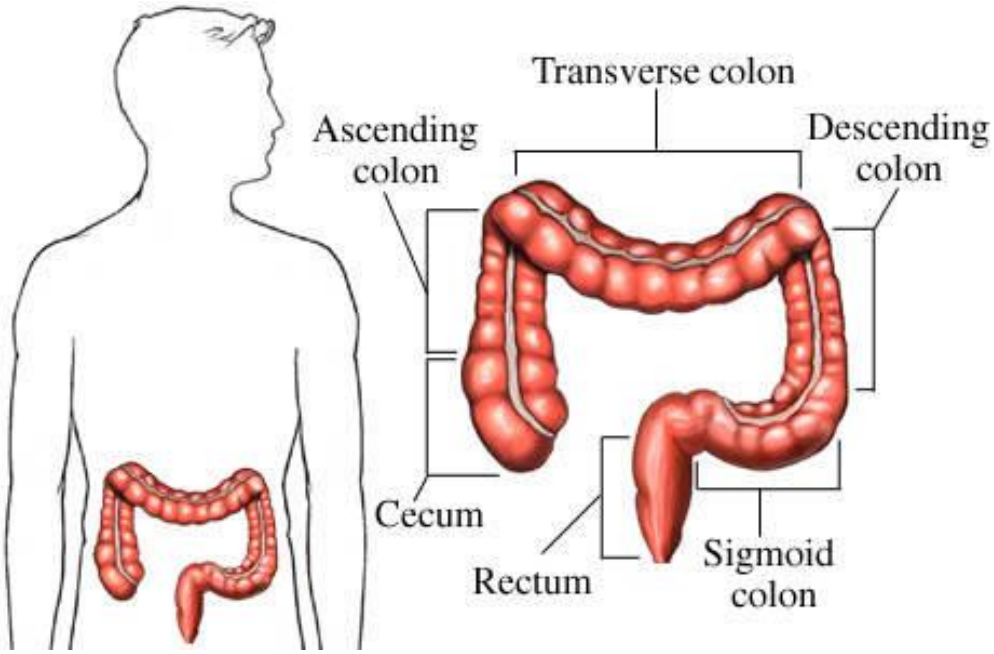
WESTERN SYDNEY UNIVERSITY

Health
South Western Sydney Local Health District
NSW GOVERNMENT

Constipation

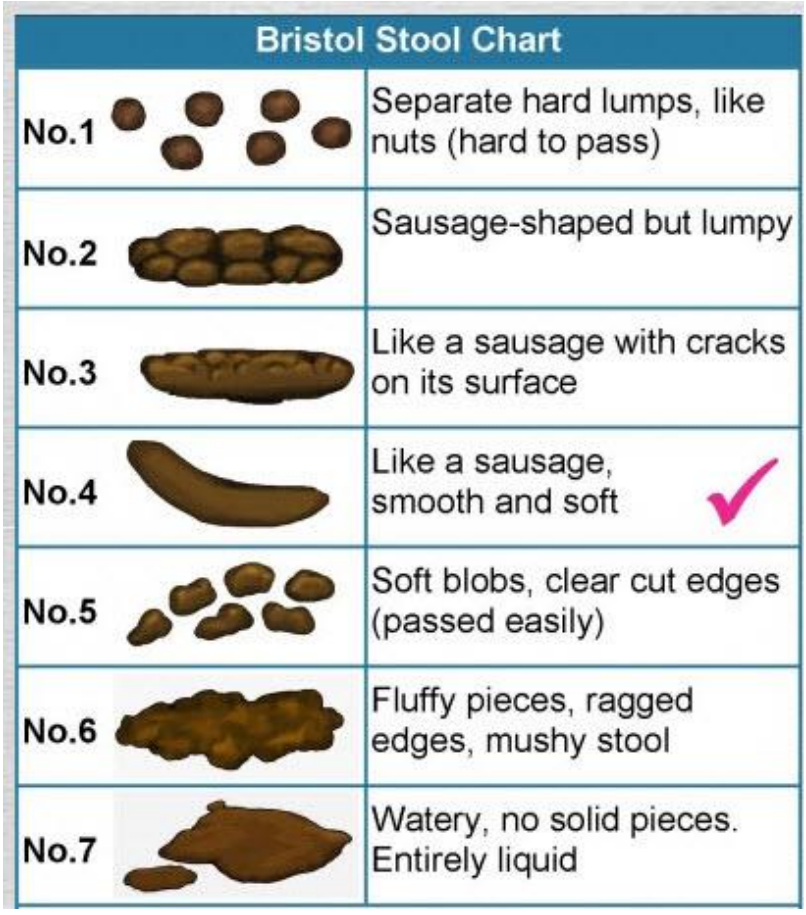
Information for adults



Contents

Role of the large intestine

- The large intestine (also known as the colon) is responsible for transforming waste into semi solid stools for excretion.
- It does this by absorbing fluid from the waste as it moves through.
- Stool consistency can vary between hard lumps to loose / mushy depending on how long the stools have been in the large intestine and how much water has been reabsorbed from them.
- Ideally, stools should be formed into soft, smooth sausage shapes which are comfortable to pass.



Mass movements in the large intestine

- The descending colon and the rectum are the storage tank at the end of the large intestine
- Normally the rectum is relatively empty, although some stool enters the rectum regularly
- However, most stool arrives all at once in the rectum as a result of mass movements, which happen from time to time, especially before the need to go to the toilet is experienced
- These mass movements are major waves of pressure which are capable of moving the stool through the whole length of the colon, like toothpaste being squeezed along a tube.

What causes these mass movements?

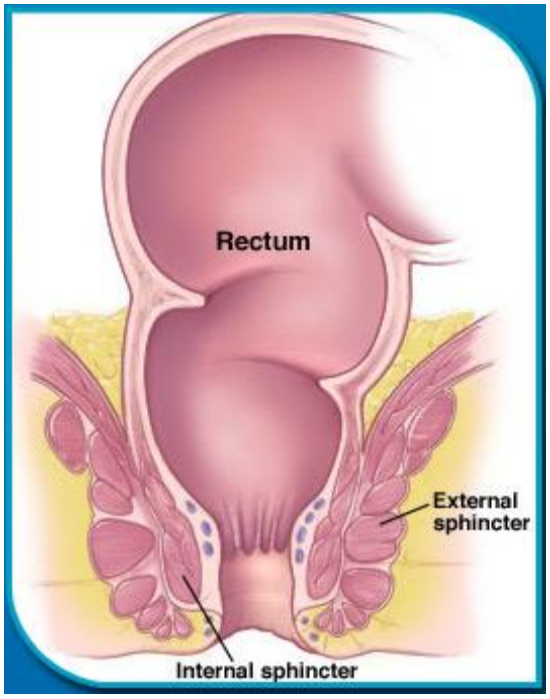
- Food arriving in the stomach when you eat a meal sets off a pressure wave in the colon a few minutes later.
- This is why people often need to empty the bowel, sometimes urgently, soon after eating.
- This is also why, for many people, the bowel is relatively quiet at night
- The first meal of the day, along with the physical activity of getting ready in the morning, stimulates contractions in the colon and mass movements. Thus many people experience the “urge” to evacuate their bowels shortly after breakfast.

- The rate of movement through the digestive system is highly variable. Depending on what you have eaten, food USUALLY takes an average of 1-3 days to be processed. 90% of this time is spent in the colon.
- “Normal” bowel function varies between different people
- Some people move their bowels 3 times a day while others move their bowels once every 3 days. Anything in between this is normal.

Normal bowel emptying

When stool enters the rectum, the **internal anal sphincter** muscle automatically relaxes to open up the **anal canal**. This allows stool to enter the upper anal canal. Here, very sensitive nerve cells figure out whether there is wind, diarrhoea or normal stool present. Most people know that stool is in the rectum without really having to think about it.

The **external anal sphincter** is a much thicker ring of muscle wrapping around the outside of the internal anal sphincter. We have "voluntary" control of this muscle – this means that you can deliberately squeeze / use this muscle, just like you could with a muscle in the arm or leg.



