B** Moderate support that warrants consideration of application
- Grade C** Not supported

Quality of the research

The quality of the research varied. For example, while the PEG (polyethylene glycol) and Tegaserod studies were placebo-controlled, sample sizes were generally small. Despite many studies being consistent in stating that constipation presented as less than 2 or 3 stools per week, few referred to the definition developed in 1998 by the Rome II Committee, which defined functional constipation as consisting of – over a 12 week period – the following: straining; lumpy or hard stools; sensation of incomplete defecation or anorectal obstruction/blockage; manual or digital maneuvering; and less than 3 defecations per week. This discrepancy prevented more effective comparisons of trials that were similar. Nonetheless A and B level Grades of Recommendation for some interventions were developed.

Findings

Current Management

Assessment of risk factors and history, including auscultation, palpation and percussion of the abdomen and if indicated, a rectal examination should be done to establish a baseline of each at-risk person's history and presentation. There is no evidence to support the use of diagnostic tests, although for abdominal X-ray the absence of evidence does not imply evidence of no effect. Literature on effectiveness of interventions can be categorised according to the type of therapy, e.g. bulking agents, surfactants, osmotics, peristaltic stimulants, etc.³ However, these categories do not include recommendations concerning exercise, fluid intake and non-pharmacotherapeutic interventions. Hence these are addressed separately in this *Best Practice* sheet.

Non-Pharmacological Interventions

A variety of non-pharmacological approaches to constipation have been evaluated, including massage, exercise and biofeedback. Small studies evaluated the effectiveness of abdominal massage on its own or in combination with exercise in constipated people, but there is little evidence to support its use. Exercise is an integral feature of bowel management programs, and a lack of physical activity is a factor in the development of constipation in some people. Its effectiveness as an intervention to prevent or treat constipation, however, has yet to be demonstrated.³

Non-Laxative Interventions

Several products are recommended or included in bowel management programs to prevent constipation, including bread, bran, lentils, aloe vera, mineral water and fruit such as prunes or

rhubarb.^{2,3} Studies evaluating combinations of products such as a fruit mixture comprising dates, currents, fig and prune concentrate, and laxative jams, puddings or biscuits have supported their effectiveness, but these products have not been evaluated by any RCT. An example of one such mixture, Prune Supplement, is included here. Increased fluid intake is commonly recommended to prevent constipation, and an increased fluid intake has been evaluated in conjunction with other products. However, it has not been evaluated individually and its effectiveness is unclear. Increasing dietary fibre intake is a well recommended prevention strategy, but without adequate fluid intake it may increase faecal impaction in the immobile elderly.³

Bulking agents

Bulking agents were found to be effective in improving stool frequency, consistency and duration of defecation in a range of studies and types of fiber derivative. Bran from either a wheat or corn-based source improved stool frequency and consistency, with no significant side effects compared to regular diet among older adults. Bran may not decrease the need for other forms of assistance with defecation as urge to defecate may be decreased, potentially requiring a combination of bulking plus stimulant laxatives.²

Psyllium is derived from fibrous husks and has proved to be more effective than placebo regarding stool frequency and stool consistency. This finding was from one larger trial, while two smaller trials found no significant difference between psyllium and placebo. Non-blinded studies reported favourable outcomes from psyllium compared to stimulant laxatives, but these findings should be treated with caution given the lack of blinding. Psyllium combined with senna was more effective than psyllium alone, but associated with more side effects while psyllium with docusate (a softener) was less effective than psyllium alone.²

Osmotic agents

PEG solution is a non-absorbable osmotic, commonly used as a gut cleansing preparation prior to colonoscopy or surgery. Compared to placebo and lactulose, PEG was more effective and potentially less costly, although the evidence comes from short-term trials.²

Lactulose was compared to placebo in three studies and found to be safe and effective for idiopathic constipation, although it was associated with bloating and flatulence. When compared to PEG solution, lactulose was less effective, while another study found sorbitol was as effective and had less side effects. Psyllium, a bulking agent, was equally effective as lactulose.²

One RCT studied milk of magnesia and found it to be associated with more frequent defecation than bulking agents, with more "normal" stool consistency and less need for concomitant laxative therapy.²

