

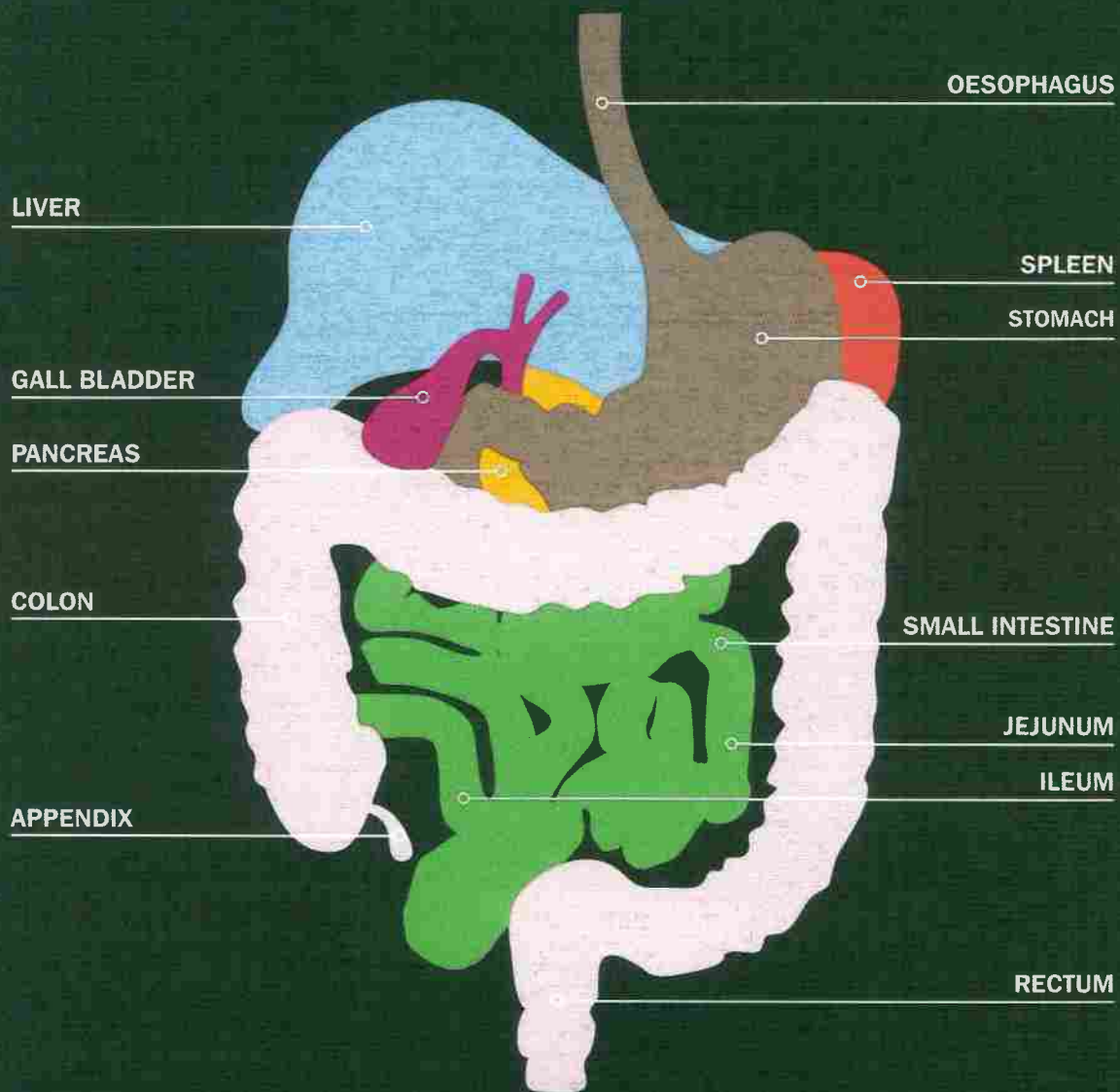


**THE GUT**  
Foundation

# Irritable Bowel Syndrome

Diagnosis & Management

# The Digestive System



# The Process of Digestion

The process of digestion mixes and softens food, breaking it down chemically so it can be absorbed by the intestine. The whole of the digestive tract moves rhythmically day and night, churning and squeezing food and mixing it with digestive juices.