If a normal stool is sensed and it is NOT convenient for you to find a toilet at that time, you can DELAY bowel emptying by squeezing the external anal sphincter. Stool will be pushed back up and out of the anal canal. Most people do this without even thinking about it.

Thus the urge to empty the bowel is resisted and will wear off. The external sphincter can relax, and stool will not enter the anal canal again until the next mass movement action. When this occurs, you will feel another urge to empty your bowels. These urges will continue at intervals until the bowel is emptied.

Continually resisting the urge to empty your bowel or ignoring the urge to empty the bowel can lead to constipation. This is because the stool is forced to spend a longer amount of time in the colon, allowing more fluid to be reabsorbed. The stool will become harder and more difficult to pass.

Causes of constipation

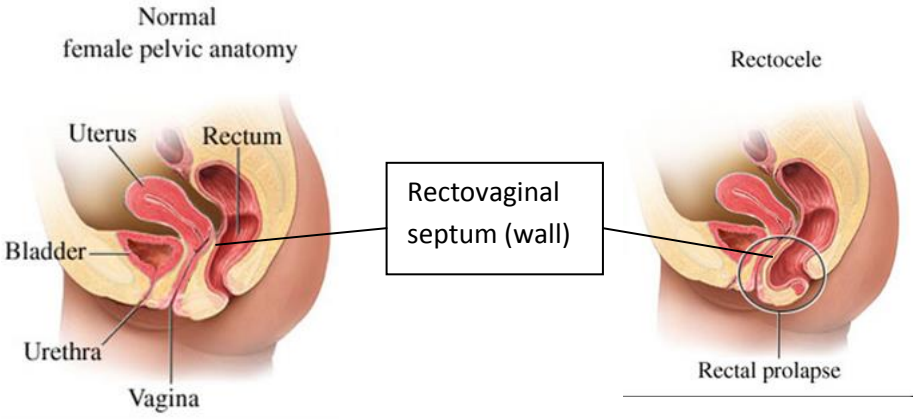
Constipation can be caused by anatomical or functional problems.

1. Anatomical problems

where the bowel muscles, surrounding structure or the nerves supplying the bowel are responsible for symptoms

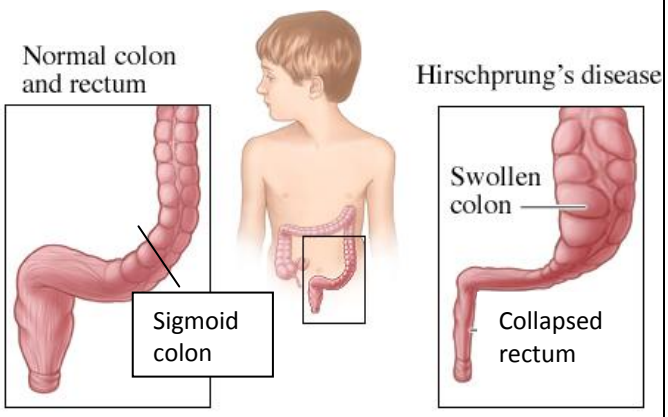
Rectocoele

- This condition is most commonly found in women who have had a baby by vaginal delivery OR women who have strained repeatedly because of heavy lifting and constipation.
- Strain causes the *rectovaginal septum* (the wall between the rectum and the vagina) to bulge forwards, down into the vagina.
- This bulge is called a *rectal prolapse.*
- Stool can get trapped in the bulge, resulting in a feeling of incomplete emptying



