

The High Fiber Diet

Dietary fiber is the undigested plant residue that passes through the intestinal tract. Just as there are many types of plants, there are also many types of fiber. Fiber may be soluble (oat bran, psyllium) and form a gelatinous bulk which has cholesterol-lowering properties. Or it may be insoluble (wheat and other grains) which adds 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 complete digestion by removing excess water from food wastes passing into it from the small intestine. When food passes through the small intestine too quickly, not enough water is absorbed and diarrhea results. In contrast, if waste material is passed to 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 thorough 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 many times its weight in water, resulting in softer and bulkier stools.

Studies have shown that rural Africans, whose diets are rich in fiber, eliminate food waste in one third the time it takes urban, Westernized people to do so, and have larger and softer stools. Because of this greater bulk and faster transit time (the time required to digest food and expel wastes), it is believed that harmful substances are also swept out before they can cause problems. 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 nature of their diet.

A high-fiber diet causes a large, soft, bulky stool that passes through the bowel easily and quickly. Because of the elimination-easing action, some digestive tract disorders may be avoided, halted or even reversed. 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 10 to 15 grams of fiber a day, whereas 20 to 35 grams are recommended. High fiber foods, such as fruits and vegetables, also tend to be low in calories, so weight gain should not be a problem. Fiber pills generally should not be taken as they contain relatively little fiber and are expensive compared to fiber-containing foods and powder supplements.

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 process present in irritable bowel syndrome, but it can resemble other disorders: altered bowel habits (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 helping to normalize the time the stool takes to pass through the colon. The increased bulk also reduces the pressure necessary to push food wastes through the colon, resulting in less discomfort.

If irritable bowel syndrome is not treated it may lead to diverticulosis of the colon.

High Fiber Diet and Colon Polyps/Cancer

Colon cancer is a major health problem. Countries in which grains are unprocessed and retain their fiber have a low 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 curable if polyps are removed at an early stage. It is now known that heredity plays an important role in who develops colon cancer; however, there may be other factors involved as well. One theory is that cancer-causing chemicals (carcinogens) in the diet and environment remain in contact with the colon wall a longer time and in higher concentration when the diet is low in fiber. However, 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 Diverticulitis

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

High Fiber and Cholesterol

As noted above, fiber generally is divided into two categories. Insoluble fiber is that found in wheat bran and in celluloses from vegetables and fruits. Soluble fiber is commonly found in oatmeal, oat bran (the best), gaur gum, psyllium seed, fruit pectin and gum arabic. When mixed with water, it produces a gelatinous mucous gel. It, to, has bowel-regulating effects. It also acts to lower blood cholesterol by binding with the cholesterol (which comes from the liver) and carrying it away in the stool. So a high fiber diet should contain soluble fiber, Oat bran cereal and breads are ready sources.

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-The bean family excels in fiber, especially the soluble, cholesterol-lowering type. They include kidney, pinto, navy, lima and baked beans.
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.

Since bran can cause rumbling intestinal gas and even some mild cramping, it should be ingested 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 juice and water.
2. Eat slowly and chew food thoroughly to allow the organs of the upper digestive tract (the esophagus, stomach and small intestine) to perform their jobs 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 don't tolerate excessive fibrous foods well. Stool softening and bulking agents are available. These products are plant fiber that absorb water and produce 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 contains a fair amount of sugar, so it may be preferable to use the sugar-free substitutes. 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, are a readily available way to reach the fiber goal of 20 to 35 grams per day.

Fiber Content of Foods - Goal – 20 to 35 grams per day

Serving Size	Foods	Grams of dietary fiber
Breads		
1 medium	bran muffin	3
1 slice	whole wheat bread	2
1 slice	white bread	1
1 slice	pumpernickel bread	1
1 slice	raisin bread	<1
4 squares	saltines	0
Cereals and Pastas		
1 ounce	Kellogg's All Bran Extra Fiber	14
1 ounce	General Mills Fiber One	12
1 ounce	Kellogg's All Bran	9
1 cup	whole wheat pasta	5
1 ounce	Kellogg's Bran Flakes	4
1 ounce	Post Fruit and Fiber	4
1.4 ounces	Kellogg's Raisin Bran	4
1 ounce	Nabisco Shredded Wheat'n Bran	4
1 ounce	oatbran	4
1 ounce	General Mills Raisin Nut Bran	3
1 ounce	General Mills Cheerios	2
1 ounce	Post Grape-Nuts	2
1 ounce	oatmeal	2
1 cup	popcorn	2
1 ounce	General Mills Total	2
1 ounce	General Mills Wheaties	2
1 cup	pasta	<1
1 ounce	Kellogg's Corn Flakes	<1
½ cup	cooked brown rice	<1
½ cup	cooked white rice	<1
½ cup	egg noodles	0
Legumes		
½ cup	kidney beans	9
½ cup	baked beans	7
½ cup	navy beans	5
½ cup	pinto beans	5
½ cup	lentils	2
Vegetables		
½ cup	cooked frozen peas	4
1 medium	baked potato (with skin)	4
½ cup	cooked broccoli tops	3
½ cup	cooked young carrots	3
½ cup	cooked corn	3
½ medium	fresh avocado	2
½ cup	cooked green beans	2
½ cup	brussel sprouts	2
½ cup	cooked eggplant	2
½ medium	cooked sweet potato	2
½ cup	raw cabbage	2
½ cup	raw bean sprouts	1
½ cup	raw lettuce	1

Fiber Content of Foods - Goal – 20 to 35 grams per day

Serving Size	Foods	Grams of dietary fiber
<u>Vegetables Continued</u>		
½ cup	sliced raw mushrooms	1
1 medium	dill pickle	1
½ cup	mashed potatoes	1
10 medium	French fried potatoes	1
½	fresh tomato	1
1 stalk	raw celery	<1
6 slices	raw cucumber	<1
2 rings	green pepper	<1
½ cup	raw onions	<1
<u>Fruit and Nuts</u>		
3.5 ounces	dried figs	18
3.5 ounces	prunes	8
3.5 ounces	raspberries	7
¼ cup	almonds	5
1 medium	apple (with skin)	3
1 medium	banana	3
½ cup	blackberries	3
5	dried dates	3
1 medium	nectarine	3
1 medium	peach (with skin)	3
¼ cup	roasted peanuts	3
1 cup	strawberries	3
1	pear (with skin)	2
¼	cantaloupe	2
10 medium	olives	2
1 medium	orange	2
2 tablespoons	smooth peanut butter	2
1 medium	tangerine	2
¼ cup	walnuts pieces	2
1 medium	apricot	1
10 large	cherries	1
½ medium	grapefruit	1
½ cup	pineapple	1
2 tablespoons	raisins	<1
½ cup	orange juice	0