- The salivary glands begin to digest starch as soon as we eat. As we swallow, muscular contraction moves food down the oesophagus to the stomach.
- The cells in the lining of the **stomach** produce hydrochloric acid and some **enzymes**, which begin digesting protein. In the small intestine, more enzymes plus bile from the liver (via the gall bladder) and pancreatic secretions continue the digestive process. Together they break down fats, proteins and carbohydrates into simple nutrients, which can be easily absorbed into the blood. Most of these nutrients go to the liver and are then distributed to the rest of the body to provide energy.
- Dietary fibre and some starches are not digested by the enzymes in the small intestine but pass to the large intestine where bacteria break them down to provide a further source of energy. The bacteria and any fibre that has not been broken down form faeces and are passed from the rectum.
- The large intestine is a muscular tube about two metres long consisting of the colon and rectum. Its main function is to absorb water and allow fibre and starch from food to be broken down by bacteria. This produces fatty acids that nourish the cells in the colon. It is also normal for this process to generate gas, which may trouble some people. The bacteria and any food residues pass along the colon to become faeces.
- The rate of movement of the residue is determined by muscular action. If there is too much action, diarrhoea occurs - if there is too little, constipation results. Normally the **movement** of the colon is well coordinated, but it is a complex system and if the rhythm is disturbed, pain and alterations in bowel habit can occur.
- The rectum at the lower end of the large intestine is normally empty but regularly fills up to produce the urge to defaecate. The muscular action in the anal canal, which is connected to the rectum, prevents the involuntary passing of faeces, but can relax enough to allow wind to escape.



# What is Irritable Bowel Syndrome?

## Symptoms:

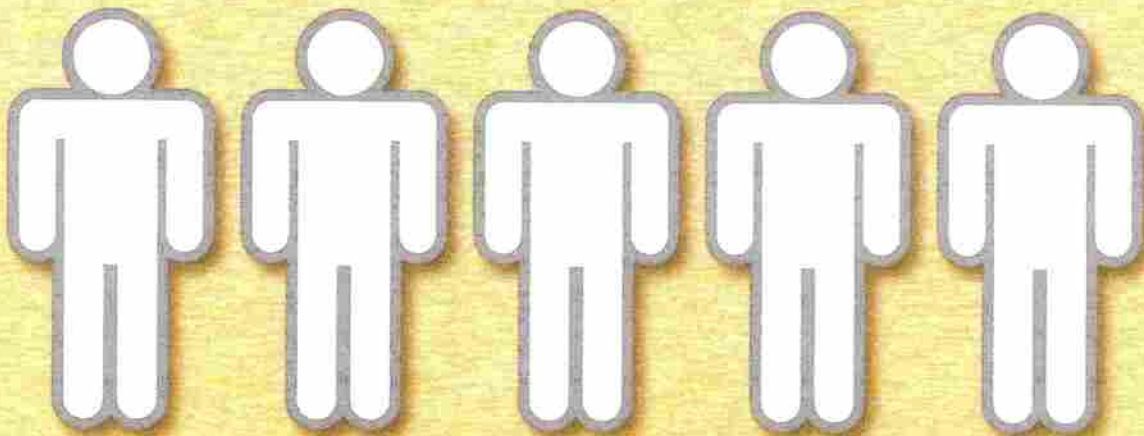
- Abdominal pain
- Variable bowel habit
- Diarrhoea/Constipation
- Bloating/Distension
- Gas (wind)
- Urgency of defaecation

Abdominal pain is **usually** in the lower abdomen, frequently on the left side, often worse in the **morning** and relieved by **passing** wind or defaecating.

Commonly pain occurs soon after waking and there is an urge to defaecate. This is repeated several times with a feeling of incomplete defaecation.

The urgency is sometimes severe and if there has been damage to the muscular function of the anus (during childbirth), loss of bowel control can occur with involuntary passing of faeces or mucus. Gas, bloating and abdominal distension are common and may be worse at the end of the day. Offensive wind is also common. It is socially embarrassing, but it has no **serious** effects on health.

## Who gets it?



Irritable bowel syndrome is common and up to 30% of the population may have symptoms at some time in their life.

**It can occur at any age but is most common between 20 and 60 years.**

# What causes it?

## 1. Association with gastroenteritis

In up to 25% of cases, symptoms of irritable bowel start soon after an attack of gastroenteritis and Traveller's diarrhoea. During the infection, toxins that are released may damage nerve fibres in the gut. The nerve damage may persist even after the infection clears, leading to disordered muscular contraction of the bowel.

