Information about

Low FODMAP Diet

To improve Irritable Bowel Syndrome (IBS) symptom control

Rationale

Irritable Bowel Syndrome (IBS) is a common functional gastrointestinal (GI) disorder affecting one in seven adults.

IBS is commonly characterised by GI symptoms such as bloating and distension, excess wind (flatulence), abdominal pain and altered bowel habits (diarrhoea and/or constipation).

These symptoms can create anxiety and stress, interfere with busy schedules, and may compromise everyday life.

The underlying pathology of IBS is not well understood and a number of factors may trigger symptoms.

Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols (FODMAPs) are found in the foods we eat. FODMAPs are sugars that are poorly absorbed in the small intestine and reach the large intestine where they produce gas and attract water.

FODMAPs are found in everyday foods including specific dairy products, wheat and other grains, and fruits and vegetables.

It's important to remember FODMAPs are not the cause of IBS, but managing them in the diet provides an opportunity for reducing IBS symptoms.

Studies have shown that ingesting FODMAPs exacerbates symptoms in most people with IBS, while dietary restriction of FODMAPs improves symptom control.

However, if you are experiencing symptoms of IBS it is important not to 'self-diagnose'. Symptoms of IBS can also be seen in other gastrointestinal diseases and disorders and may require medical rather than dietary management. Changing your diet can also mask underlying problems. It is vital that you seek medical advice before changing your diet. Your doctor can assess your symptoms and rule out any other gastrointestinal diseases or more suitable eating plans.

GESA Gastroenterological Society of Australia

dhf Digestive Health Foundation

An information leaflet for patients and interested members of the general public prepared by the Digestive Health Foundation

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Reviewed by:
Dr Jaci Barrett, APD,
Dept of Gastroenterology,
Central Clinical School, Monash University, VIC

Laura Iannelli, BBiomedSci,
MHumNutr, Deakin University, VIC

Emma Halmos, BND, PGradDipBSc, APD
Dept of Gastroenterology, Monash University, Melbourne VIC

What is the Low FODMAP Diet?

The Low FODMAP diet involves many dietary changes that are best reviewed in consultation with an accredited dietitian. However a brief overview and sample meal plan is shown below.

What are FODMAPs?

FODMAPs are a large group of dietary sugars found in many common foods such as specific dairy products, wheat and other grains, and fruits and vegetables.

FODMAPs are found in many foods we commonly eat and is an acronym for:	
Fermentable	
Oligosaccharides	– Fructans and galacto-oligosaccharides (GOS)
Disaccharides	– Lactose
Monosaccharides	– Fructose in excess of glucose
And	
Polyols	– Sorbitol, Mannitol, Maltitol, Xylitol and Isomalt

FODMAPs can be classified into two groups:

- **Those FODMAPs that are partly absorbed (fructose, lactose, polyols)**
- **Those FODMAPs that are not absorbed in anyone (fructans and GOS)**

How do FODMAPs affect people with IBS?

FODMAPs are small in size and will therefore have an osmotic effect (draw fluid) in the gut that results in increased delivery of water through the bowel.

FODMAPs are also poorly absorbed in the small intestine. They continue along the digestive tract to the large intestine where they are fermented by bacteria in the large intestine, which produces gas. The gas production can lead to wind (flatulence), bloating, discomfort and abdominal pain. In addition, the large intestinal gas and increased water delivery can alter 'motility' or movement, which may contribute to diarrhoea and/or constipation.

Do FODMAPs affect everybody?

While FODMAPs are poorly absorbed in all people, those with specific gut disorders such as IBS are thought to experience the uncomfortable symptoms due to the gut being unusually sensitive. Distension or 'stretch' in the large intestine from gas or water can trigger symptoms.

Diagnosis

There is no diagnostic test for IBS. Diagnosis is made on symptoms. It is therefore important to work with medical professionals to exclude other serious GI conditions (e.g. inflammatory bowel disease, coeliac disease and bowel cancer) and also some gynaecological conditions.

