

The High Fiber Diet

Dietary fiber is the part of a plant that cannot be digested by the body. Just as there are many types of plants, there are also many types of fiber. Some fibers, such as oat bran, are soluble in water and form a gelatinous bulk that can lower cholesterol. Other fibers, such as wheat bran, are insoluble and add bulk to the stool. Both are important and provide benefits.

The Function of the Large Intestine

The principal function of the large intestine (colon) is to remove excess water from food wastes passing into it from the small intestine. When food passes through the large intestine too quickly, not enough water is absorbed by the intestine, and diarrhea results. In contrast, if waste material is passed too slowly, too much water is absorbed. This results in hard stools and constipation, often leading to straining.

The Importance of Dietary Fiber

Fiber, also called roughage or bulk, is necessary to promote the wavelike contractions that move food through the intestine. High fiber foods expand the inside walls of the colon, easing the passage of waste. As fiber passes through the intestine undigested, it absorbs large amounts of water, resulting in softer and bulkier stools.

Rural Africans digest and eliminate the foods they eat in one-third the time it takes people who live in Western cultures. The rural African diet is rich in fiber. This speeds up the time required to digest food and expel wastes. It is believed this helps sweep out harmful substances before they can cause problems in the body. In fact, these rural people suffer less from many of the digestive tract diseases that plague Western man, and it is thought that this may be related to the nature of their diet.

A high-fiber diet causes a large, soft, bulky stool that passes through the bowel more easily and quickly. This helps to prevent, stop, or even reverse some digestive tract disorders. A softer, larger stool helps prevent constipation and straining, which can help avoid or relieve hemorrhoids. More bulk means less pressure in the colon, and this is important in treating irritable bowel syndrome and diverticulosis.

Most Americans eat only 10 to 15 grams of fiber a day. The recommended intake is 20 to 35 grams a day. High fiber foods, such as fruits and vegetables, also tend to be low in calories, so they should not cause weight gain. Fiber pills are not as effective. They contain relatively little fiber and are expensive. Powdered fiber supplements are better sources of fiber.

High Fiber Diet in the Irritable Bowel Syndrome

Irritable bowel syndrome, sometimes called spastic colon or IBS, is one of the most common disorders of the lower digestive tract. There is no disease present in irritable bowel syndrome. However, its symptoms can resemble other disorders. The symptoms of IBS are constipation, diarrhea (or both alternately), abdominal pain, cramping and spasms. Acute episodes can be triggered by emotional tension and anxiety, poor dietary habits, and certain medications. Increased amounts of fiber in the diet can help relieve symptoms of irritable bowel syndrome by producing soft, bulky stools and by helping to normalize the time the stool takes to pass through the colon. The increased bulk also reduces the pressure necessary to push food waste through the colon. This results in less discomfort.

High Fiber Diet and Colon Polyps/Cancer

Colon cancer is a major health problem. It is second only to lung cancer in the number of deaths per year. In countries where grains are unprocessed and retain their fiber, there is a lower incidence of colon cancer. Most colon cancer begins as a colon polyp, a benign mushroom-shaped growth which in time grows and, in some people, becomes a cancer. Colon cancer is preventable if polyps are removed at an early stage. It is now known that the tendency to develop colon cancer may be inherited. But, there may be other factors involved as well. One theory is that cancer-causing chemicals (carcinogens) in the diet and environment can stay in contact with the colon wall a longer time and in higher concentrations when the diet is low in fiber. A large, bulky stool acts to dilute and diffuse these carcinogens and to move them through the bowel more quickly. Less carcinogen exposure to the colon may mean less colon polyps and cancer.

High Fiber Diet and Diverticulosis

Colon diverticulosis occurs when pockets or sacks bulge out from the bowel wall. It is known that these diverticula occur gradually over time and are due to excessive pressure or spasms within the bowel. These pockets usually cause no problem, but sometimes they can become infected (diverticulitis) or even break open, causing abscess or peritonitis. A high-fiber diet may act to increase the bulk in the stool, which reduces pressure within the colon. By so doing, diverticula formation may be reduced or even stopped.

High Fiber Diet and Cholesterol

As noted above, fiber generally is divided into two categories. *Insoluble* fiber is found in wheat bran and in celluloses from vegetables and fruits. *Soluble* fiber is commonly found in oatmeal, oat bran (the best source), guar gum, psyllium seed, fruit pectin and gum arabic. When mixed with water, it produces a gelatinous mucous gel. It, too, has bowel-regulating effects. It also acts to lower blood cholesterol by binding with the cholesterol in the intestine and carrying it away in the stool. So, a high fiber diet should contain both types of fiber.

High Fiber Foods

High fiber foods can be found in most food groups. Different types of food should be selected to get the benefits of them all.

1. Legumes-Including kidney, pinto, navy, lima and baked beans. The bean family excels in fiber, especially the soluble, cholesterol-lowering type.
2. Whole Grains-Wheat bran and oat bran are present in a variety of cereals and breads. The label should say that the bread contains whole wheat or whole grain. Plain wheat bread may lack the fiber. One cannot always tell by the color. Some manufacturers artificially color bread brown to make it look more wholesome.
3. Whole Fresh Fruits-The valuable pectin fiber is found in the skin and pulp. Figs, prunes and raspberries have the highest fiber content.
4. Cooked or Stewed Fruits-Prunes and applesauce are good choices.
5. Green Leafy Vegetables-Lettuce, spinach, celery, and broccoli are good examples.
6. Root Vegetables-Potatoes, turnips and carrots are all excellent sources.