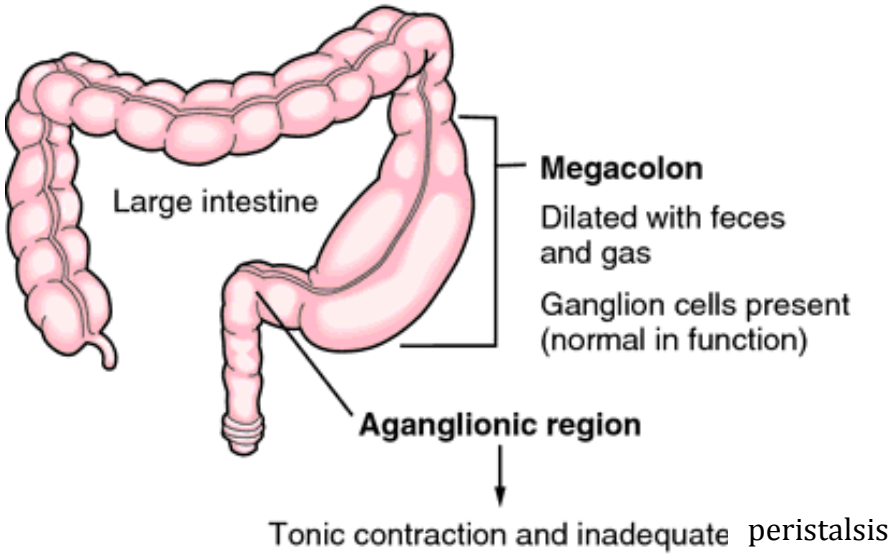
Hirschsprung's disease

- This is a very rare condition where the lower part of the bowel lacks the proper nerve supply required to propel stools along. It is usually diagnosed in babies soon after birth.
- Patients are constipated with huge distension (stretching) of the sigmoid colon.



Megacolon or megarectum

- This is a rare group of conditions where the colon is abnormally dilated
- These conditions can be inherited *(passed down through families)* or acquired *(spontaneously occurring in someone with no family history).*
- Patients will have constipation and soiling as liquid faeces leaks past the main impacted mass of faeces

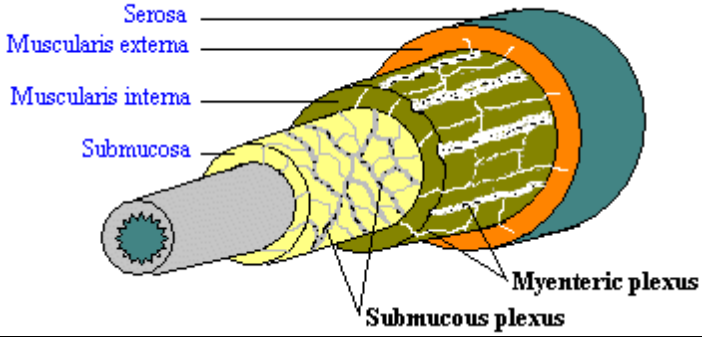


Nerve disease / injury

- Nerve problems will cause problems with defaecation, especially constipation.
- E.g. spinal cord injury, multiple sclerosis, Parkinson's disease, stroke, Chronic idiopathic intestinal pseudo obstruction

Visceral myopathy and visceral neuropathy

- These are extremely rare conditions where problems with intrinsic gut muscles and nerves cause a generalised disturbance of gut function.
- Patients may experience abdominal pain, vomiting, constipation and bladder problems



