

Roughage to regulate

Constipation can negatively impact on quality of life and cause many to silently suffer, writes **Jacqueline Boyle**



CONSTIPATION is widely prevalent in the western world and its incidence varies from 2-30%.¹ Worldwide figures indicate that approximately 12% of the population experience constipation.² It affects people of all ages, but is more common in children, the elderly and pregnant women.³

Constipation is a condition in which bowel evacuations occur infrequently or in which the stools are hard, small and where its passage causes difficulty or pain.⁴ The Bristol stool chart is often used in residential care settings to help diagnose constipation, with type 1 or type 2 stool formations indicating constipation.

The frequency of bowel evacuation varies greatly from person to person, so defining what is 'normal' is difficult. A reduction in the frequency and/or a harder consistency of bowel movements developing in a person of previous regular bowel habit is likely to indicate constipation.

Causes

The causes of constipation can be categorised into either primary or secondary constipation. The most common cause is primary and relates to inadequate dietary fibre intake, poor hydration, reduced mobility or conscious retention of faeces.

Secondary constipation can originate from many different disease states or as a side-effect of medications.⁵ Common conditions contributing to the development of constipation include: intestinal obstruction from tumours or hernias; metabolic alterations such as hypokalaemia; endocrine disorders such as hypothyroidism; or neuropathic disorders such as Parkinson's disease or multiple sclerosis.³

A plethora of medications can result in constipation, including antacids, antihistamines, antipsychotics, some antidepressants, calcium and iron sup-

plements, diuretics and opioids. Although constipation is rarely serious, it can lead to bowel obstruction, chronic constipation, haemorrhoids, hernia, irritable bowel syndrome and laxative dependency.⁶

Constipation in children

Constipation in children is common, affecting up to 30% of the child population. It ranks second in terms of most referrals received from paediatric gastroenterologists.⁷ It can be a distressing problem for the child and their family, however, parents should realise that every child is different and what is 'normal' can vary greatly. A change from what is normal for a particular child may suggest a problem.

Constipation can occur at any age in children but occurs more often when weaning and potty training, at four months and two years respectively.³

It can sometimes occur due to an underlying disease or condition such as hypothyroidism, cystic fibrosis, and some neurological conditions. Meanwhile, idiopathic constipation occurs when no particular disease or illness is the cause. This type of constipation is most common.

The discomfort and distress of a child during a bout of constipation can increase their likelihood of refusing to defecate in the future and lead to the intentional withholding a stool, resulting in a greater risk of impaction (ie. overflow diarrhoea).

Regular soiling may indicate that a child has constipation with impaction. In addition to deliberately holding a stool, other causes include: poor intake of dietary fibre and fluid; emotional disturbances; and changes in routine.⁸ Early identification and effective treatment can greatly improve outcomes for children.

Evidence-based guidelines were developed by the National Institute for Health

and Clinical Excellence (NICE) in 2010 giving key recommendations in the treatment and management of idiopathic constipation in children:⁷

- The first-line treatment crucial for disimpaction is prescribing the correct dosage of laxatives, which should be reviewed a week after commencement
- Once faecal impaction has been cleared, laxatives should be prescribed as maintenance therapy to help the child establish a regular bowel habit. This may take some months to ensure that impaction does not build up again and become a chronic problem
- Dietary intervention alone is not recommended as a first-line treatment of impaction in children, but advice should be given on eating the right food and drinking enough fluids (six to eight cups a day)
- Children should be encouraged to take time to go to the toilet, and to develop a good daily pattern of toilet habits. It can also help if parents keep a bowel diary, recording their child's bowel movements and rewarding them with a positive attitude when they use the toilet.

Constipation in the older person

Older people can be more prone to constipation than the general population due to several factors. A large proportion of the elderly population, in particular those in long-term care, tend to have reduced mobility levels which can contribute to reduced gut motility. They are also known to have a lower intake of dietary fibre and fluids in comparison to younger adults.

Many are on numerous medications, some of which will have the side-effect of constipation, and many have developed disease states which can result in secondary constipation.

Table 1

Constipation during pregnancy

Most women will experience constipation during pregnancy. This can be due to a potential decrease in physical activity, dietary changes, iron supplementation, and the physiological effects of pregnancy on gastrointestinal function.³

Pregnant women may also intentionally restrict their fluid intake to reduce their urge to urinate frequently. Measures that may alleviate constipation in this group include increasing fibre and fluid intake, changes in the type of iron supplement, and if necessary, using faecal bulking agents (see Table 4).

How can fibre benefit health?