## 2. Altered gut sensitivity

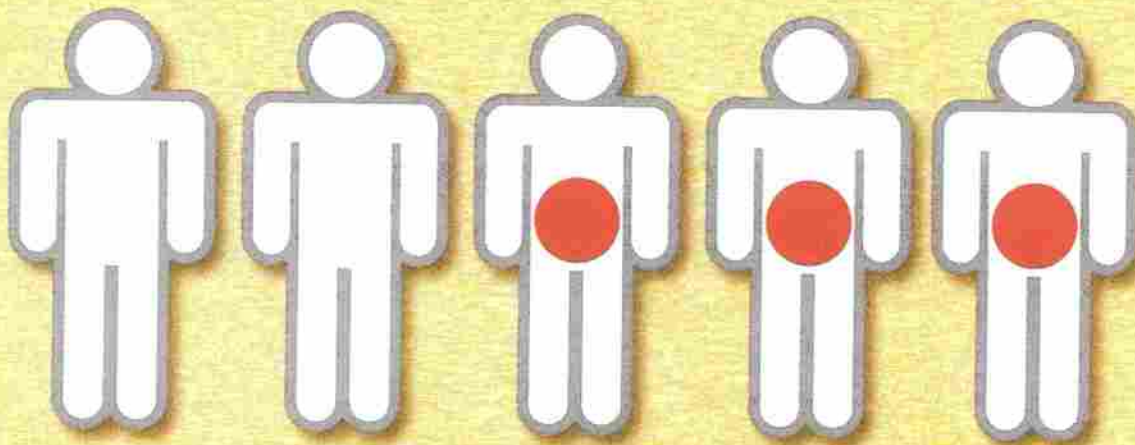
Experiments using balloons inflated within the **intestine** of patients with irritable bowel syndrome show that many are extra **sensitive** to distension or stretching of the gut. The cause is yet to be explained.

## 3. Stress and anxiety

Medical **researchers** talk about the brain-gut axis. Many of the **nerve-muscle** messengers in the gut are similar to those in the brain and reactions can be triggered by various emotions. This is why many people get diarrhoea when they are nervous.

## 4. Food intolerance

Some people may be **sensitive** to **particular** foods; most cases of irritable bowel syndrome are not due to food intolerance. Fat is a **particularly** important trigger for symptoms as is caffeine.



Symptoms usually start before age 40. Females are affected more often than males and symptoms may be worse at certain times of the menstrual cycle.

Symptoms may also be worse at times of stress.

# How is Irritable Bowel Disease Diagnosed?

Irritable bowel syndrome is not a condition that reduces life expectancy, although diarrhoea and urgency are problems that often affect quality of life. The major concern is that the symptoms can be similar to those of other diseases, such as bowel cancer or colitis.

Your doctor can usually suspect irritable bowel syndrome from the pattern of symptoms, but there is no single test to diagnose the condition. However, it is often necessary for a doctor to exclude other conditions that have similar symptoms. These can only be excluded definitely by colonoscopy.

In younger people, colonoscopy may only be necessary if symptoms persist after a period of appropriate treatment. Additional investigations may include blood tests and faecal examination for parasites or infections. Endoscopy, or examination of the stomach, may also be necessary, especially if pain is located high up in the abdomen.



**Rectal bleeding is not due to irritable bowel syndrome and needs special investigation by your doctor.**

**Coeliac disease** should always be excluded by antibody blood tests (IgA and transglutaminase) or by endoscopy and biopsy.

**Colonoscopy** is an examination with a flexible instrument long enough to allow inspection of the entire bowel. It can be used to take tissue samples (biopsies) or to remove polyps. It is done under intravenous sedation and is usually painless.

## Colonoscopy is essential if:

- you have had bowel cancer or polyps
- you have a family history of bowel cancer or polyps
- you have any bleeding from the bowel
- you have persistent diarrhoea (in which case, biopsies are needed to exclude microscopic colitis)
- you are anaemic

**If you are over the age of 40, screening using an FOBT is essential.**

## Could this be Crohn's Disease?

Measure faecal calprotectin/CRP.  
(CRP is elevated with inflammation)



# What should you do about Irritable Bowel Syndrome?

Once your doctor has excluded other conditions, a variety of therapies may be of value. Guidelines, which are helpful, include:

## Understanding irritable bowel syndrome is important.

If you have concerns that some disease may have been missed, you should discuss this openly with your doctor. Many people are worried that their symptoms may be due to cancer. Improvement in symptoms may not occur until you are confident that serious diseases have been excluded.