KEY
Layers of gut wall
Nerves supplying gut

2. Functional problems –

where the bowel is healthy but not working properly

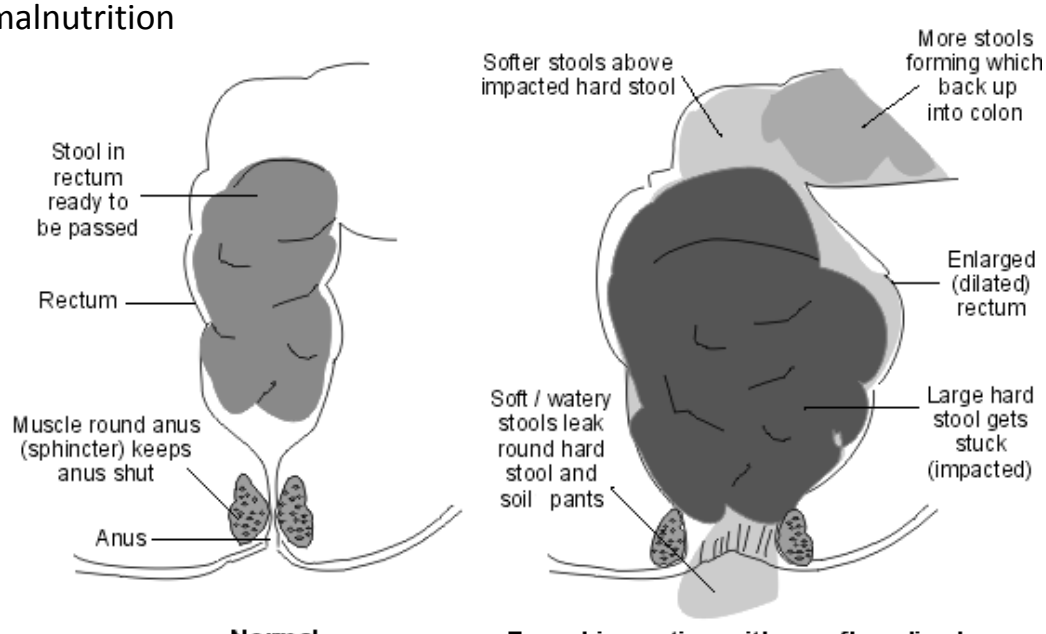
Medications Constipation is common side effects of a wide variety of prescribed and over the counter medications. These include pain killers (especially opioids, antacids containing aluminium and calcium, calcium channel blockers (for blood pressure), anti-Parkinson drugs, antispasmodics, antidepressants, iron supplements, diuretics (fluid tablet), Using laxatives regularly for a long period of time can reduce your bowel's movements
Pregnancy and after childbirth During pregnancy, changes in hormone levels cause the gut to slow down. Also, as the uterus grows, there is the additional factor of the extra volume in the pelvis. New mothers may find that they cannot respond to the urge to open their bowels.
Following an operation - Constipation after surgery is related to several factors 1. The general anaesthetic and painkillers given during / after surgery can slow down the bowel 2. manipulation of the bowel during intestinal surgery can temporarily but significantly reduce bowel movements 3. the pain after an abdominal operation may be too painful for you to try pushing 4. some major pelvic operations can damage the pelvic nerves, interrupting defaecation reflexes
Eating disorders – Failing to eat regularly causes irregular bowel actions. These patients often fail to recover gut function even after eating habits are normalised.
Lifestyle – Changes in life routine like aging or travel can affect bowel movements Lack of fibre in the diet, low fluid intake or lack of physical activity may contribute.
Ignoring the urge – People sometimes feel unable to open their bowels at school or in the workplace or feel that their lives are too busy to attempt regular bowel opening. If people constantly put off bowel motions then over the years, the gastrointestinal tract gradually slows down and they become constipated.
Psychological disturbances Having experienced major traumatic life events can place you at risk for constipation. Patients who have experienced sexual or physical abuse often have in-coordination between the rectum and the anus as well as slowing down of gut transit. As the rectum tries to contract to squeeze the stool out, the anus contracts to retain it
Fear of pain – People might experience pain during defaecation due to problems like haemorrhoids or fissures (split in the anal lining). Fear of experiencing this pain can cause patients to resist the urge to empty their bowels, and constipation can result

Complications of being constipated

Common features associated with constipation include abdominal bloating and discomfort, tired, easily fatigued, pain and vomiting.
It is uncommon for young or fit people to get serious complications from constipation. However, elderly or malnourished people may develop serious complications.

Serious complications of being constipated

1. **Faecal impaction –** when a solid ball of stool builds up in the rectum. This can present diarrhoea as liquid stool leaks out around the ball of obstructing stool. This is most commonly seen in patients with poor mobility who are taking multiple medications
2. **Stool perforation –** (exceptionally rare!) – when hard stool sits in the colon for so long that it wears through the wall and makes a perforation (hole) requiring surgical therapy
3. **Rectal prolapse –** rectum comes down and out of the back passage. This is a complication of constipation / a weak pelvic floor / advanced age or malnutrition



Normal **Faecal impaction with overflow diarrhoea**

Note – Haemorrhoids are NOT a complication of constipation. However, sitting on the toilet for long periods of time as well as straining can aggravate haemorrhoids.

