



Best Practice

Evidence Based Practice Information Sheets for Health Professionals

Management of Constipation in Older Adults

Acknowledgment

This Best Practice Information Sheet has been based, with permission, on a systematic review undertaken as part of the Health Technology Assessment Program of the National Health Service, UK (1). This information has been supplemented by other references as cited in the text and with the expert opinion of the review panel who guided the development of this practice information sheet.

Purpose

The purpose of this information sheet is to summarise previous research then present the best available evidence on the prevention and management of constipation in the older adult.

Constipation

The term constipation refers to difficulty, or straining, in defecation and infrequent bowel movements over an extended period of time. Symptoms associated with constipation include hard/dry stool, bloating and abdominal pain. Definitions of normal bowel function vary, but a frequency of between three times per day to three times per week has been suggested as the normal range. However, it has been noted that patients' definitions of constipation emphasise symptoms such as pain and straining rather than frequency.

Studies conducted in Britain and the USA suggest that between 10% and 18% of otherwise healthy adults report frequent straining on defecation, and less than 4% of the population report fewer than three bowel movements per week. Constipation appears to be more

This Practice Information Sheet Covers The Following Concepts

1. Pathophysiology of Constipation
2. Risk Factors
3. Current Management
4. Patient Assessment
5. Prevention of Constipation
6. Management of Constipation

common in women than men. In elderly people living in the community, approximately 20% have symptoms of constipation.

Pathophysiology of Constipation

Constipation has been classified as primary and secondary. Primary, or simple constipation may be associated with inadequate dietary fibre intake, dehydration, reduced mobility, withholding faecal evacuation and reduced muscle tone (2). Secondary constipation may occur as a result of

Levels of Evidence

All studies were categorised according to the strength of the evidence based on the following classification system.

- **Level I** Evidence obtained from a systematic review of all relevant randomised controlled trials.
- **Level II** Evidence obtained from at least one properly designed randomised controlled trial.
- **Level III.1** Evidence obtained from well designed controlled trials without randomisation.
- **Level III.2** Evidence obtained from well designed cohort or case control analytic studies preferably from more than one centre or research group.
- **Level III.3** Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments.
- **Level IV** Opinion of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

disease or drug therapy (2). The following factors have been associated with constipation (3, 4):

- Opioid induced constipation - by influencing intestinal smooth muscle tone, suppressing forward peristalsis, raising sphincter tone and reducing sensitivity to rectal distension.
- Gastrointestinal obstruction - due to a combination of delayed emptying leading to hard stool and bowel tumour or pelvic tumour resulting in obstruction.
- Spinal cord dysfunction - due to a combination of immobility, loss of rectal sensation, poor anal and colonic tone.

- **Slow-transit constipation** - due to a reduction in the motility of the bowel and is associated with abnormalities of the myenteric plexus neurons, and with laxative abuse.
- **Pelvic floor dysfunction** - due to inappropriate contraction of muscles and sphincters during defecation, and is thought to cause straining and outlet obstruction constipation.
- **Irritable bowel syndrome** - this has been associated with constipation, possibly due to visceral hypersensitivity and altered gastrointestinal motility.

It is important to highlight the fact that constipation may occur secondary to conditions such as strictures or colorectal cancer. It has also been suggested that constipation may be the result of a cascade of events, for example; following an illness, fluid intake, diet and mobility are reduced, and there may be an increased dependence on others to meet toileting needs. During hospitalisation, factors such as lack of privacy, inconvenience or lack of toilet facilities may exacerbate constipation.

Risk Factors

While constipation is commonly viewed as one of the problems of aging, healthy active old people often have normal bowel function. The link between age and constipation is more likely to be a result of other contributing factors such as fluid intake, diet, mobility and the environment.

- **Fluid Intake:** This has been cited as a risk factor for constipation, with low fluid intake linked to slow colonic transit and low stool output. However, there have been few studies that have examined the effects of fluid intake on constipation.
- **Diet:** It has been suggested that the prevalence of digestive disease is increasing because of the roughage free modern diet. Studies have shown that dietary fibre influences bowel transit time, faecal weight and bowel movement frequency. This is supported by the fact that vegetarians have a lower incidence of constipation. However, it appears that other factors, such as caloric intake, may also influence the development of constipation.
- **Mobility:** Constipation has been found to be more prevalent in people who take little exercise, with the highest risk being associated with chairbound or bedbound people.
- **Environment:** Environmental factors such as reduced privacy, inaccessible toileting facilities, inappropriate facilities and reliance on other people for assistance, may also contribute towards the development of constipation.

- **Other Factors:** The development of constipation may be influenced by many other factors such as, anxiety, depression and impaired cognitive function. Some medications, such as opioid analgesics, anticholinergics and anti-depressants, may also increase the risk of constipation.

One possible consequence of constipation is faecal impaction, particularly in the elderly and confused. Faecal impaction results from prolonged exposure of stool to the absorptive processes of the colon and rectum (5). As a result of this, the stool can become extremely hard. While it has been found to be present in a high proportion of patients admitted to hospital, its prevalence in the community is unknown. It is important to note that faecal impaction may present as diarrhoea, and that impaction may not be detected during digital examination.

