

LOW FODMAP DIET FOR IRRITABLE BOWEL SYNDROME



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What are FODMAPs?

“FODMAP” is the acronym for Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols, a group of short-chain carbohydrates and sugar alcohols (polyols).¹ These nutrients are ubiquitous in the diet.

The key FODMAPs are:

- » Oligosaccharides, such as fructans/fructo-oligosaccharides (found in grains and vegetables) and galactans/galacto-oligosaccharides (found in legumes)
- » Disaccharides, such as lactose (found in milk)
- » Monosaccharides, such as fructose (found in fruit)
- » Polyols, such as sorbitol (found in sweetened products)

What effect do FODMAPs have in the digestive system?

Susceptible people can experience intestinal symptoms from ingestion of FODMAPs for a number of reasons.

- » The carbohydrates are not well absorbed into the body and remain in the digestive tract for longer periods.
- » FODMAPs draw water into the intestines, which can increase bowel motions and promote diarrhoea
- » These carbohydrates can be metabolised by detrimental bacteria that reside in the bowel and small intestine, producing gas, bloating and wind.²

To determine if FODMAPs might be contributing to your symptoms, the most effective strategy is to eliminate all FODMAP-containing foods and observe your symptoms. Following the elimination of all FODMAPs, the next step is to complete systematic rechallenge one-by-one of each FODMAP to help determine the tolerable doses and types of FODMAPs for you.

It is not generally recommended that you follow a low FODMAP diet for life; restricting dietary intake of a wide array of foods should generally be avoided if possible to reduce the risk of nutrient deficiencies. FODMAPs are a normal part of the diet and have benefits for health, such as providing fibre and prebiotics for gastrointestinal health.

How to eat a low FODMAP diet - Elimination Phase

To trial the low FODMAP diet, all high-FODMAP foods need to be eliminated from the diet for at least two weeks, until there has been a significant reduction in symptoms. Relevant symptoms should be monitored and recorded (using the diary in Appendix A) on a daily basis, to track any benefits from the dietary program.

Table 1 gives a detailed list of foods in each FODMAP category that should be avoided. Where quantities are given, these foods should be avoided only above the given dose. Many alternative foods can be consumed whilst following a low FODMAP diet. Table 2 provides a list of suitable foods which can be enjoyed.

Table 1: Foods to avoid for a low FODMAP diet.^{3,4}

FODMAP	Foods to avoid
Fructose	<p>Fruits: apples, boysenberries, cherries (>3), figs, pears, nashi pears, peaches, mango, watermelon, tamarillo, tinned fruit, dried fruit, large serves of fruit</p> <p>Vegetables: asparagus, artichokes, sugar snap peas</p> <p>Sweeteners: honey, fructose (>5g daily*), high fructose corn syrup</p> <p>Drinks: fruit juice, soft drinks sweetened with fructose, sparkling wine, dessert wine, ciders, rum</p>
Fructans	<p>Fruits: custard apples, nectarines, peaches, persimmon, rambutan, tamarillo, watermelon</p> <p>Vegetables: artichokes, asparagus (>3), beetroot (>4 slices), Brussel sprouts (>1/2 cup), broccoli (>1/2 cup), cabbage - savoy (>1 cup), chicory root, corn (>1/2 cob), fennel (>1/2 cup), garlic, leeks, okra, onions, peas (>1/3 cup), radicchio lettuce, snow peas (>10), spring onion (white part)</p> <p>Cereals: wheat, rye, barley products (bread, pasta, couscous, crackers, biscuits)</p> <p>Nuts: cashews, pistachios</p>
Galactans	<p>Legumes: all (chickpeas, lentils, dried/canned beans, baked beans, soy beans)</p> <p>Drinks: soy milk</p>
Lactose	<p>Milk: cow, goat and sheep</p> <p>Cheese: fresh (cottage, ricotta, cream cheese, mascarpone)</p> <p>Other dairy products: yoghurt, ice cream, custard</p>
Polyols	<p>Fruits: apples, apricots, avocado (>1/4), blackberries, cherries (>3), longan (>10), lychees (>5), nashi pears, nectarines, pears, peaches, plums, prunes, watermelon</p> <p>Vegetables: cauliflower, celery (>1 stick), mushrooms, snow peas, sweet potato (>1/2 cup)</p> <p>Sweeteners: sorbitol (420), mannitol (421), xylitol (967), maltitol (965), isomalt (953)</p>