Tests for investigating constipation

Which investigations you and your doctor decide on will depend on your symptoms, family history and age.

Medical history

The doctor may ask you to describe your constipation, particularly how long you have been constipated, how often your bowel movements are, consistency of stools, presence of blood and your bowel habits.

A record of eating habits, medication, and level of physical activity or exercise will also help the doctor determine the cause of constipation.

The clinical definition of constipation is any two of the following symptoms for at least 12 weeks* in the previous 12 months.

- **straining during bowel motions**
- **lumpy or hard stool**
- **sensation of incomplete evacuation**
- **sensation of anorectal blockage / obstruction**
- **fewer than three bowel movements per week**

*** The 12 weeks do not need to be consecutive.**

Physical examination

This may include a digital rectal examination, where a gloved, lubricated finger is used to evaluate the tone of the anal sphincter and also detect tenderness, obstruction and blood.

In some cases, blood and thyroid tests might be necessary to look for thyroid disease and serum calcium, OR to rule out inflammatory, endocrine, metabolic and other systemic disorders which may be causing your constipation.

Special investigations

These are usually reserved for people with severe symptoms, for those with sudden changes in number and consistency of bowel movements or blood in the stool and for older adults.

Colonic investigations These look for anatomical causes for your symptoms. They are usually safe, with an extremely small risk of damage to your bowel.

1. ***Endoscopy*** – involves using an internal telescope called an endoscope to inspect the bowel. This could be a *colonoscopy* (looking at the colon) or *flexible sigmoidoscopy* (looking at the sigmoid colon (S shaped part))
2. ***Barium enema* X ray**– since the bowelnormally does not show up well on X ray, a chalky liquid called barium sulfate is introduced into your colon through a tube in your rectum. This barium fills your colon and an X ray is taken, showing bowel shape, position and if there are blockages

Anorectal physiological testing – this test is only rarely indicated in patients with constipation. Some parts of the test are:

1. ***anorectal manometry*** – A probe with a balloon at the end is inserted into the anus to measure anal sphincter muscle tone and contractions
2. ***balloon expulsion tests*** – the balloon is now filled with 50 mL of air, and the patient is asked to expel the balloon. Inability to do so after 4 minutes may indicate a decrease in bowel function
3. ***electromyography*** – to check the pelvic nerves and their innervations of the anal sphincter muscles and the pelvic floor muscles
4. ***nerve stimulation tests –*** an electrode is used to stimulate the nerve and measure conduction to the anal muscles

Colorectal transit studies – assess speed of faecal passage through the bowel. You will be asked to swallow some capsules containing tiny markers which show up on X ray. You will then maintain a high fibre diet, and come back to the clinic to have X rays taken at 24, 48 and 72 hours. The distribution of the markers will show whether your transit is normal or slow.

Defaecating proctography – a special paste is inserted into the rectum. The patient is asked to evacuate their bowels and an X ray is taken while this is happening. The test looks at completeness of stool elimination, anorectal abnormalities and rectal muscle contraction and relaxation.

Dynamic MRI defaecography – a jelly is inserted into the rectum. MRI studies are taken of the anorectal area as you relax and as you bear down. These images show the anatomy of the rectum in relation to surrounding structures.

Treatment for constipation

1. **Medications**
2. **4 F's (fibre, fluid, fitness and feet)**
3. **Biofeedback**
4. **Surgery**

1. Medications

Prescription – If you are taking any medications, these should be reviewed by a health professional to see if they are contributing to your constipation. If possible, try to remove the constipating medication.

Do I need to take medication for my constipation? – If necessary, try using a fibre supplement such as fybogel. If really necessary, possible try suppositories or mini enemas to help regularise the bowels. Remember, it is best only to use these as an *aid* to getting into a regular routine, rather than relying on them long term.

Laxatives – It is common for patients to come to clinic and say *"I tried this laxative and it worked well at the beginning but then it stopped working."* Then they try another laxative and another and another. However, long term laxative use will make the bowel less and less responsive.