Current Management

There are a variety of approaches to the management of constipation which include non-pharmacological therapies, non-laxative agents, laxatives, enemas and suppositories

Non-Pharmacological Interventions

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

Non-Laxative Interventions

A variety of products have been recommended or included in bowel management programs for the prevention of constipation including bread, bran, lentils, aloe vera, mineral water and fruit such as prunes or rhubarb. While some studies have supported the effectiveness of dietary supplements of bran in preventing constipation, the effectiveness of bran has not been supported by randomised controlled trials (RCT). 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 of these mixtures, Prune Supplement, is included in this Practice Information Sheet, and while its effectiveness has not been validated by research, it is currently used in clinical practice based on expert opinion (Table 3). Increased fluid intake has been commonly recommended as a method of preventing constipation, and an increased fluid intake has been evaluated in conjunction with other products, but it has not been evaluated individually and so its effectiveness remains unclear. Increasing dietary fibre intake is also a commonly recommended prevention strategy, but without adequate fluid intake it may increase the likelihood of faecal impaction in the immobile elderly.

Laxatives

Laxatives are commonly used to treat constipation and are generally classified by the mode of action into the categories of bulking agents, stimulant laxatives, faecal softeners and osmotic laxatives. Table 1 lists the classes of laxatives (7) and examples of each. In addition to these, there are laxatives available that combine different agents such as a bulking agent and stimulant laxative (Agiolax, Granacol, Normacol) or a stool softener with a stimulant laxative (Agarol, Coloxyl with senna).

Like constipation, the use of laxatives increases with age. Studies have shown that 3% of men and 5% of women use laxatives at least once per week, and that for the elderly this can increase to 39% and 50% respectively. It appears that some adults use laxatives even in the absence of constipation, indicating that they are also used to prevent constipation. It has been suggested that the regular use of laxatives stems not only from the increased incidence of constipation, but also from the view held by some elderly that bowel regularity and regular purging are necessary for good health. It should be noted that long term use of stimulant laxatives may lead to intractable constipation due to loss of colonic motility.

Many of the studies evaluating the effectiveness of laxatives were small and therefore lacked the power to detect any effects of treatment. There have been few comparative studies of the different classes of laxatives, and of the different types of laxatives within classes. Finally, most studies have focused on hospital or nursing home patients, with little attention given to the elderly living in the community. These factors limit the

Table 1

Class	Example	Onset of 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, Durolox) -frangula bark (one of the agents in Granacol and Normacol) -phenolphthalein (Iaxettes) -senna (Senokot)	6 - 12 hours

strength of any recommendations that can be made regarding the effective management of constipation by the administration of laxatives.

There is some evidence that laxatives can improve bowel movement frequency, consistency and symptoms of constipation. The results of studies can be summarised separately for the ambulant elderly and for elderly people in hospitals and nursing homes. These results suggest that fibre may be effective in improving bowel movement frequency in the ambulant elderly, while stimulant and osmotic laxatives may be more effective than bulking agents for the immobile elderly.

Enemas and Suppositories

Enemas and suppositories are used for the treatment of constipation, for example to clear the rectum and restore normal function prior to the commencement of a bowel management program. 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.

Patient Assessment

There is only limited guidance in the research literature on the assessment of people with constipation, with much of the information relating more to procedures and investigations. The following discussion is therefore largely based on expert opinion.

The assessment of people with regard to constipation, should encompass not only whether they are currently constipated, but also attempt to identify factors that may be contributing to the

problem. The assessment of people with an existing problem, or at risk of developing constipation, should include a history and a physical examination.

History

The history should aim to identify lifestyle factors that may impact on the person's bowel function, such as:

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

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

- any recent changes in their bowel habits;
- frequency of bowel movements;
- the consistency of stool;
- their normal activities to maintain bowel function (eg what works for them);
- the presence of faecal incontinence;
- the need for frequent straining during toileting;
- if recent illness (eg stroke), what was their normal bowel pattern prior to the illness;
- what, if any, laxatives are being taken, the type, frequency and length of time of use; and
- the person's preferences and special toileting needs, for example privacy, raised toilet seat, foot stool, etc.

Any symptoms of constipation should be identified, and this may include:

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

Physical Examination

A physical assessment of the person should be undertaken to identify any conditions that may influence their bowel function and to help determine their current status. This may include:

- assess the mouth; condition of teeth and swallowing with regard to their tolerance of different types of food products such as fruit or increased dietary fibre;
- auscultate abdomen to determine presence or absence of bowel sounds;
- visually check for any abdominal distension;
- palpate abdomen for presence of hard faecal masses in the colon;
- visually check for any other conditions that may contribute to constipation such as haemorrhoids or anal fissures; and
- perform a digital rectal examination if appropriate, to determine the content of the rectum, and whether faeces is hard or soft.