A sudden increase in fiber intake may cause rumbling intestinal gas and even some cramping, so fiber should be started in small amounts initially. The amount can be increased as tolerance is acquired. The goal should be 20 to 35 grams of fiber a day, which will usually produce 1 to 2 soft, formed stools a day.

The following are good general rules:

1. Drink plenty of liquids, including fruit or vegetable juices and water.
2. Eat slowly and chew food thoroughly to allow the upper digestive tract (esophagus, stomach and small intestine) to work well. This may help prevent problems from developing in the lower digestive tract.
3. Eat meals at regular intervals.

A Dietary Fiber Supplement May Be Helpful

Some people have trouble tolerating too many high fiber foods in the diet. Stool softening and bulking agents are available over the counter. These products are usually plant fiber that absorbs water and produces the bulk necessary for the digestive tract to perform naturally. Psyllium fiber is found in many commercial products such as Metamucil, Per Diem and Konsyl. The regular product may contain a fair amount of sugar, so it may be preferable to use the sugar-free products. Most pharmacies carry a generic brand at significant cost savings. Citrucel (hemicellulose) and Equilactin (polycarboxisal) are other bulking agents that can be used. These fiber supplements, in conjunction with foods, offer an easy way to reach the fiber goal of 20 to 35 grams per day.

Fiber Content of Foods

Goal - 20 to 35 grams per day

Common servings of foods containing dietary fiber are shown below. A variety of foods should be chosen every day. Foods that are good sources of fiber are typically low in fat and calories.

serving size		grams of dietary fiber	serving size		grams of dietary fiber
	BREADS			VEGETABLES	
1 medium	bran muffin	3	1/2 cup	cooked green beans	2
1 slice	whole wheat bread	2	1/2 cup	Brussels sprouts	2
1 slice	white bread	1	1/2 cup	cooked eggplant	2
1 slice	pumpnickel bread	1	1/2 cup	cooked broccoli tops	3
1 slice	rye bread	1	1/2 cup	cooked young carrots	3
1 slice	raisin bread	<1	1/2 cup	cooked corn	3
4 squares	saltines	0	1/2 medium	fresh avocado	2
	CEREALS AND PASTA			LEGUMES	
1 ounce	Kellogg's All-Bran Extra Fiber	14	1/2 cup	kidney beans	9
1 ounce	General Mills Fiber One	12	1/2 cup	baked beans	7
1 ounce	Kellogg's All-Bran	9	1/2 cup	navy beans	5
1 cup	whole wheat pasta	5	1/2 cup	pinto beans	5
1 ounce	Kellogg's Bran Flakes	4	1/2 cup	lentils	2
1 ounce	Post Fruit and Fiber	4			
1.4 ounces	Kellogg's Raisin Bran	4			
1 ounce	Nabisco Shredded Wheat'n Bran	4	serving size		grams of dietary fiber
1 ounce	oatbran	4			
1 ounce	General Mills Raisin Nut Bran	3		FRUITS AND NUTS	
1 ounce	General Mills Cheerios	2	3.5 ounces	dried figs	18
1 ounce	Post Grape-Nuts	2	3.5 ounces	prunes	8
1 ounce	oatmeal	2	3.5 ounces	raspberries	7
1 cup	popcorn	2	1/4 cup	almonds	5
1 ounce	General Mills Total	2	1 medium	apple (with skin)	3
1 ounce	General Mills Wheaties	2	1 medium	banana	3
1 cup	pasta	<1	1/2 cup	blackberries	3
1 ounce	Kellogg's Corn Flakes	<1	5	dried dates	3
1/2 cup	cooked brown rice	<1	1 medium	nectarine	3
1/2 cup	cooked white rice	<1	1 medium	peach (with skin)	3
1/2 cup	egg noodles	0	1 medium	peach (with skin)	3
			1/4 cup	roasted peanuts	3
serving size		grams of dietary fiber	1 cup	strawberries	3
	VEGETABLES		1/4 cup	cantaloupe	2
1/2 medium	cooked sweet potato	2	10 medium	olives	2
1/2 cup	raw cabbage	2	1 medium	orange	2
1/2 cup	raw bean sprouts	1	2 tablespoons	smooth peanut butter	2
1/2 cup	raw lettuce	1	1 medium	tangerine	2
1/2 cup	sliced raw mushrooms	1	1/4 cup	walnut pieces	2
1 medium	dill pickle	1	1 medium	apricot	1
1/2 cup	mashed potatoes	1	10 large	cherries	1
10 medium	French fried potatoes	1	1/2 medium	grapefruit	1
1/2	fresh tomato	1	1/2 cup	pineapple	1
1 stalk	raw celery	<1	2 tablespoons	raisins	1
6 slices	raw cucumber	<1	2 medium	plums	<1
2 rings	green pepper	<1	1/2 cup	orange juice	0
1/2 cup	raw onions	<1			
1/2 cup	cooked frozen peas	4			
1 medium	baked potato (with skin)	4			