Laxatives should only be used by

1. Patients who have only very occasional episodes of constipation
2. Patients who need laxatives to counteract a short term constipating medication
3. Patients who need to avoid straining on the toilet (e.g. angina sufferers)
4. Patients who are in hospital or are severely ill
5. Patients with an anal condition which needs soft stools for the healing period (e.g. anal fissures)
6. Patients undergoing a radiological or surgical procedure

Fact or myth?

1. *Long term laxative use permanently damages the bowel*

MYTH - There is no convincing evidence that this is true. However, the more you take laxatives, the less likely it is that your bowel will work on its own.

2. *Once I start taking laxatives, I can never stop*

MYTH - Your bowel will have decreased activity while you are on laxatives. However, if you stop and give your bowel time, it will start working on its own again. This may take quite some time.

3. *Laxatives can stain the bowel*

FACT - Some laxatives like Sienna can stain the bowel, and can be seen on colonoscopy. Just because sienna is "natural" does not mean it is "good for you".

4. *Laxatives cause bowel cancer*

MYTH- There is no significant evidence which supports this idea. Nonetheless, laxatives should not be considered harmless.

5. *Laxatives cause loss of minerals*

FACT – This loss of minerals can, in the long term, cause imbalances in the body's chemistry especially in older people or people who are unwell.

Suppositories (mini enema)

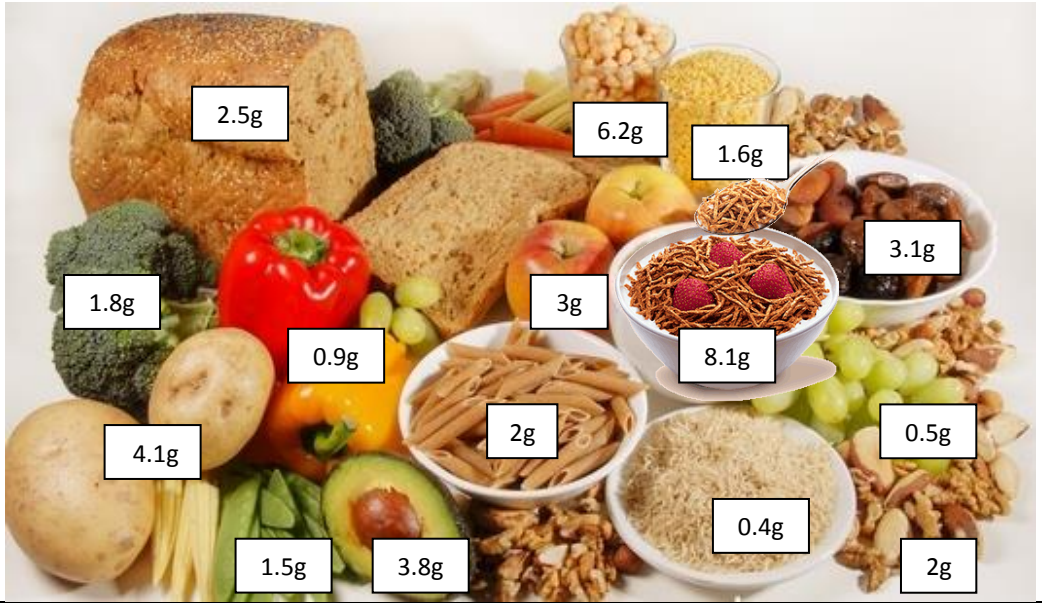
These must be inserted into the rectum for maximum effect. They act by causing contraction of the rectum, softening the stool in the rectum and by causing the bowel higher up to contract.