TABLE 1: REDUCE FOODS HIGH IN FODMAPs

EXCESS FRUCTOSE	FRUCTANS	LACTOSE	GOS	POLYOLS
Apples	Custard apples	Custard	Chickpeas	Apples
Boysenberry	Nectarines	Condensed milk	Legume beans	Apricots
Figs	White peaches	Dairy desserts	(e.g. baked beans,	Blackberries
Mango	Persimmon	Evaporated milk	kidney beans,	Longon
Pear	Tamarillo	Ice cream	borlotti beans)	Lychee
Tamarillo	Watermelon	Milk	Lentils	Nashi pears
Watermelon	Artichoke	Milk powder	Pistachio nuts	Nectarines
Asparagus	Chicory	Unripened cheeses	Cashews	Peaches
Artichokes	Garlic (and powder)	(e.g. ricotta, cottage,		Pears
Sugar snap peas	Leek	cream, mascarpone)		Plums
Fruit juices	Onion (and powder)	Yoghurt		Cauliflower
Dried fruit	Spring onion (white			Mushrooms
High-fructose corn	part)			Snow peas
syrup	Barley			Isomalt (953)
Honey	Rye			Maltitol (965)
	Wheat			Mannitol (421)
				Sorbitol (420)
				Xylitol (967)

Testing for poor absorption

Hydrogen/methane breath-testing can be used to assess if a person absorbs fructose, lactose and sorbitol effectively. It may also be helpful in tailoring the Low FODMAP Diet.

Breath tests are not essential. A FODMAP restricted diet can be implemented by your dietitian, who can then take you through challenges to determine which of the FODMAP carbohydrates you need to avoid for symptom relief. They will also help you determine your degree of absorption, allowing you to consume small amounts of high FODMAP foods without symptoms..

How do I follow the Low FODMAP Diet?

It is essential to develop a strategy and plan ahead. Work with your dietitian to develop easy and tasty meal plans. Ask for a low FODMAP shopping guide. Maintaining a low FODMAP pantry is key to sustaining a Low FODMAP Diet.

When reducing FODMAPs in the diet it is still important to balance good nutrition with symptom control and eat from the five food groups:

Food Group	per / day
Vegetables	5-7 servings
Bread, cereals, rice, pasta, noodles	4 servings
Fruit	2 servings
Meat, fish, poultry	1-2 servings
Dairy	2-3 servings

Low FODMAP food tips

- Choose colourful fruits low in FODMAPs such as strawberries, bananas, blueberries, grapes, rockmelon, pineapple, oranges and kiwifruit
- Select vegetables such as spinach, carrots, capsicum, eggplant, bok choy, tomatoes, zucchini and potatoes
- Purchase wheat and rye free, all-purpose flour blends that are free of soy
- Select low lactose dairy foods such as ripened cheeses including parmesan and swiss, and lactose-free yoghurt and lactose-free kefir milk
- Select a variety of meats, fish and poultry, and oils
- Choose nuts and seeds low in FODMAPs such as walnuts, almonds, peanuts, pecans, pine nuts, macadamia nuts and sesame seeds.

What are some of the barriers to following a Low FODMAP Diet?

The Low FODMAP Diet is somewhat restrictive but can provide adequate nutrients with careful planning. Your dietitian can ensure that restricted foods are replaced with suitable alternatives. Your dietitian can also advise on the need and suitability of vitamin and mineral supplements.

For people suffering from lactose intolerance, meeting calcium and vitamin D requirements used to be difficult. With the availability of lactose free dairy products, it is much easier to consume adequate calcium by choosing sufficient lactose-free milk; low lactose cheeses such as swiss, cheddar, feta and mozzarella; enriched rice milk; spinach; and canned salmon.

Your doctor and dietitian will advise whether a low FODMAP diet is recommended for you if you have other conditions.

If you do not choose suitable alternative low FODMAP foods, fibre intake can decrease when you follow the Low FODMAP Diet. See Table 2 for good low FODMAP fibre sources.