Softening agents

One study found psyllium to be more effective than docusate (either sodium or calcium). Compared with placebo, docusate was more effective, but produced only a modest improvement in constipation, suggesting other forms of therapy are preferable to softening agents.²

Stimulant agents

There is a lack of placebo controlled evidence on stimulant laxatives, as most research compares combined therapies, making identification of effect specific to stimulants difficult to establish. Studies of psyllium with senna compared to lactulose suggest the combined psyllium and senna proved more effective, with a potential cost saving compared to lactulose alone.² Other studies favoured lactulose over bisacodyl or stimulant laxatives containing senna or anthraquinone derivatives, while there was no difference in effectiveness between bisacodyl and bisoxatin.^{2,3}

Tegaserod, a motility stimulant, was evaluated in a double-blinded placebo controlled trial. The evidence strongly favored Tegaserod in 2mg or 6mg twice-daily doses over 12 weeks of follow-up for complete, spontaneous defecation, stool form, bloating, straining, abdominal pain, global constipation assessment and bowel habits, with no observed rebound constipation. The beneficial effect was not dose dependent, i.e. 2mg was as effective as 6mg.²

Misoprostol was compared to placebo in one small trial. The results suggested misoprostol significantly improved colonic transit time, increased stool weight, and frequency of defecation per week. However, the study had a small population and further research is needed before considering misoprostol as a primary therapy for constipation.²

Enemas and Suppositories

Enemas and suppositories clear the rectum and restore normal function prior to the commencement of a bowel management program.³ There has been little research evaluating their effectiveness in the elderly. Enemas are associated with greater risk as a result of reactions to the solution administered or through mechanical injury during the procedure.

Table 1

| Class | Example | Onset Action |
|---------------------|---|-----------------------------|
| Bulking Agent | - ispaghula husk (Fybogel) - psyllium (Metamucil, Agiofibe) - sterculia (one of the agents in Granacol & Normacol) | 48 - 72 hours |
| Osmotic Laxatives | - magnesium salts (Magnesia S Pellegrino, Epsom salts) - Sorbitol (Sorbilax) - lactulose (Duphalac, Lac Dol and Actilax) | 0.5 - 3 hours 24 - 72 hours |
| Stool Softeners | - docusate sodium (coloxyl) - poloxalkol (coloxyl drops) - liquid paraffin (Parachoc) | 24 - 72 hours |
| Stimulant Laxatives | - bisacodyl (Bisalax, Duro lax) - frangula bark (one of the agents in Granacol and Normacol) - phenolphthalein (laxettes) - senna (Senokot) | 6 - 12 hours |

Patient Assessment

There has been only limited research on assessing people with constipation, as much of the information emphasises procedures and investigations. Assessment should encompass not only if they are constipated, but also identify contributing factors.

History

The aim is to identify lifestyle factors impacting on a person's bowel function:³

- inadequate dietary fibre intake;
- impaired mobility or recent reductions in level of activity;
- low fluid intake, for example less than 1.5 litres per day;
- medications; and
- any surgery or disease that may contribute to development of constipation.

The person's normal bowel pattern, toileting preferences and current status should be determined, and this would include:

- recent changes in bowel habits or frequency of movements;
- consistency of stool;
- normal activities to maintain bowel function (eg what works for them);
- presence of faecal incontinence;
- need for frequent straining during toileting;
- if recent illness (eg stroke), what was their normal prior bowel pattern;
- if any laxatives are being taken, what type, frequency and length of time of use; and

Any symptoms of constipation should be identified, for instance:

- nausea, vomiting or rectal pain on defecation;
- straining during defecation or infrequent bowel movements;
- feelings of incomplete emptying after bowel movements;
- abdominal pain or discomfort; and
- hard stools.

Management of Constipation

The management of constipation must be individualised according to each person's needs. Note that patients with spinal injuries or on long-term opioid analgesics may require specialised bowel management programs.³ The following treatment options represent different expert opinions.³

Acute Constipation

Initial management of moderate to severe acute constipation may include suppositories, enemas or osmotic laxatives to clear the rectum, followed by implementing a bowel management program using preventative interventions, such as modifying dietary and fluid intake, education and effective bowel habits. When severe constipation is unresponsive to treatment, advice from a doctor, continence adviser or stomal therapist is advised.