## Look for lifestyle or dietary factors which aggravate your symptoms and may need attention:

- Are your symptoms worse with stress?
- Do you drink too much alcohol?
- Are your symptoms worse after consuming caffeine, fatty or spicy foods? (More likely than lactose intolerance)
- Are you taking medications which might aggravate diarrhoea? (eg. antibiotics, antacids, laxatives, some tablets for blood pressure)
- Are you taking medication which might aggravate constipation (eg. some antidepressants, iron tablets, pain killers, tranquillisers, some tablets for blood pressure)

## Bulking agents

As well as an adequate intake of dietary fibre, a bulking agent may be helpful. A convenient bulking agent is some form of psyllium (two examples are *Metamucil* and *Agiofibe*). With most psyllium preparations, a daily intake of two to three teaspoons with a glass of water each morning is usually recommended. Other bulking agents include ispaghula husk derivatives (for example *Fybogel*) and sterculia-based products (for example *Normafibe* and *Alvercol*).

*Movicol* is also valuable if constipation is a prominent symptom.

## Medications

*Mebeverine* (eg. *Colofac*) is an antispasmodic, which is often highly effective in relieving pain and urgency. To be useful, it must be taken on a long-term basis three times a day. Some people take the drug only when symptoms appear because it is expensive and is not currently on the Pharmaceutical Benefit Schedule. It is unlikely to be as useful taken this way. Tricyclic compounds such as Tryptanol or Amitriptyline were developed as antidepressants, but also have a separate effect on nerves and muscles in the bowel and bladder and are often helpful in relieving pain. In general, tricyclic drugs are only used when mebeverine has failed to provide satisfactory relief of symptoms. Other anti-spasmodic medications such as *Buscopan* or *Donnatabs* may help.

If the predominant problem is watery diarrhoea, anti-diarrhoeal agents such as *Imodium* or *Lomotil* are often useful. Narcotic-based anti-diarrhoeal compounds such as codeine should generally be avoided, although in rare cases they may be the only means of effectively controlling severe diarrhoea.

Where diarrhoea is associated with urgency resulting in incontinence, mebeverine should be tried first. If this is ineffective, a tricyclic compound is added, and if the stool is still liquid, *Imodium* may also be necessary. If incontinence still occurs when the stool is formed, it is necessary for a doctor to

evaluate the anal **sphincter** muscle. Surgical repair may be useful in some cases. The **passage** of small quantities of clear mucus is usually associated with **internal haemorrhoids** rather than **sphincter** damage, and is treated by banding or injection.

Iberogast is a **solution** of 9 **medicinal** herbal extracts that reinforce each other to treat the multiple **symptoms** of IBS. Helping to restore gut functioning, its multi targeted action calms and soothes gut muscles to help relieve the feeling of fullness, constipation, cramping, **stomach** pain, gas, nausea, **bloating** and diarrhoea. Iberogast is helpful when more than one symptom is **experienced concurrently**, change in nature, or **alternate** during an episode, as it may reduce the pill burden.

Newer drugs, which affect nerve pathways within the gut, are being developed. Laxatives are rarely useful for irritable bowel syndrome. Changes in diet and bulking agents are much more useful, even when diarrhoea is a problem.

**Has microscopic colitis been excluded as the cause of diarrhoea by colonoscopy with biopsies?**

## Dietary management of IBS

**Diet is one aspect of IBS management that should be considered along with lifestyle.**

Food can play a role in managing IBS related symptoms; however some people find changing lifestyle factors, such as reducing the **amount** of stress in their day-to-day life, or exercising regularly has a greater impact.

When considering changes to your diet you must make changes according to your current symptoms. Dietary changes may alleviate symptoms, if the dietary change made is appropriate. The diagram below gives some ideas on dietary changes which may be appropriate for specific symptoms.





