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## Irritable Bowel Syndrome (IBS) Diet Avoiding the FODMAP

- FODMAP are a group of sugars present in food as well as in artificial sweeteners. These sugars are poorly digested in the intestines, and end up being broken down by the bacteria in our gut, generating gas (hence bloating and distention) and creating an osmotic load in the gut lumen. The osmotic load results in water being pulled into the gut lumen, contributing to loose bowel movements.
- *In patients suffering with IBS, a FODMAP-poor diet has been found to cause less distention of the bowel and hence less bloating, abdominal pain and flatulence (passage of gas). The reverse is also true, a diet rich in FODMAP could result in more gas being generated by the bacteria in the gut, and hence more symptoms in individuals with a sensitive gut such as patients with IBS (J. Hum. Nutr. Diet 2011;24:487-495).*
- FODMAP is an acronym for its constituents:
  - F=Fermentable sugars:
  - O=Oligosaccharides
  - D=Disaccharides
  - M=Monosaccharides
    - As a group, the saccharides are sugars that are divided by the number of sugar molecules they contain. When the saccharide is made up of one sugar molecule, it is called a monosaccharide, while a two sugar molecule-containing saccharide is a disaccharide. A saccharide containing a few sugar molecules attached together is an oligosaccharide.
  - P=Polyols: This category includes most artificial sweeteners whose names end in “ol” such as sorbitol, mannitol, maltitol and xylitol. Part of the polyol molecule resembles sugar and the other part resembles alcohol, as such polyols are also known as sugar alcohol.
- A diet low in FODMAP could be attained by ***eliminating*** the following:
  - Fructose containing products: Apple, mango, watermelon, all fruits canned in natural juices, fructose, and high fructose corn syrup, dried fruits, fruit juices, and honey.
  - Lactose containing products: Milk of animal origin, ice cream, yogurt, soft unripened cheeses (cottage, cream, mascarpone and ricotta).

- Fructans: Present in vegetables such as asparagus, beetroot, broccoli, Brussels sprout, cabbage, eggplant, fennel, garlic, leek, okra, all onions and shallots. Also present in cereals such as wheat and rye in breads, crackers, cookies and pasta. Fructans are also present in fruits such as custard apple, persimmons and watermelon as well as in products such as chicory, dandelion and inulin.
- Galactans: This family of products includes baked beans, chickpeas (humus), kidney beans and lentils.
- Polyols: Present in fruits including apple, apricot, avocado, blackberry, cherry, lychee, nectarine, peach, pear, plum, prune and watermelon. Polyols are also present in vegetables such as cauliflower, bell pepper, mushroom and sweet corn. Artificial sweeteners are also rich in polyols and include sorbitol (chewing gum), mannitol, isomalt, maltitol and xylitol.
- To substitute for the above, the following list of food items are considered low in FODMAP:
  - Fruits: Banana, blueberry, boysenberry, cantaloupe, cranberry, grape, grapefruit, honeydew, melon, kiwifruit, lemon, lime, mandarin, orange, passionfruit, raspberry, rhubarb, rockmelon, star anise, strawberry and tangelo. It is best to **avoid** consuming more than small quantities of the **dried version** of the above fruits.
  - Vegetables: Alfalfa, artichoke, bamboo shoots, bean shoots, bok choy, carrot, celery, choko, choy sum, endive, ginger, green beans, lettuce, olive, parsnip, potato, pumpkin, red bell pepper, silver beat, spinach, summer yellow squash, swede, sweet potato, tomato, turnip, yam and zucchini.
  - Herbs: Basil, chili, coriander, ginger, lemongrass, marjoram, mint, oregano, parsley, rosemary and thyme.
  - Cereal: Gluten-free bread and cereal products.
  - Bread: 100% spelt bread.
  - Rice.
  - Oats.
  - Polenta.
  - Olive oil in place of butter.
  - Other products: Arrowroot, millet, psyllium, quinona, solegum and tapioca.
  - Milk products: Lactose-free milk and yogurt, rice milk and additive free oat milk and soy milk. Hard cheeses, brie and camembert.
  - Ice cream: Sorbet and gelati.
  - Sweeteners: Sugar (in small quantities), glucose, artificial sweeteners not ending in ‘-ol’. Replace honey with molasses and treacle. Golden syrup and maple syrup in small quantities is also OK.

The contents have been adapted from [ibsgroup.org](http://ibsgroup.org) and other sources.