Chronic Constipation

Bulking agents should be tried for people who have a low dietary fibre, and have no specific underlying cause of constipation. Osmotic agents may be effective in the treatment of chronic constipation. The aim should be a regular bowel habit rather than intermittent 'clean outs'. Treatment should therefore promote regular bowel habits using small regular doses of laxatives, titrated to individuals. If osmotic agents are not effective, or if not tolerated, stimulant laxatives may be effective.

Choice of Treatment

Bulking agents are effective for the ambulant elderly, while osmotic and stimulant laxatives may be more effective for bed-bound people.

Use of Enemas and Suppositories

Enemas and suppositories may be required to clear the rectum prior to commencing a bowel management program. They may be indicated as the initial treatment for moderate to severe constipation, or constipation associated with opioid analgesia. Enemas and suppositories may also be indicated for bed-bound people, as part of a bowel management program.

Faecal Impaction

Faecal impaction will need special management, which will most likely involve enemas to clear the rectum, but may also include osmotic or stimulant laxatives. When normal bowel function is restored, a bowel management program must begin to prevent its recurrence.

Cost of Treatments

Considerable cost variations in laxative agents exist but the more expensive agents are not necessarily the most effective. For example, of the osmotic laxatives, magnesium salts and sorbitol are much cheaper than lactulose. However, constipation can generally be prevented through education, dietary changes and lifestyle modifications, which have few cost implications.

Figure 1¹

Prune Supplement Recipe

Ingredients

- 1-1/3 litres prune juice*
- 720gm pureed apple
- 525gm All-Bran

Method

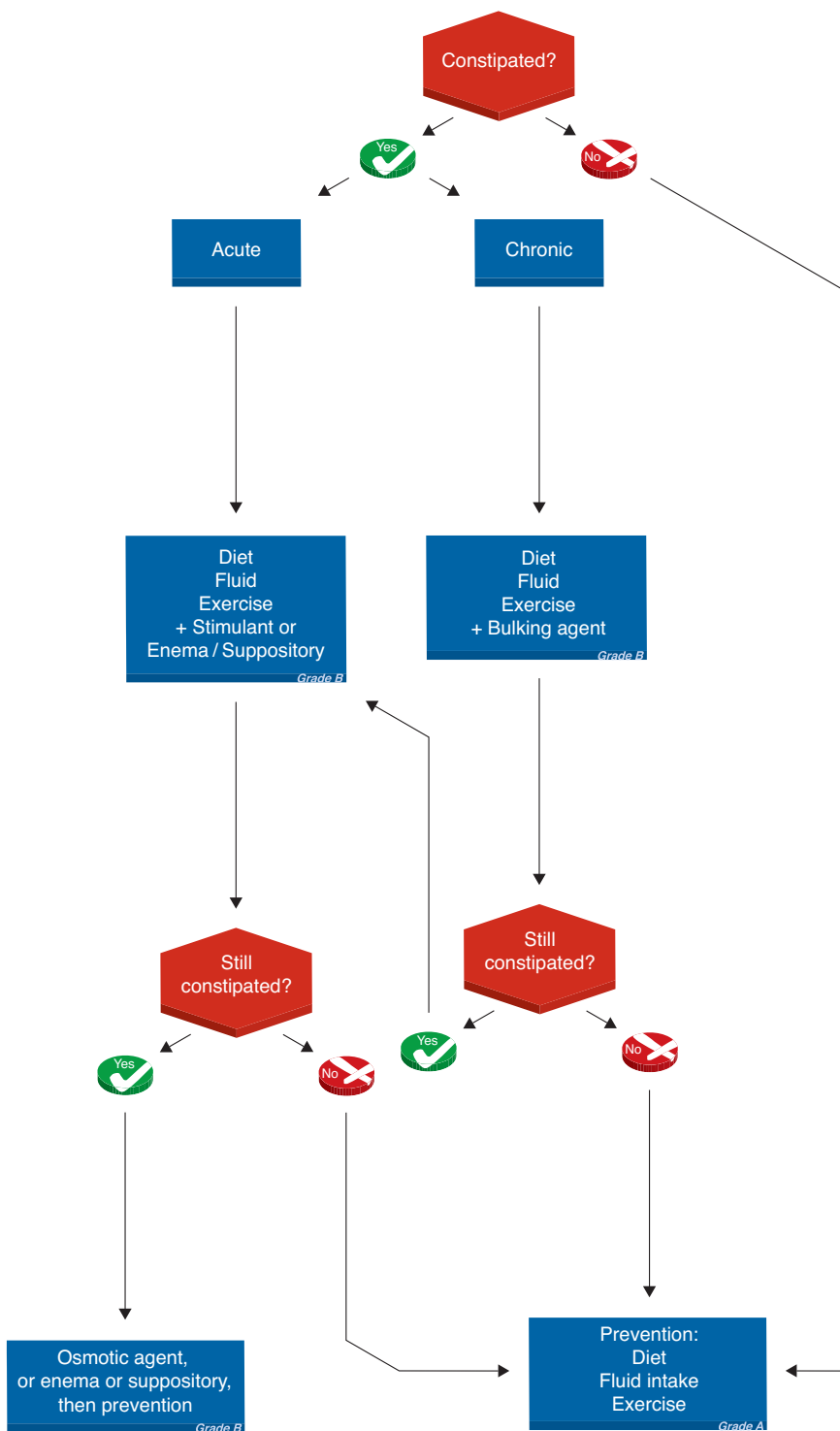
Add hot prune juice to ingredients and mix well.
Give 1 to 2 tablespoons twice per day.

