

ALLERGY AND REACTIVITY REDUCTION PROGRAM

Low FODMAP Diet - Patient Handout

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 the bacteria that normally reside in the bowel, 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.

Table 1: Foods to Avoid for a Low FODMAP Diet.^{3,4}

FODMAP	FOODS TO AVOID
Fructose	Fruits: apples, boysenberries, cherries (>3), figs, pears, nashi pears, peaches, mango, watermelon, tamarillo, tinned fruit, dried fruit, large serves of fruit. Vegetables: asparagus, artichokes, sugar snap peas. Sweeteners: honey, fructose (>5.0 g daily*), high fructose corn syrup, agave. Drinks: fruit juice, soft drinks sweetened with fructose, sparkling wine, dessert wine, ciders, rum.
Fructans	Fruits: custard apples, nectarines, peaches, persimmon, rambutan, tamarillo, watermelon. Vegetables: artichokes, asparagus (>3), beetroot (>4 slices), brussel sprouts (>½ cup), broccoli (>½ cup), cabbage - savoy (>1 cup), chicory root, corn (>½ cob), fennel (>½ cup), garlic, leeks, okra, onions, peas (>½ cup), radicchio lettuce, snow peas (>10), spring onion (white part). Cereals: wheat, rye, barley products (bread, pasta, couscous, crackers, biscuits), inulin. Nuts: cashews, pistachios, almonds (>10).
Galactans	Legumes: all (chickpeas, lentils, dried/canned beans, baked beans, whole soy beans). Drinks: soy milk.
Lactose	Milk: cow, goat and sheep. Cheese: fresh (cottage, ricotta, cream cheese, mascarpone). Other dairy products: yoghurt, ice cream, custard.
Polyols	Fruits: apples, apricots, avocado (>¼), blackberries, cherries (>3), longan (>10), lychees (>5), nashi pears, nectarines, pears, peaches, plums, prunes, watermelon. Vegetables: cauliflower, celery (>1 stick), mushrooms, snow peas, sweet potato (>½ cup). Sweeteners: sorbitol (420), mannitol (421), xylitol (967), maltitol (965), isomalt (953).

*Up to 5 g daily of fructose may be consumed if taken with meals.⁵

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HOW TO EAT A LOW FODMAP DIET – ELIMINATION PHASE

To trial the low FODMAP diet, all high-FODMAP foods need to be eliminated or 'Rested' 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 your symptom tracker on a daily basis.

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 while following a low FODMAP diet. Table 2 provides a list of suitable foods which can be enjoyed.

Table 2: Suggested Alternative Foods That Can be Consumed on a Low FODMAP Diet.^{6,7}

FOOD GROUPS	FOODS TO ENJOY
 Fruit	Banana, blueberries, grapefruit, grapes, honeydew melon, kiwifruit, lemons, limes, mandarins, oranges, passionfruit, paw paw, pineapple, raspberries, rock melon, 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/dairy alternatives	Milk and cheeses: lactose-free cows' milk, rice milk, almond milk (inulin free), most cheeses (e.g. brie, camembert, cheddar, fetta). Other dairy products: butter, yoghurt (lactose-free coconut), dairy free gelati, sorbet.
 Sweeteners	Sugar (sucrose), glucose, maple syrup, golden syrup, stevia, sucralose.
 Meats	Beef, lamb, kangaroo, poultry, eggs, tofu, tempeh (up to 160 g per day).

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THE LOW FODMAP DIET – TEST PHASE

The test phase may be commenced after two weeks in the elimination/rest 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 test 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 (using your symptom tracker) 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 testing 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 test 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 Test Phase of the Low FODMAP Diet.¹⁰

		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
Week 1	Mannitol and sorbitol (polyols)	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)	250 mL of milk or 200 g of yoghurt and monitor symptoms	Monitor symptoms	250 mL of milk or 200 g of yoghurt and monitor symptoms	Monitor symptoms	250 mL of milk or 200 g of yoghurt and monitor symptoms	Monitor symptoms	Monitor symptoms
		Week 3	Fructose (mono saccharide)	2 teaspoons of honey and monitor symptoms	Monitor symptoms	2 teaspoons of honey and monitor symptoms	Monitor symptoms	2 teaspoons of honey and 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
	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

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CREATING YOUR INDIVIDUALISED LOW FODMAP DIET

After the five week test, it is recommended you 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 move onto the maintenance phase of the program to determine your threshold of tolerance ongoing. Table 1 provides a list of the foods grouped by FODMAP type to be used as a reference during this time.

HOW TO IMPLEMENT THE MAINTENANCE PHASE

- The first step in developing tolerance is to eliminate all aggravating food items that were identified during the *Rest and Test* option. This elimination phase lasts for 1 to 2 months depending upon the severity of the reaction you experienced for each food item.
- Next, with the help of your Practitioner to determine the order, follow the step-wise process detailed below when introducing each food item, so you can establish what your actual tolerance level is based on any response you may experience (Table 4). This then forms the template for your ongoing enjoyment of these food items in future.

Table 4: Implementing the Maintenance Phase.

STEP 1	
Eat the aggravating food 1/7 for four weeks. (Minimum five days apart.)	If an aggravation occurs – eliminate the food again for two weeks before repeating Step 1. If no aggravation occurs during the four weeks of eating it – move to Step 2.
M T W T F S S M	T W T F S S M T W T F S S M T W T F S S
STEP 2	
Eat the aggravating food 2/7 for four weeks. (Minimum three days apart.)	If an aggravation occurs – eliminate the food again for two weeks before repeating Step 2. If no aggravation occurs during the four weeks of eating it – move to Step 3.
M T W T F S S M	T W T F S S M T W T F S S M T W T F S S
STEP 3	
Eat the aggravating food 3/7 for four weeks. (Minimum two days apart.)	If an aggravation occurs – eliminate the food again for two weeks before repeating Step 3. If no aggravation occurs during the four weeks of eating it – maintain at three times a week ongoing.
M T W T F S S M	T W T F S S M T W T F S S M T W T F S S