



## The low-down on IBS and FODMAPs

How does your gut feel when you eat real pasta? What about when you drink cow's milk? Do you digest these foods with ease (lucky bugger) or does it feel like your gut is on fire? If it's the latter, you must read this article.

Words Josh Reed

Your gut is your unique ecosystem or blueprint and should be alive and flourishing. However, for some people, the gut can feel like it's constantly on fire, with symptoms of bloating, abdominal discomfort, pain, diarrhoea and/or constipation. Grouped together, these are common characteristics of a condition called irritable bowel syndrome (IBS). Unfortunately, this condition can induce fear with each bite of food.

### What is IBS?

IBS is a chronic condition defined by abdominal pain or discomfort, with changes in stool frequency and consistency. It affects more than one in five Australians and is twice as common in women. Key symptoms include recurring episodes of diarrhoea or constipation, abdominal discomfort and bloating. Your doctor will diagnose IBS if you have suffered these symptoms at least once weekly for a period of three months or more. Before confirming a diagnosis, more sinister conditions that can cause similar symptoms should first be ruled out, including coeliac disease and inflammatory bowel disease.

Despite IBS being such a common condition, its cause is still unknown. However, we do know that visceral hypersensitivity (VH) plays a major role in its pathogenesis. As the name suggests, VH means you

have a heightened sensitivity to pain in your viscera (internal organs). So those with IBS have a lower pain threshold in their gut, meaning even minor intestinal distension, caused by gas-producing foods (FODMAPs), will cause significant discomfort.

Think of VH like poking or prodding a twisted ankle. Your gut is the twisted ankle and gas-producing FODMAPs are doing the prodding. Not a fun time.

It's important to note that IBS does not exclusively affect the gut; it also affects the mind. Research shows that nearly 50 per cent of IBS sufferers experience anxiety, with up to 15 per cent also experiencing depression. These are worrying statistics.

Enter the gut-brain axis (GBA) — the bidirectional communication constantly occurring between your gut and brain. Your gut and brain interact via your nervous system, endocrine system, immune components and gut microbiota. When one of these pathways is altered, disturbances in the GBA drive pathogenesis for both neural and gastrointestinal tract (GI) disorders, including IBS. For example, some gut microbes stimulate and produce the neurotransmitters serotonin and GABA, which are implicated in mood disorders as well as alterations in bowel habits. Further to this, stress plays a major role in IBS, likely through the secretion of pro-inflammatory cytokines and cortisol, which, in turn, affect GI motility, permeability and VH.

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**The link between diet and IBS**

To spell out what you already know, diet plays an integral role in gut health. Not only is it the preferred and most helpful treatment for IBS, it may also be the cause. What you choose to eat, or not eat, modulates your gut microbiota composition, diversity and vitality. Your choices also influence your colonic fermentation, GI motility, visceral sensation, your GBA and your immune regulation. On top of this, you might also have food allergies or intolerances that can cause or exacerbate your GI symptoms. Note that food allergies involve your immune system, whereas food intolerances are non-immune mediated.

**Food intolerances**

More than 90 per cent of IBS sufferers report that food triggers their GI symptoms and, in turn, limits foods they relate to their symptoms. Unless correctly informed and guided, most of these sufferers navigate in the dark, not knowing their specific intolerances or thresholds. Further to this, they often compromise their nutritional intake and potentially worsen their IBS. Therefore, it's integral to work with a dietitian for expert guidance in this area.

Knowing your specific food intolerances, including thresholds, is key to navigating your IBS and overall nutritional intake.

And although there are numerous aspects of diet and lifestyle to consider when treating IBS, including gut irritants, clinical factors, fibres and supplements, FODMAPs are often a key culprit.

More than three in four people with IBS experience symptom improvement after following a low-FODMAP diet.

**FODMAPs**

FODMAPs stands for fermentable oligosaccharides, disaccharides, monosaccharides and polyols. These are short-chain carbohydrates that exert a high osmotic effect and are rapidly fermented in your gut. They are found in a wide variety of foods and are tolerated well by most, however often not so well by those with IBS.