*Commercially available prune juice may be used, or prune juice can be made as follows:

• 1kg Prunes (pitted) • 1.25 litres water

Cook pitted prunes in water until soft. Puree prunes. Sift through strainer to make prune juice.

Management of constipation in older adults



This *Best Practice* information sheet presents the best available evidence on this topic. Implications for practice are made with an expectation that health professionals will utilise this evidence with consideration of their context, their client's preference and their clinical judgement.⁵

Acknowledgments

This *Best Practice* information sheet was developed by the Joanna Briggs Institute with the review and guideline authors.

In addition this *Best Practice* information sheet has been reviewed by nominees of International Joanna Briggs Collaborating Centres:

- Dr Suzy Robertson-Malt, National & Gulf Centre for Evidence Based Medicine, Riyadh, Kingdom of Saudi Arabia.
- Brent Hodgkinson, Research Fellow, Research and Practice Development Centre, University of Queensland and Blue Care, Milton, Queensland, Australia.

References

1. Joanna Briggs Institute. Management of Constipation in Older Adults. *Best Practice: evidence-based practice information sheets for health professionals* 1999;3(1).
2. Ramkumar D and Rao SSCR. Efficacy and Safety of Traditional Medical Therapies for Chronic Constipation: Systematic Review. *American Journal of Gastroenterology*; 2005; 100(4): 936-971.
3. RNAO. *Prevention of Constipation in the Older Adult Population*. Nursing Best Practice Guideline: Shaping the future of Nursing, revised March 2005.
4. The Joanna Briggs Institute. Systematic reviews - the review process, Levels of evidence. Accessed on-line 2006 <http://www.joannabriggs.edu.au/pubs/approach.php>
5. Pearson A, Wiechula R, Court A, Lockwood C. The JBI Model of Evidence-Based Healthcare. *Int J of Evidence-Based Healthcare* 2005; 3(8):207-215.



• The Joanna Briggs Institute
 Royal Adelaide Hospital
 North Terrace, South Australia, 5000
www.joannabriggs.edu.au
 ph: +61 8 8303 4880
 fax: +61 8 8303 4881
 email: jbi@adelaide.edu.au



• Published by Wiley-Blackwell

"The procedures described in *Best Practice* must only be used by people who have appropriate expertise in the field to which the procedure relates. The applicability of any information must be established before relying on it. While care has been taken to ensure that this edition of *Best Practice* summarises available research and expert consensus, any loss, damage, cost, expense or liability suffered or incurred as a result of reliance on these procedures (whether arising in contract, negligence or otherwise) is, to the extent permitted by law, excluded".