The assessment may be aided by monitoring the person for several days with the aid of a food and fluid chart and a bowel chart. An abdominal X-ray may be performed to aid diagnosis of constipation; other tests and procedures such as sigmoidoscopy, colonoscopy, barium enema or collection of faecal or blood specimens may be needed to investigate other possible causes of constipation.

Prevention of Constipation

Constipation is the result of many factors and therefore a multidisciplinary team approach to its prevention and management is recommended. It should be noted that the interventions listed below are employed in both the prevention and management of constipation. Assessment of the person will be necessary to determine individual requirements. There is only limited research evidence available relating to the prevention of constipation and therefore this discussion represents expert opinion (level IV).

Patient Education

An important aspect of the prevention and management of constipation is ensuring the person has a good understanding of what factors increase their risk, and what can be done to minimise these risks. The information provided should cover:

- *the impact of diet and fluid intake on constipation;*
- *the role of exercise in the development of constipation;*
- *effective toilet habits; and*
- *side effect of medications in relation to constipation.*

Diet and Fluid Intake

Diet plays an important role in the development of constipation. Interventions related to diet that may influence its development include:

- *encouraging person to have a high fibre diet, see Recommended Fibre Sources (table 2);*
- *ensuring adequate fluid intake each day, for example 6 - 8 drinks of fluid each day, and expert opinion suggests clear fluids are better than tea or coffee;*
- *if dietary fibre is increased, it may be necessary to also increase fluid intake to prevent faecal impaction; and*
- *if high fibre food choices are unsuitable the Prune Supplement may be beneficial (see table 3).*

Exercise

Lack of regular exercise is commonly cited as a risk factor for the development of constipation, therefore exercise should form part of any lifestyle change aimed at preventing its development by:

- *encouraging regular activity within the person's abilities.*

Effective Bowel Habits

Some toilet habits may contribute to the development of constipation, and so some form of bowel training may be indicated. This may include:

- *taking advantage of the gastro-colic reflex (going to toilet after meals);*
- *going to toilet at a regular time each day (for example in the mornings);*
- *ensuring the toilet is of the correct height, and use seat raisers or foot stool as needed; and*
- *if appropriate, encouraging person to sit with both feet supported on floor or foot stool, leaning forward slightly so abdomen falls away from body, and relaxing pelvic floor muscles, as this will help minimise the need for straining.*

Toileting Facilities

Many environmental factors may, in part, contribute to the development of constipation, and modifications may assist in its prevention. This may include:

- *privacy during toileting;*
- *toilet at correct height;*
- *assistance with mobility as needed;*
- *facilities to call for assistance to access toilet; and*
- *comfort measures as required by individual.*

Management of Constipation

Many factors influence the development of constipation, and so its management must be individualised according to the needs of each person. The interventions used to prevent constipation are also important components of its management. It should be noted that patients with spinal injuries, or on long term opioid analgesics, may require specialised bowel management programs. The following is a summary of the different treatment options, and represents expert opinion (level IV).

Acute Constipation

The initial management of moderate to severe acute constipation may include suppositories, enemas or osmotic laxatives to clear the rectum, followed by implementation of a bowel management program utilising preventative interventions such as modification of 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 should be sought .

Chronic Constipation

Bulking agents should be tried for people who have a low dietary fibre, and have no specific underlying cause of the constipation.

Osmotic agents may be effective in the treatment of chronic constipation. The aim of the management program 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

The systematic review on laxatives (1) suggests bulking agents are effective for the ambulant elderly, and that osmotic and stimulant laxatives may be more effective for bed-bound people (level I evidence).

Opioid Induced Constipation

As constipation associated with opioid analgesia can be anticipated, the management should primarily be preventative. People on opioids for longer periods of time, such as in the palliative care setting or during the management of chronic pain, should have a bowel management program commenced with the opioid analgesia. Stimulant laxatives or osmotic agents may be indicated to manage constipation caused by opioid analgesia.

Use of Enemas and Suppositories

Enemas and suppositories may be required to clear the rectum prior to commencement of 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 be commenced to prevent its recurrence.

Cost of Treatments

It should be noted that considerable cost variations in laxative agents exist, and that 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.

Table 2
Recommended Fibre Sources

- | | |
|---|---|
| <p>Cereals</p> <ul style="list-style-type: none"> • Porridge • Unprocessed Bran <ul style="list-style-type: none"> • All Bran • Weetbix | <p>Breads</p> <ul style="list-style-type: none"> • Wholemeal <ul style="list-style-type: none"> • Rye • Hi-Fibre |
| <p>Fruits</p> <ul style="list-style-type: none"> • Apples (unpeeled) <ul style="list-style-type: none"> • Oranges • Bannans • Dried Fruits such as prunes or apricots | |
| <p>Vegetables</p> <ul style="list-style-type: none"> • Beans <ul style="list-style-type: none"> • Peas • Raw vegetables (such as carrots) | <p>Nuts and Seeds</p> <ul style="list-style-type: none"> • Almonds • Dried Seeds and kernels (such as pumpkin or sunflower) |

Table 3

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)
- 11/4 litres water

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

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