ALL ABOUT FOOD

- **Food allergy** or food hypersensitivity are quite uncommon. These are reactions to a protein in the food and involve the immune system. With food allergies, the body reacts to the allergen by producing an antibody known as immunoglobulin E (IgE). When the antibodies and the allergen meet, they trigger the release of histamine and other defensive chemicals into the body. Symptoms include hives (Urticaria), asthma, a runny nose and mouth swelling.

- **Food intolerances**, they are very common. These reactions do not involve the immune system, but can also cause other symptoms, such as headaches and fatigue.

COELIAC DISEASE

What is it?

Coeliac disease is an extreme example of food hypersensitivity. It is the result of an immune reaction to gluten that severely injures the body, and has been called an auto-immune disease (because the body turns on itself). Gluten is the main protein in wheat, rye, barley and oats. When someone with coeliac disease eats foods containing gluten, the lining of their bowel is damaged by the white blood cells of their immune system (not by antibodies as in a food allergy).

Symptoms

These range from none at all to nausea, wind, bloating, altered bowel habits, fatigue and even skin rashes and liver or neurological problems. It can cause vitamin and mineral deficiencies and can also cause malnutrition through weight-loss and loss of muscle mass.

Treatment

The only way to treat coeliac disease is with a gluten free diet for life: no wheat, rye, barley or oats, and no products derived from them, ever.
About one in 20 people with IBS have coeliac disease.

**Diagnosis**

The diagnosis of coeliac disease is through blood tests to measure certain types of antibodies that occur only in people having coelic disease. If blood test is positive then there are more test to do.

**IBS**

Irritable bowel syndrome is one of a group of conditions called “functional gastrointestinal disorders”. This means that they cause disturbances in the function of the gut but don’t have any identifiable physical features. The diagnosis of IBS relies upon the types of symptoms experienced and their context, such as how long they have been experienced and when they occur.

The symptoms of IBS are most commonly triggered by a food intolerance. If you suffer from IBS, you very have a food intolerance.

It says that people can be diagnosed as having IBS if they say they have suffered symptoms of a functional gut disorder for at least six months and have experienced for at least three months of the

year mid or lower abdominal pain or discomfort associated with abdominal bloating or distension, along with changes in bowel habits.

**What cause IBS?**

- Genetic factors
- Gut infections
- Stress and other psychological factors
- Abnormal balance of bowel bacteria
FODMAPs (Fermentable-Oligosaccharides-Disaccharides-Monosaccharides And Polyols)

Many carbohydrates in food are poorly digested and are not absorbed by the small bowel. Dietary fibre is one example.

Some fibre, known as insoluble fibre, cannot be fermented by bacteria, and other fibre, known as soluble fibre, can be fermented by bacteria. Some sugars, oligosaccharides and sugar alcohols are also indigestible and cannot be absorbed by the bowel, but can be broken down by intestinal bacteria to produce gas.

One way to reduce the amount of gas in the bowel is to eat minimal amounts of carbohydrates, except for those that are readily digested, such as sucrose (cane sugar) or glucose.

A much better and more practical approach is to determine which carbohydrates are the major contributors to the production of gas in the bowel and to avoid them.

These are the carbohydrates that are easily and rapidly fermented by bacteria—the molecules we call FODMAPs. We know from our scientific studies that FODMAPs can cause diarrhea, gas production and excess wind. We have also found that the LOW-FODMAP Diet reduces bloating, distension and wind in most of people.

General eating advice

Apart from following the Low-FODMAP Diet, there are some simple rules you can observe:

- Don’t overeat, and enjoy your meals while eating
- Avoid excessive intake of fats, caffeine and alcohol
- Avoid stress-filled meals
- Don’t skip meals—eat regularly
**FRUCTANS**

Fructans are chains of fructose molecules with a glucose molecule at the end. The main dietary source of fructans include wheat products and some vegetables (onions).

No one is able to digest fructans, and if you have IBS you should minimize your intake of them. Fructans are probably the most common FODMAP to cause symptoms of IBS, probably because most of people eat a lot of them.