Fibre, also known as 'roughage', is the part of the food that is not digested by the body. It is only available from foods of plant origin such as unrefined cereals, wholemeal flour, fruit, vegetables, nuts, seeds and pulses such as peas, beans and lentils. As fibre passes through the bowel it absorbs and retains water, which creates bulk and leads to regular bowel habits.⁹

Studies show that including fibre in the diet holds additional benefits to boosting digestive health. A diet rich in wholegrain and high-fibre cereals may prevent or control diseases such as heart disease, diverticulitis, type 2 diabetes, and bowel cancer. It combats fatigue, enhances mood, and can help manage weight by adding bulk to the diet, containing few calories and helping us to feel fuller for longer.^{10,11,12}

There are two main types of fibre: soluble and insoluble. Soluble fibre dissolves in water and is digested by the bacteria in the colon, releasing gas. It is a viscous, gel-like fibre, which helps lower cholesterol levels in the blood. It slows the absorption of glucose, which is important for those at risk of or with diabetes.

Insoluble fibre does not dissolve in water, but absorbs up to 15 times its weight in water, swelling like a sponge.¹² It is not digested by colonic bacteria and is excreted in the stools (see Table 1).

How much fibre do we need?

The Food Safety Authority of Ireland (FSAI) recommend children from five to 18 years should take five grams of fibre plus an extra gram of fibre for each year of life per day (eg. an 11-year-old requires 16g of daily fibre).¹³ Adults aged 19 and over are recommended to have at least 25g of fibre per day.¹³ See Table 3 for practical tips to include fibre-rich foods in the diet.

Sources of soluble and insoluble fibre in the diet

Foods rich in soluble fibre	Foods rich in insoluble fibre
<ul style="list-style-type: none"> • Oats • Beans • Peas • Lentils • Fruit without peel • Brassica vegetables (broccoli, spinach, cabbage, cauliflower etc) 	<ul style="list-style-type: none"> • Grains (wholegrain bread, cereals, pasta) • Bran • Brown rice • Nuts, seeds and pips • Skin on fruit and stringy vegetables (eg. celery) • Pulses (peas, beans, lentils) • Citrus fruit pith

Table 2

Fibre contents of common carbohydrate rich foods

Foods rich in soluble fibre		Foods rich in insoluble fibre	
All Bran	27g	Cornflakes	3g
Bran Flakes	15g	Special K	3g
Weetabix	10g	Rice Krispies	1g
Wholemeal bread	7g	White bread	3g
Wholemeal pasta	4g	White pasta	1g
Ryvita crispbread	17g	Cream cracker	4g
Hobnob	6g	Rich Tea	3g

Table 3

Practical tips to increase fibre intake

Breakfast	<ul style="list-style-type: none"> • Choose a high fibre cereal for breakfast (eg. porridge, muesli, Weetabix etc) • Replace white bread, bap, rolls with wholegrain alternatives • Include a small glass of fruit juice/homemade smoothie with breakfast • Add whole / ground linseed to breakfast cereal or yogurt • Add chopped fruit, dried fruit or berries to cereal or yogurt
Lunch	<ul style="list-style-type: none"> • Choose wheat crispbreads or Ryvita in place of crackers • Adding salad to a plain cheese or ham sandwich • Adding sweet corn to a tuna sandwich or through a salad • Throw some seeds or nuts into your salad eg. sunflower, pumpkin, walnuts • Have soup with added lentils or beans
Dinner	<ul style="list-style-type: none"> • Choose brown rice and whole-wheat pasta in place of the white versions • Have a jacket potato with dinner in place of mashed/boiled potatoes • Add extra vegetables into your stir fries/curries/stews/casseroles • Add some nuts to your stir fries/curries, eg. cashews/peanuts • Mix some beans or peas into your meals, eg. kidney beans to chilli con carne, butter beans to casserole, chickpeas to curries, peas into casseroles etc.
Snacks	<ul style="list-style-type: none"> • Avoid if trying to lose weight • In baking, use wholemeal flour and add extra seeds and dried fruit to bread and scones

Those who do not usually have a good fibre intake from their diet should introduce fibre slowly and gradually increase the amounts daily, as a sudden increase could lead to bloating, abdominal cramps and flatulence. Any increase in dietary fibre should be accompanied by an

increase in fluid, as fibre needs fluid in order to work efficiently.¹⁴

Some fibres, in particular phytates, can bind with minerals such as magnesium, calcium, zinc and iron in the gut and reduce their absorption. Therefore, it is important to avoid eating large quantities