## General IBS Advice

Stop unnecessary restrictions

Don't over eat at meals

Regular meal pattern

Healthy eating

Consume plenty of fluids

Take time at meals chewing foods properly

### Diarrhoea

Reduce dietary soluble fibre to tolerance level

Reducing some of the FODMAP foods may be useful

Minimise irritants (caffeine, spicy food, fatty foods, alcohol, & sweeteners e.g. sorbitol/fructose)

### Constipation

Increase soluble fibre (fruits, veg, legumes, oats & barley)

Increase fluid intake

If experiencing symptoms of constipation alone increase intake of all sources of fibre (bran, fruit and veg with skins), along with fluid

### Bloating/Flatulence

Reduce 'windy' vegetables (brassicas, onion & pulses)

Reduce alcohol

Reducing some of the FODMAP foods may be useful

Reduce resistant starch (cooked and cooled potato, pasta, ready meals, & processed foods)

# Intolerance

Some people may be intolerant to certain foods, but often the wrong food or food group is excluded.

For example dairy products are often excluded in search of alleviation of symptoms. This can cause the diet to **become** imbalanced and your body to miss out on important **nutrients**.

Exclusion of milk is **appropriate** if lactose intolerance is **suspected**.

Lactose intolerance is when a person lacks an enzyme called **lactase** to break down the lactose in milk. Even people who are **diagnosed** lactose intolerant have a small amount of lactase **present** in the gut and are able to cope with small amounts of **lactose**. Large amounts of lactose in these individuals will not be broken down by the low levels of lactase, travel to the large bowel where it is fermented by the bacteria in the large bowel, resulting in gas and loose stools. Cheeses and yoghurt do not need to be excluded as lactose content of these foods is minimal. Yoghurt may even be beneficial if it contains probiotics. If you choose to consume these dairy foods, try low fat or reduced fat versions, but avoid products containing added sweeteners. Full fat dairy products may cause symptoms.

If changes to your diet bring no symptom relief, add the excluded food back in. There is no point in avoiding foods unnecessarily.

# Probiotics

Some people with IBS have found taking a probiotic has helped alleviate symptoms.

Probiotics come in the form of fermented milk drinks, fermented foods, yoghurts, tablets, capsules or sachets.

Our bodies are designed to protect us from bacteria getting into the upper part of our bowel by having a stomach which is naturally very acidic. Probiotics therefore must be robust enough to survive the stomach and reach our bowel.

A review of clinical trials and systematic reviews in the area of IBS and probiotics has reported beneficial effects of probiotics on IBS symptoms, and specifically a beneficial effect on bloating, abdominal pain and flatulence. Further studies are needed to establish which specific genus, species, and strain, along with dose of the probiotic is effective in IBS.

Probiotics are considered safe, however although rare, bacteraemia and fungemia have been reported. The risk of developing bacteraemia or fungemia cannot be ruled out if the gut barrier is weakened either by radiation, chemotherapy or severely immune-compromised patients. If you have a condition which has harmed your immune system you should seek advice from your Doctor or dietitian before taking any probiotics.

If you choose to try a Probiotic in your diet to alleviate symptoms, avoid changing other aspects of your diet at the same time. Take the probiotic for a period of four weeks and if there is no benefit, either try another type or stop taking them.

# FODMAP's

A new approach to dietary management of IBS is by limiting a group of highly fermentable short chain carbohydrates called FODMAP's.

'FODMAP' is an acronym for Fermentable, Oligosaccharide, Disaccharide, Monosaccharide And Polyols.

It is thought these short chain carbohydrates are not easily absorbed in the small intestine and travel into the large bowel where they are rapidly fermented by colonic bacteria. This process of rapid fermentation causes production of gas and an osmotic potential within the large bowel, resulting in pain, wind, and loose stools or even diarrhoea.

The FODMAP approach is looking at the total amount of fermentable short chain carbohydrates consumed, rather than cutting out all of the

FODMAP foods. This means that there is a limit to how much each individual can tolerate, not that all FODMAP foods need to be excluded totally from the diet.

The table below is a quick reference guide to the common FODMAP foods. It gives you an idea of foods considered to have high FODMAP content and foods thought to be low in FODMAP content. Take a look at the 'high content' column and see if there are foods in this column you consume regularly. If so, first try reducing your intake and see if your symptoms improve. If your symptoms do not improve, exclude these foods and swap to an alternative from the 'low content' column.

