



Facts of Fiber

Dietary fibers are indigestible complex carbohydrates found in walls of plant cells. Fiber is resistant to the body's digestive enzymes. While it supplies no nutrients or calories, fiber performs many important biological functions.

Types of Fiber

There are two types of dietary fiber: soluble and insoluble. Insoluble fiber is not soluble in water. Components include lignin, cellulose, and hemicellulose. Soluble fiber is soluble in water, and components include pectin, gum, and mucilage.

Sources of Fiber

Fiber is found in plant foods, including fruits, vegetables, whole grains, and beans. Many products list total dietary fiber in grams, which includes both insoluble and soluble fiber. Most foods have more insoluble (50-75%) than soluble fiber (25-30%). Oat bran, barley, kidney beans, and black-eyed peas contain more soluble fiber than foods such as wheat bran, brown rice, lettuce, and spinach.

Positive Effects of Fiber

- Soluble fiber decreases blood cholesterol levels, and therefore, reduces the risk of heart disease. Research indicates that soluble fiber binds to bile acids in the intestines, causing them to be eliminated. Since fewer bile acids are available, the liver draws cholesterol from the bloodstream to make more. This reduces the level of blood cholesterol. Also, a diet high in fiber is usually low in fat, which helps prevent heart disease.
- Soluble fiber can help stabilize blood sugar levels in persons with diabetes by delaying stomach emptying. This slows the rate of carbohydrate absorption, improves regulation of blood sugar, and lowers insulin requirements.

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- The water-holding capacity of fiber helps soften stools and prevents constipation, provided that you drink enough fluids. The amount of fiber required to prevent constipation varies among individuals.
- Fiber, particularly insoluble fiber, may decrease the risk of colon cancer by increasing the speed of elimination. This reduces the amount of time harmful carcinogens (cancer-causing substances) are in contact with the intestinal cells. Also, stool contents, including carcinogens, become diluted and less harmful.
- Fiber increases satiety (the feeling of fullness) by adding bulk to foods without additional calories. This may reduce the risk of obesity and the severity of diabetes.
- A high-fiber diet may reduce the risk of diverticulosis by decreasing the pressure within the colon and the formation of diverticulosis.
- A high-fiber diet may reduce the risk of hemorrhoids by decreasing the straining associated with stool elimination.

Recommended Intake

The average American intake of total dietary fiber is 12-18 grams per day for women and men, respectively. The recommended dietary fiber intake is 14g per 1,000 calories consumed. This can be achieved by eating more beans, vegetables, fruits, and whole grain breads and cereals. A gradual increase is recommended to minimize the side effects of fiber, such as intestinal gas. Remember also to increase your fluid intake as you increase your fiber intake.

To learn more about fiber please visit www.snac.ucla.edu.



Fiber Facts

WHAT YOU NEED TO KNOW ABOUT FIBER

Health professionals agree that we need to increase our fiber intake. Begin by making gradual changes in your diet. Try substituting whole grain breads and cereals for white bread and refined cereals. Also, select at least two servings of fruits and three servings of vegetables daily. As with other health-related issues, there is controversial data associated with fiber. Some of these topics and issues are presented below.

Oat Bran

Oat bran has received a lot of attention recently for its positive health effects. The fact is that oat bran is beneficial, not because it has magical properties, but because it is an excellent source of fiber. 50% of the fiber in oat bran is soluble, which is the type of fiber that helps lower blood cholesterol levels. Most foods have only 25% of their fiber in soluble form and, therefore, are not as effective in lowering cholesterol levels. Beans and other legumes, barley, and some fruits and vegetables are also excellent and inexpensive sources of soluble fiber.

Fiber Supplements

A physician or other health professional should be consulted before you take any type of supplement. Many over-the-counter fiber supplements are available under a variety of different names. Originally promoted for reducing constipation, many are also now advertised as beneficial for reducing blood cholesterol levels. While these benefits from fiber supplements are attractive, the high cost and lack of nutritional value make them a second choice to a good diet. Most fiber pills actually contain little fiber and no other nutrients. It is much better to receive fiber from whole foods, which also provide vitamins, minerals, and phytochemicals. Also, fiber does bind with some minerals, and eating foods, instead of taking a supplement, replaces lost minerals.

Side Effects

Cramping, diarrhea, and intestinal gas are some of the problems associated with a sudden increase in fiber intake. Gradually increasing your fiber intake over a period of six to eight weeks can minimize undesirable effects. Some individuals may experience discomfort even with a gradual intake. These side effects usually disappear within a few days after the body has become accustomed to a high-fiber diet. Also, increasing your water intake can help reduce negative side effects. An excessive fiber intake can cause fiber to bind with certain essential minerals and cause them to be eliminated instead of absorbed into the bloodstream. While it is difficult to receive too much fiber from foods, an overuse of supplements could result in an extremely high and dangerous level of fiber intake.



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Fiber Content of Selected Foods

The fiber content of foods is difficult to determine. Recently, methods have improved and data is slowly becoming available. The chart below lists the approximate fiber value (in grams) for some items. Please use this chart as a guide. Values may differ greatly depending on which books are referenced. Certain foods do not contain fiber, including meat, poultry, seafood, milk, and fats. Other foods contain various amounts of fiber. The recommended intake of total dietary fiber is 25-40 grams per day.

	Portion Size	Total Dietary Fiber	Soluble Fiber	Insoluble Fiber
Fruits				
Apple (with skin)	1 medium	2.8	1.0	1.8
Banana	1 small	2.0	0.4	1.6
Figs, dried	3	4.6	2.0	2.6
Orange	1 small	1.8	0.3	1.5
Pear	1 medium	4.1	1.0	3.1
Strawberries	1 cup	2.8	1.0	1.8
Vegetables & Legumes				
Broccoli, cooked	1/2 cup	3.2	1.0	2.2
Carrots, cooked	1/2 cup	2.8	1.0	1.8
Corn, cooked	1/2 cup	3.9	1.5	2.4
Green Beans, cooked	1/2 cup	1.2	0.4	0.8
Kidney Beans, cooked	1/2 cup	7.0	3.0	4.0
Peanut Butter	2 Tbsp.	2.4	0.2	2.2
Peas, cooked	1/2 cup	4.3	2.0	2.3
Potato, baked (with skin)	1 medium	4.7	2.0	2.7
Potato Chips	1 oz.	0.6	0.1	0.5
Grains				
Bran Cereal	1/3 cup	8.5	3.0	5.5
Bread, white	1 slice	0.7	0.3	0.4
Bread, whole wheat	1 slice	1.5	0.3	1.2
Cornflakes	1 cup	2.7	0.2	2.5
Graham Crackers	2 each	2.8	0.5	2.3
Oat Bran, dry	1/3 cup	4.2	2.0	2.2
Oatmeal, cooked	2/3 cup	3.0	2.0	1.0
Raisin Bran	1 cup	4.0	1.0	3.0
Rice, brown	1 cup	2.4	0.4	2.0