Table 4

Types, mode of action and precautions of laxatives

Laxative type	Mode of action	Precautions
Stimulants (eg. Dulcolax, senna)	Increases action of intestinal muscles and induces bowel movements. Effective when used on short-term basis	Should not be taken for more than a week. Chronic long-term use can lead to loss of colon function
Bulk forming (eg. Fybogel, Regulan)	Lubricates and softens the stool. Can take 12 hours to three days to take effect. Safe for long-term use	Each dose should be taken with at least a full glass of water so may not be suitable if on fluid restriction
Stool softeners (eg. Microlax)	Prevents hard stools by adding moisture to stools, used for prevention rather than treatment. Takes 24-48 hours to work	Safe and well tolerated however decreases absorption of vitamin K so should be avoided in patients on blood thinners
Osmotic laxatives (eg. Movicol, lactulose)	Draws water into the intestines, which helps soften stool, increases intestinal pressure and contractions	Not suitable for those with kidney disease, congestive heart failure or hypertension
Enemas and suppositories (eg. Dulcolax suppository, fleet enema)	Rectal administration used to cleanse the rectum and sigmoid colon to relieve constipation and rectal faecal impaction. Evacuation occurs within minutes to an hour	Can cause rectal irritation and rectal gangrene and fluid and electrolyte disturbances if used on a chronic basis. Only for occasional use

Table 5

Tips to combat constipation in adults^{14,21}

Diet	Gradually introduce more foods rich in both soluble and insoluble fibre into your diet. Aim for five fruit and vegetables per day. Include pulses three to four times per week. Eat small, frequent meals and never skip meals
Probiotics	Trial for a month, if one brand does not have an effect after one month, try an alternative, as each brand contains a different strain of bacteria
Fluid	Ensure a good fluid intake; approximately eight to 10 glasses per day are recommended with a maximum of three caffeinated beverages per day (avoid caffeine when pregnant)
Exercise/lifestyle	Take regular exercise most days of week (ie. 30 minutes, four to five days a week). Find time to relax. Develop good toilet routine
Laxatives	If all else fails, consider introducing a laxative as advised by a medical professional

of this type of fibre, in particular for those with pre-existing mineral deficiencies.³ The highest concentration of phytate is found bran and bran-based products.

Other dietary recommendations

Other dietary considerations to help keep our bowels moving regularly include maintaining a regular pattern of meals. Skipping meals or long gaps between meals should be avoided to prevent sluggish bowel. Aim for five portions of fruit and vegetables a day: fresh, frozen, juiced, soup or smoothies.

Aim for six portions of fibre-rich, carbohydrate-rich foods per day (eg. breads, cereals, potatoes, pasta and rice). Include beans, peas or lentils approximately three to four times a week. For further guidance on portions, see the health promotion section of the HSE website.¹⁵

A role for probiotics?

According to the World Health Organization, probiotics are live microorganisms (mostly bacteria) that provide health benefits to people when eaten in sufficient amounts.¹⁶ There are many different strains of probiotics that are associated with health benefits, including an improvement in constipation predominant Irritable Bowel Syndrome (IBS-C) where there is suboptimal bowel habits.^{17,18,19}

There is a growing body of evidence that probiotics may help relieve symptoms and improve the wellbeing of IBS sufferers.²⁰ NICE supports the use of probiotics for individuals with IBS who choose to try them.²¹ A range of commercial probiotics are widely available, so it is advisable to choose a good quality product supported by scientific evidence.²² If alleviation of IBS symptoms is not evident after four weeks, it is advisable to try another probiotic made with a different strain.

Importance of fluid

An increase in dietary fibre should be accompanied by an increase in fluid intake – at least six to eight cups a day for older adults. Water is necessary for life: we need it to get rid of waste products from the body and to replace fluid we lose from breathing and sweating. If we don't replace this fluid we may become dehydrated which can result in drowsiness, nausea, constipation, confusion and headaches. Adults with primary constipation should increase their usual fluid intake to about two litres per day and more in hot weather or if taking vigorous exercise. It

is thought that a hot or warm drink first thing in the morning may help stimulate bowel activity.³

Non-dietary advice

Those with constipation should never resist the urge to defecate, and should aim to establish regular bowel habits, ideally after meals. For more dependent patients, it is important that appropriate toilet facilities are available, providing privacy, and that assistance is provided for those with poor mobility.

Physical activity, even gentle, is known to help improve peristaltic function in the digestive tract. Some people with constipation find abdominal massage

beneficial, usually when used with other recommendations. As polypharmacy can often contribute to constipation it is also important to consider a review of all medications to see if they can be reduced or substituted for an appropriate alternative.

When all other recommendations have failed for adults and older people, laxatives may be considered. *Table 4* provides an overview of the more common laxatives used, their mode of action and precautions used with them.

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References are available on request from nursing@medmedia.ie (Quote: Boyle J. WIN 2013; 21(7): 53-55)