FODMAP	Foods with High Content	Foods with Low Content
<b>Oligosaccharides</b> (Fructans & Galactans)	Soy Beans, Kidney Beans, Baked Beans, Chickpeas, Lentils, Beetroot, Asparagus, Cabbage, Broccoli, Onion, Wheat & Rye (in large amounts), Watermelon, white peaches.	Bok Choy, Carrot, Celery, Capsicum, Lettuce, Tomato, Eggplant, Green Beans, Pumpkin, Spring Onion, Choko, Spelt & Gluten Free Cereals and Bread.
<b>Disaccharides</b> (Lactose)	Milk (cow and goat), Milk Powder, Evaporated Milk, Yoghurt, Soft Cheese, Sour Cream (moderate in lactose so maybe tolerated more), Custard, Ice Cream.	Lactose free milk (rice, soy), Mature Hard Cheese, Fetta, Brie, Camembert, Butter, Ice cream substitute (sorbet).
<b>Monosaccharide</b> (Fructose)	Honey, High Fructose Corn Syrup, Firm, Unripe Fruit, Apple, Pear, Mango, Tinned Fruit in Juice, Dried Fruit (Large serves).	Maple Syrup, Golden Syrup, Ripe Banana, Raspberry, Kiwifruit, Grapes, Orange, Blueberry, Lemon, Lime, Passionfruit, Strawberries.
<b>Polyols</b> (sugar alcohols)	Apple, Lychee, Pear, Nashi Pear, Prunes, Apricots, Cauliflower, Snow Peas, Gums and Mints containing Artificial Sweeteners (sorbitol, mannitol, xylitol).	Banana, Blueberries, Kiwifruit, Lemon, Lime, Orange, Passionfruit, Raspberries. Sugar, glucose and other sweeteners not ending in 'ol'.

Table adapted from: Gibson, Shepherd. Evidence-based dietary management of functional gastrointestinal symptoms: The FODMAP Approach. *Journal of Gastroenterology and Hepatology* 25 (2010) 252-258



# An Example Menu Excluding FODMAP's

## Breakfast

- Puffed corn, millet or rice with rice or soy milk (soy milk does contain oligosaccharides but generally it is considered to be well tolerated)
  - 2 tbsp of fresh or frozen (no canned) strawberries or raspberries
- 

## Mid-morning snack

- 2x large rice cakes with goat fetta and kalamata olives
- 

## Lunch

- Rice with tinned tuna, handful of spinach leaves and 1 tblsp sweet corn
  - 2 tsp mayonnaise
  - An orange or kiwifruit (does contain sources of Polyols so be aware of tolerance level)
- 

## Mid-afternoon snack

- 2 taco shells
  - Fresh tomato (chopped up as a dip)
- 

## Evening Meal

- Lean meat, poultry or fish
  - Potatoes – boiled, mashed or roasted
  - 2 to 3 tbsp of Pumpkin, peas and broccoli
  - Mini Pavlova with 1tblsp raspberries
- } *does contain sources of Polyols  
so be aware of tolerance level*
- 

The Gut Foundation advises anyone who has been diagnosed by a doctor to having IBS to seek dietary advice by an Accredited Practising Dietitian for full dietary assessment and advice tailored to the individual. For specific FODMAP advice, see a dietitian trained in the diet, the diet is complex and research suggests it can be one, all, or a combination of FODMAP's that can give IBS symptoms.

# General Hints for IBS

Do not skip meals or eat late at night.

**Avoid over eating.**

Take your time at meals, sit at a table, and chew food properly.

Drink plenty of fluids. Don't wait till you feel thirsty, you will already be dehydrated.

**Avoid triggers or irritants –** such as spicy or fatty foods, alcohol, and caffeine.

Keep a food and symptom diary, but remember symptoms are unlikely to be caused by the food just eaten.

Do not exclude foods unnecessarily.

**Give your body time** to adjust to changes in your diet and make one change at a time.

Incorporate regular activity into your daily routine – this can help reduce stress and aid bowel function.

Make time to relax – anxiety and stress will make IBS symptoms worse.

**Fibre – add small amounts in till you find your tolerance level.**

**Fruit & Vegetables –** try different fruit and veg and find the types and amounts you can tolerate.

Look at the FODMAP table and reduce or stop consuming high FODMAP foods.

**Alcohol – avoid as much as possible, however if consumed, intake should not exceed 2 standard drinks per day for men, and 1 standard drink per day for women.**