TABLE 2: FIBRE WITHOUT FODMAPs		
Food	**Portion size**	**Fibre content (grams)**
Oatmeal	1/2 cup – dry	4.1
Oat Bran	1/2 cup – dry	7.2
Rice Bran	1/4 cup – dry	6.2
Strawberries	1 cup – halves	3
Blueberries	1 cup	3.6
Orange	1 medium	3.1
Spinach	1/2 cup – cooked	2.2

One of the most important things to remember when you follow a low FODMAP diet is that FODMAPs are natural prebiotics, i.e. they encourage the growth of good bacteria in the gastrointestinal tract. Studies have shown that ingestion of fructans and GOS can encourage the growth of good bacteria such as bifidobacteria. The long term consequences of a low FODMAP diet needs to be considered.

This is why the diet is only administered strictly during the initial 2-6 week period, until symptoms settle. Reintroduction of small amounts of FODMAPs is essential and can be guided by your dietitian

Is this a lifetime diet?

No. This diet is usually recommended for 2-6 weeks at a time. Progress should be assessed by an accredited dietitian. They will help advise which foods can be gradually re-introduced into your specific diet.

Many people can liberalise the diet and may only need to avoid large amounts of a few high FODMAP foods.

Low FODMAP Diet sample meal plan

Breakfast

- Gluten-free or spelt toast with Vegemite®
- Cereal (oats, porridge, cornflakes)*
- Homemade low FODMAP muesli
- Poached egg and spinach
- Lactose free yoghurt and serve of suitable fruit (e.g. banana)
- Tea or coffee (use lactose-free milk if you have lactose malabsorption).

** Add oat or rice bran for extra dietary fibre.*

Lunch

- Gluten-free or spelt sandwich with fillings (ham/tuna/cheese/egg and salad)
- Sushi or rice paper rolls with suitable fillings
- Frittata
- Homemade soup with low FODMAP vegetables
- Fresh salads with tuna, pine nuts, lemon juice or olive oil
- Gluten-free pizza with low FODMAP vegetables
- 1/2 cup blueberries and lactose-free vanilla yogurt

Dinner

- Grilled chicken, salmon, steak with salad and potatoes
- Lamb shanks with mashed sweet potato, carrots and green beans
- Tofu stir fry with rice noodles, capsicum, carrot, bok choy, ginger, chilli, soy sauce
- Baked potato with skin (butter optional), hard cheese, lean bacon, chives, grated carrot
- Gluten free pasta with sauce (no garlic or onion)
- Risotto with chicken, cherry tomatoes, capsicum, zucchini (use homemade stock)

Safe snacks

- Two rice cakes spread with peanut butter
- Banana, kiwifruit
- Lactose-free yoghurt with blueberries
- Walnuts
- Lactose free milk

Additional Information

- Monash University, Central Clinical School, Department of Gastroenterology
  www.med.monash.edu.au/cecs/gastro
- Monash University Low FODMAP Diet app available from iTunes store

Take home points

- **FODMAPs are sugars commonly found in everyday foods.**
- **Dietary restriction of FODMAPs may improve IBS symptom control.**
- **Speak with your health care professional to ensure other gastrointestinal conditions have been investigated prior to changing your diet.**
- **Work with a dietitian to develop a personal eating, shopping and dining-out plan.**
- **This diet is usually recommended for 2-6 weeks. Once symptoms settle foods may be gradually re-introduced.**
- **A strict low FODMAP diet should NOT be followed long term.**

Digestive Health Foundation

This information leaflet has been designed by the Digestive Health Foundation (DHF) as an aid to people who have been recommended a Low FODMAP Diet or for those who wish to know more about this topic. This is not meant to replace personal advice from your medical practitioner.

The DHF is an educational body committed to promoting better health for all Australians by promoting education and community health programs related to the digestive system.

The DHF is the educational arm of the Gastroenterological Society of Australia (GESA), the professional body representing the specialty of gastrointestinal and liver disease. Members of the Society are drawn from physicians, surgeons, scientists and other medical specialties with an interest in gastrointestinal (GI) disorders. GI disorders are the most common health-related problems affecting the community.

Research and education into gastrointestinal disease are essential to contain the effects of these disorders on all Australians.

Further information on a wide variety of gastrointestinal conditions is available on our website – www.gesa.org.au

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Digestive Health Foundation

Digestive Health Foundation
c/- GESA
PO Box 508, Mulgrave VIC 3170, Australia
Telephone: 1300 766 176 **Facsimile:** (03) 9802 8533
www.gesa.org.au