While the idea of inserting an enema or suppository may not appeal to all, gloves are easy to buy, and there are several important advantages

1. More predictable in timing of bowel motion than laxatives
2. Less likely to cause diarrhoea than laxatives
3. Encourage a more regular bowel action, especially if taken at the same time on regular days
4. Since they act locally, they are generally well tolerated with few side effects

5. They act more rapidly than laxatives taken by mouth

2. The 4 F's

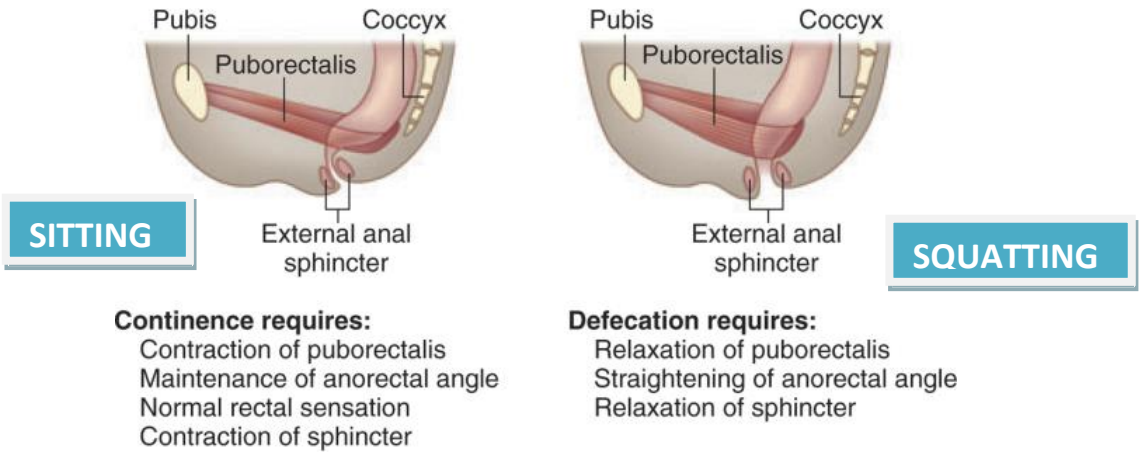
FIBRE	▪ The daily recommended intake of fibre is 30 grams ▪ Fibre is found in cereals, grains, legumes, fruit, vegetables and salad 
FLUIDS	▪ Drink at least 2L of fluid each day (8-10 cups) ▪ These include water (tap, bottled, mineral, soda and tonic) as well as milk, juice, cordial, soups,, herbal tea and <u>decaffeinated</u> tea / coffee 
FITNESS	▪ Exercise is important for maintaining good bowel function ▪ Walking is the best; try to keep your body moving 

FEET	<u>The **correct sitting position**</u> gives you the best angle to relax your muscles and do a complete motion 1. Feet on stool with knees higher than hips 2. Lean forwards, keeping your back straight 3. Elbows on knees 

3. Biofeedback

This is a bowel retraining program run by therapists who are usually specialist nurses or physiotherapists. There are usually 4 to 5 one-on-one sessions where the health professional will review things like:

1. Diet advice
2. Toileting habits and access to acceptable facilities
3. Correcting sitting position
4. Exercises to retrain muscles and nerves to coordinate and produce a satisfactory effort to empty the bowel



4. Surgery

- This is only required in a very small minority of patients, usually those with anatomical problems.
  - E.g. women who have a rectocoele may need surgery
  - Rectal prolapses sometimes require an operation.
- Removing all or part of the colon to improve bowel function often has a poor result.
- Approximately 10% of patients who have part of the colon removed will end up with a stoma (where the bowel is brought out to the skin, and

bowel contents is discharged into a regularly changed bag, rather than through the back passage.).

- This stoma is introduced because of incapacitating symptoms or as a result of the failure of previous surgery. Only a minority of patients have been found to have satisfactory health 5 years after such an operation.

Glossary

anal sphincter	A ring of muscle closing off anal canal and allowing you to control WHEN you will defaecate, once faeces arrives in the rectum
bowel habits	How often and where one has bowel motions
continence	Having voluntary control over urinary and faecal discharge
defaecation	The discharge of faeces from the rectum
incontinence	Inability to voluntarily control one's urinary and faecal discharge
faeces	Once food is digested, it is transformed into a waste product called faeces to be expelled from the body
gastrointestinal tract	The "tube" like organ connecting the mouth to the anus. Along this tract, food is broken down, digested, and converted to faeces to be expelled
peristalsis	The muscular contraction / relaxation movements of the gastrointestinal tract which propels the food along the tube