FODMAPs are poorly absorbed in the small intestine (of all people) because of slow transport mechanisms, reduced digestive enzymes, lack of specific hydrolases, or simply because they are too big. In turn, they end up in the large intestine where they are rapidly fermented by gut bacteria. This fermentation results in gas production, which distends intestines

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(bloating) and pushes on intestinal nerves, resulting in abdominal discomfort/pain.

Furthermore, due to their high osmotic effect, certain FODMAPs cause extra water to be sucked into the intestinal tract. This can result in loose, watery stools (diarrhoea). In contrast, some IBS sufferers may suffer constipation because of higher numbers of methanogenic bacteria living in their bowel. These specific bacteria produce methane gas upon fermenting FODMAPs, a gas that has been shown to slow GI transit, leading to less-frequent and harder stools (constipation).

Overall, IBS plus FODMAPs often equals gut symptoms.

**The FODMAP trial**

**Phase 1. Eliminate**

Phase one of the FODMAP protocol is the low-FODMAP diet. The key word is low, which means eliminating all foods containing moderate-to-high levels of FODMAPs and consuming only low-FODMAP-containing foods. Examples of certain high-FODMAP foods avoided are fruits (apples, stone fruit, dried fruits), vegetables (onions, legumes, cauliflower, snow peas), dairy (milk, yoghurt) and grains (wheat bread, pasta) and consuming only low-FODMAP foods, for example kiwifruit, most berries, citrus, spinach, carrots, capsicum, almond/soy milk, rice, oats, quinoa, fish and eggs.

The goal of this phase is to induce symptom control.

**Phase 2. Challenge**

After four to six weeks on the low-FODMAP diet, most will experience an improvement in their IBS symptoms, particularly their bloating and abdominal discomfort. At this point, you will commence phase two — the challenge phase. This involves continuing the low-FODMAP diet while challenging

particular FODMAPs using certain foods. Specifically, you will challenge foods high in fructose, sorbitol, mannitol, lactose, fructans and GOS. These are referred to as the FODMAP subgroups. Each subgroup is challenged with a low dose, then a high dose. Each challenge usually lasts a week. For example, eating half a clove of garlic per day for a few days, then one clove of garlic a day for a few days.

The goal of the FODMAP challenge phase is to find out what FODMAPs trigger your IBS symptoms, as well as find out what your tolerance levels are for each subgroup. For example, you might be fine tolerating half a clove of garlic per day, however any more might trigger your symptoms.

Fortunately, most people with IBS find they can tolerate at least a few different FODMAP subgroups.

**Phase 3. Personalise**

After you have completed all of the FODMAP challenges, FODMAP combinations will be challenged. For example, high-fructose foods consumed together with high-sorbitol foods. From here, your overall diet will be personalised based on your FODMAP tolerances and certain thresholds — the maximum dose of a certain FODMAP you can tolerate before your symptoms are triggered.

The overall goal of phase three is to return you as closely to your original, nutritionally adequate diet as possible.

**Consequences**

There's a group of FODMAP subscribers out there who get caught up in following the low-FODMAP diet (phase one) long-term. This isn't good for you! If you don't challenge and re-introduce high-FODMAP foods, you risk nutrient deficiencies such as iron, calcium, fibre, limit your food variety, compromise your gut microbiota diversity, as well as burden your social life.

Remember, the FODMAP protocol is a three-phased approach and it's paramount you complete it properly.

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**4 facts about FODMAP**

**1** A FODMAP diet is recommended for those diagnosed with IBS, a condition characterised by recurring episodes of abdominal discomfort, bloating and altered bowel habits.

**2** FODMAPs are highly fermentable carbohydrates. Some high-FODMAP foods include wheat breads, pastas and cereals; cow's milk and yoghurt; legumes; onion, garlic, broccoli, mushrooms, beetroot, cabbage; apple, avocado, pear, stone fruits and dried fruits.

**3** Some low-FODMAP foods include oats, quinoa and rice; almond, rice and soy (protein) milks; cucumber, spinach, capsicum, carrot and ginger; blueberries, kiwifruit and citrus.

**4** For best-practice IBS management, work with an accredited dietitian specialising in food intolerance.

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