



# What are FODMAPs? With a Menu Guide

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## What are FODMAPs?

There are several different type of short-chain carbohydrates that make up the FODMAP family. Some foods containing these are:

- **Oligosaccharides:** These comprise fructans (fructo-oligosaccharides or FOS), which are made up of short chains of fructose with a glucose on the end, and galacto-oligosaccharides (GOS), which are short chains of sucrose and galactose units. These oligosaccharides are unable to be digested as humans do not have enzymes to break them down. Hence, they are not absorbed in the small intestine by anyone and, therefore, can cause problems for all patients with IBS.
- **Polyols:** These are sugar alcohols and the most common ones in the diet are sorbitol and mannitol. Because their absorption is slow across the intestinal barrier, only about one-third of what is consumed is actually absorbed. Because of this, sorbitol is often used as a low-calorie sweetener in “sugar free” products, especially candies and chewing gum.
- **Excess fructose:** Fructose is a simple sugar and requires no digestion. However, the absorption of fructose relies on the activity of sugar transporters that are located in the wall of the small intestine. Fructose is absorbed in two different ways, all depending on how much glucose is present in a food. Firstly, if glucose is present in equal or greater amounts than fructose, the glucose seems to piggyback the fructose across the small intestinal barrier. Secondly, if fructose is in excess of glucose, it requires an alternative absorption method. This method of absorption is impaired in some individuals and is the cause of fructose malabsorption. Around 30–40% of healthy and IBS individuals malabsorb excess fructose.
- **Lactose:** Lactose is a disaccharide, made up of two sugar units. It needs to be broken down into individual sugar units by an enzyme called *lactase* prior to absorption. Hence, lactose is only a FODMAP when there are insufficient levels of *lactase*, which can be influenced by factors such as genetics, ethnicity (almost 100% of Asians and American Indians have low lactase levels) and many gut disorders.

## High FODMAP containing foods

Excess fructose	Lactose	Fructans (fructo-oligosaccharides) & Galacto-oligosaccharides	Polyols	
			Sorbitol	Mannitol
<b>Fruits:</b> Apples, cherries, mango, pears, tinned fruit in natural fruit juice, watermelon, large quantities of fruit juice or dried fruit	<b>Milk &amp; Yogurts:</b> Regular and low fat milk and yogurts	<b>Grains:</b> Rye and rye products (e.g. rye bread, rye crackers); Wheat and wheat products (e.g. wheat bread, pasta, couscous, wheat bran)	<b>Fruits:</b> Apples, apricots, pears, blackberries, nectarines, plums  <b>Beverages:</b> Apple and pear juice	<b>Vegetables:</b> Cauliflower, mushrooms, snow peas  <b>Fruits:</b> Watermelon

<p><b><u>Vegetables:</u></b> Asparagus, artichokes, sugar snap peas</p> <p><b><u>Sugars:</u></b> Honey, high fructose corn syrup</p>	<p><b><u>Dairy Products:</u></b> Soft cheeses (e.g. ricotta, cottage, cream cheese); custard, ice-cream</p>	<p><b><u>Fruits:</u></b> Peaches, persimmon, watermelon</p> <p><b><u>Vegetables:</u></b> Artichokes, legumes (e.g. baked beans, lentils, red kidney beans); onion and garlic and garlic salts etc.</p> <p><b><u>Others:</u></b> Inulin (often called fiber in nutritional supplements and products)</p>	<p><b><u>Sweeteners:</u></b> Sugar-free gums, hard candies and chocolates containing sorbitol, mannitol, xylitol isomalt, maltitol</p>
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**Menu guide for a low FODMAP diet (avoid using High FODMAP ingredients listed above)**

<b><i>Breakfast</i></b>	<ul style="list-style-type: none"> <li>• Gluten-free or spelt toast with spread (sucrose sweetened, <i>not</i> with fructose)</li> <li>• Cereal (e.g. oats, Corn Flakes, Rice Krispies)</li> <li>• Tea or coffee (if you have lactose malabsorption, use lactose-free milk)</li> <li>• Serve of suitable fruit</li> <li>• Poached eggs and spinach</li> </ul>
<b><i>Lunch</i></b>	<ul style="list-style-type: none"> <li>• Gluten-free or spelt sandwich with fillings (e.g meat, salad, cheese)</li> <li>• Frittata</li> <li>• Homemade soup with low FODMAP vegetables</li> <li>• Green salad with dressing (olive oil, lemon juice) with tuna</li> <li>• Roast pumpkin, goats cheese &amp; quinoa salad</li> </ul>
<b><i>Dinner</i></b>	<ul style="list-style-type: none"> <li>• Meat or fish with low FODMAP vegetables or salad</li> <li>• Baked fish with middle eastern vegetable quinoa</li> <li>• Roast chicken with rosemary infused vegetables and brown rice</li> <li>• Gluten free pizza base topped with cherry tomatoes, basil, goats cheese, ham and pineapple</li> </ul>
<b><i>Snacks &amp; sweets</i></b>	<ul style="list-style-type: none"> <li>• Serve of suitable fruit</li> <li>• Yogurt (if you have lactose malabsorption, use lactose-free yogurt)</li> <li>• Rice cakes with feta</li> <li>• Gluten-free biscuits</li> <li>• Berry crumble</li> </ul>

For more information, visit <http://www.med.monash.edu/cecs/gastro/fodmap/>.

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