**HIGH – FRUCTAN FOODS** (better to avoid them)

**FRUITS**
custard apple, nectarines, persimmon, rambutan, watermelon, white peaches

**VEGETABLES**
Artichokes, asparagus, beetroot, brussel sprouts, cabbage, chicory, dandelion leaves, fennel, garlic, leeks, okra, onions, peas, radicchio, spring onions

**CEREAL, GRAINS**
wheat-based products, bread, pasta, couscous, crackers, biscuits, rye and barley

**LEGUMES**
chickpeas, lentils, all the beans

**NUTS**
pistachios

**DRINKS**
chicory-based coffee-substitues, dandelion tea

**LOW-FRUCTAN ALTERNATIVES** (to eat)

**FRUITS**
all except the one mentioned before

**VEGETABLES**
alfalfa, avocado, bamboo shoots, bean shoots, bok choy, broccoli, capsicum, carrots, cauliflower, celery, chives, choy sum, cucumber, eggplant, endive, ginger, green beans, lettuce, marrow, mushrooms, olives, parsnips, potatoes, pumpkin, snowpeas, spinach, sweet potatoes, taro, tomatoes, turnips, yams, zucchini

**CEREAL, GRAINS**
amaranth, arrowroot, buckwheat, corn, millet, oats, potato, quinoa, rice, sorghum, tapioca

**DRINKS**
Herbal teas and infusion

**FOOD SUPPLEMENTS**
chia, linseed, sunflower, almond mix, nuts and seeds, oat bran, psyllium, rice
**GALACTO-OLIGOSACCHARIDES (GOS)**

GOS, are chain molecules formed from galactose sugars joined together with a fructose and glucose at the end. Raffinose and stachyose are the most common GOS found in food. They occur in legumes, such as baked beans, lentils and chickpeas.

Like FRUCTANS, GOS cannot be digestes or absorbed by anybody and they should be avoided if you have IBS.

**DISACCHARIDES-LACTOSE**

Only one disaccharide can potentially act as a FODMAP in food-lactose.

Lactose is a double sugar that occurs naturally in all animal milks. Made up of two digestible sugars called glucose and galactose, it is broken down in the small bowel into its component sugars by an enzyme called lactase. Lactose-intollerante people, have low levels of lactase and can only break down a very small amount of the lactose they consume.

**MONOSACCHARIDES-FRUCTOSE**

The only important monosaccharide that can potentially act as a FODMA in food is fructose.

Fructose, a single sugar, is often referred to as the “fruit sugar”. It is found in every fruit, in honey, and high-fructose corn syrup. It is a component of sugar and is also found in some vegetables and grains. When fructose occurs with glucose, it is well absorbed because it is “piggybacked” across the bowel lining by the glucose. If fructose is found in higher concentrations than glucose, its absorption is slow or incomplete. This situation is called fructose malabsorption.

**FOOD CONTAINING EXCESS FREE FRUCTOSE (to avoid)**

**FRUITS**
- Apples, cherries, mangoes, nashi pears, pears, persimmon, rambutan, watermelon

**VEGETABLES**
- Sugar snap peas

**HONEY**
- all types

**SWEETENERS**
- high-fructose corn syrup, corn syrup solid, fruit juice concentrate
FOOD CONTAINING LOW-FRUCTOSE OR BALANCE ALTERNATIVES (to eat)

FRUITS: apricots, avocados, bananas, blackberries, blueberries, boysenberries, cranberries, cumquats, durian, grapefruit, grapes, honeydew melon, kiwifruit, lemons, limes, longons, lychees, mandarins, nectarines, oranges, passionfruit, paw paw, peaches, pineapple, plums, raspberries, rhubarb, rockmelon, star fruit, strawberries, tangelos, tomatoes

VEGETABLES: all except sugar snap peas

HONEY: golden syrup, maple syrup, molasses, rice syrup, treacle, yeast extract, peanut butter, cho-nut spread, jam and marmalade in small quantities

SWEETENERS: sucrose (table sugar, cane sugar) including caster sugar, icing sugar, brown sugar, raw sugar, glucose

POLYOLS (sugar alcohols)

Polyols occur naturally in some fruits and vegetables. They are often used in food manufacturing as humectants (water binding agents) and artificial sweeteners, particularly in "sugar-free" chewing gums, mints and confectionery.