*up to 5g daily of fructose may be consumed if taken with meals⁵

Table 2: Alternative foods that can be consumed on a low FODMAP diet.^{6,7}

FODMAP	Foods to enjoy
Fruit	Banana, blueberries, grapefruit, grapes, honeydew melon, kiwifruit, lemons, limes, mandarins, oranges, passionfruit, pawpaw, pineapple, raspberries, rockmelon, tomatoes
Vegetables	Alfalfa, bamboo shoots, bean sprouts, bok choy, carrot, cabbage (common), capsicum, choko, choy sum, eggplant, green beans, lettuce, chives, parsnip, potato, pumpkin, radish, silver beet, spring onion (green only), squash, zucchini
Cereals	Gluten-free products, spelt, corn, oats, polenta, quinoa, rice (note: gluten is not a FODMAP but commonly occurs with fructans)
Nuts	(<1 handful daily) macadamias, peanuts, pecans, pine nuts, pumpkin seeds, sesame seeds, sunflower seeds, walnuts
Dairy	Milk & cheeses: lactose-free cows' milk, rice milk, most cheeses (e.g. brie, camembert, cheddar, fetta) Other dairy products: butter, yoghurt (lactose-free), dairy free gelati, sorbet
Sweeteners	Sugar (sucrose), glucose, maple syrup, golden syrup, stevia, sucralose
Meats	Beef, lamb, kangaroo, poultry, eggs, tofu, tempeh



The Low FODMAP diet - Reintroduction Phase

The reintroduction phase may be commenced after two weeks in the elimination phase, when some significant resolution of symptoms has been achieved. The goal is to systematically reintroduce each FODMAP to determine the level of individual FODMAP consumption that can be comfortably tolerated.^{8,9}

A five week program for the reintroduction phase is outlined in Table 3. Each week, one specific carbohydrate type is trialled, with a serving consumed on three separate days. Symptoms are monitored for 48 hours after each dose to determine if there is a possible reaction to that carbohydrate. If you believe there is no reaction over the following 48 hours you can continue with the next dose of that carbohydrate. If you experience a worsening of symptoms following the reintroduction of a specific FODMAP, then it is recommended to discontinue trialling that FODMAP and wait until symptoms resolve. Once the symptoms have resolved you can move onto the next type of FODMAP to trial.

All other FODMAP sources should continue to be avoided for the duration of the five week reintroduction phase, even if a particular FODMAP appears to be well tolerated from the rechallenge. Small doses of individual FODMAPs may have an additive effect which makes it difficult to determine the individual cause.

Table 3: The reintroduction phase of the low FODMAP diet.¹⁰

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1: Mannitol and sorbitol (polyois)	½ cup of mushrooms, 4 dried apricots and monitor symptoms.	Monitor symptoms	½ cup of mushrooms, 4 dried apricots and monitor symptoms.	Monitor symptoms	½ cup of mushrooms, 4 dried apricots and monitor symptoms.	Monitor symptoms	Monitor symptoms
Week 2: Lactose (disaccharide)	250ml of milk or 200g of yogurt and monitor symptoms.	Monitor symptoms	250ml of milk or 200g of yogurt and monitor symptoms.	Monitor symptoms	250ml of milk or 200g of yogurt and monitor symptoms.	Monitor symptoms	Monitor symptoms
Week 3: Fructose (mono saccharide)	2 tsp of honey and monitor symptoms.	Monitor symptoms	2 tsp of honey and monitor symptoms.	Monitor symptoms	2 tsp of honey and monitor symptoms.	Monitor symptoms	Monitor symptoms
Week 4: Fructans (oligo saccharide)	2 slices of wholemeal wheat bread and monitor symptoms.	Monitor symptoms	2 slices of wholemeal wheat bread and monitor symptoms.	Monitor symptoms	2 slices of wholemeal wheat bread and monitor symptoms.	Monitor symptoms	Monitor symptoms
Week 5: Galactans (oligo saccharide)	½ cup of lentils or legumes and monitor symptoms.	Monitor symptoms	½ cup of lentils or legumes and monitor symptoms.	Monitor symptoms	½ cup of lentils or legumes and monitor symptoms.	Monitor symptoms	Monitor symptoms

Creating your individualised low FODMAP diet

After the five week trial, it is recommended to integrate foods from all the FODMAP groups which were well-tolerated into your normal diet, to determine your tolerance of the combination of FODMAPs. Symptoms should continue to be monitored closely during the reintroduction. If there is a return of symptoms then it is recommended to eliminate those FODMAP groups again until symptoms resolve. The combination of FODMAPs should then be reintroduced at a lower dose.

For the FODMAP types which aggravated symptoms, it is recommended you continue to avoid, or significantly restrict, foods containing these FODMAPs in your diet. Table 1 provides a list of the foods grouped by FODMAP type to be used as a reference for continued avoidance. Your practitioner may be able to assist to improve your tolerance of FODMAP containing foods over time.

Treat Underlying Causes

If any improvement is noted in the FODMAPs diet it would be advisable to investigate potential underlying causes. Looking into *Dysbiosis*, *Candida* and *Leaky Gut Syndrome* would be the next step in reducing the long term symptoms of IBS.

References:

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