Food are considered a problem for IBS sufferers if they contain more than 0.5 grams of polyols per serve.

HIGH-POLYOL FOODS

FRUITS: Apples, apricots, blackberries, cherries, longons,
Lychees, nashi pears, nectarines, pears, peaches, plums, prunes, watermelon

VEGETABLES: avocados, cauliflower, mushrooms, snowpeas

SUGAR-FREE OR LOW CARB: gums, mints, lollies, dairy dessert and other products containing polyol additives

ADDITIVES: sorbitol (420), mannitol (421), maltitol (965), xylitol
LOW-POLYOL ALTERNATIVES

FRUITS
bananas, blueberries, boysenberries, cranberries,
Durian, grapefruit, grapes, honeydew melon, kiwifruit, lemons,
limes, mandarins, mangoes, oranges,
Passionfruit, paw paw, pineapple, raspberries, rhubarb,
rockmelon, star fruit, strawberries, tangelos

VEGETABLES
all except avocados, cauliflower, mushrooms, snowpeas

SUGAR-FREE OR LOW CARB
regular chewing gum sweetened with sugar, regular
Regular sugar sweetened mints and confectionery

ADDITIVES
aspartame, saccharine, stevia

FOODS SUITABLE FOR A LOW-FODMAP DIET

FRUITS
bananas, blueberries, durian, carambola, grapefruit, grapes,
honeydew melon, kiwifruit, lemons, limes, mandarins,
Oranges, passionfruit, paw paw, raspberries, rockmelon,
Strawberries, tangelos, tomatoes

VEGETABLES
alfalfa, bamboo shoots, beans shoots, bok choy, broccoli,
Capsicum, carrot, celery, choko, choy sum, corn, cucumber
Eggplant, green beans, lettuce, marrow, olives, parsnip
Potato, pumpkin, silverbeet, spinach, spring onion
(green part only), squash, swedes, sweet potato, taro
Tomatoes, turnips, yams

MILK PRODUCTS
lactose free milk, hard cheese, including brie and
Camembert, lactose free yoghurt, butter…
GRAIN FOODS
- gluten free bread and cereal products, amaranth
- Arrowroot, buckwheat, corn, millet, oats, polenta
- Quinoa, rice, sorghum

SWEETENERS
- sugar, glucose, stevia, any other artificial sweeteners not ending in -ol

OTHER
- garlic-infused oil as an onion and garlic substitute,
- Fresh and dried herbs and spices, chives, ginger, maple
- Syrup and golden syrup as honey substitutes

If you have been diagnosed with IBS, or if you have experienced bloating and abdominal discomfort with or without a change in your bowel discomfort, you should follow the Low-FODMAP Diet. At the beginning of the diet is best to avoid all FODMAPs for at least two months. If your symptoms have improved after this time, you can, if desired, gradually reintroduce one FODMAP group at the time to see if you tolerate it.

Here some important point to keep in mind:

- Consider all the FODMAP groups.
- No one can absorb fructans, GOS or polyols well; which means you should always avoid them when first implementing the Low-FODMAP diet.
- Only some people have lactose or fructose malabsorption (a breath hydrogen test will tell you).
- Some FODMAPs cause more trouble in some people than others.
- You should eat no more than one serve of “suitable” fruits per meal. One serve is usually one metric cup of cut-up fruit, or one whole piece of fruit. You can enjoy many fruit serves per day, but you should allow two to three hours between each serve.
- Eat table sugar should not cause symptoms if eaten in moderation.
- You must avoid eating wheat and rye in large quantities

- Avoid eating onions and garlic at least for two months. Onion is one of the greatest contributors to IBS symptoms. Garlic-flavour oil provides a good flavour substitute

- Keep a food diary