

Fiber: Are You Bulking Up on the Benefits?

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You may have heard you should eat more fiber, but do you know why? Fiber, in adequate amounts, decreases the risk for heart disease, supports blood sugar management, improves digestive health, and contributes to weight management.

What is Dietary Fiber?

Fiber is a type of carbohydrate found in foods that come from plants. We cannot digest or absorb this type of carbohydrate in the gut. Some fiber is fermented by bacteria in the large intestines. Fiber can be found in four of our five food groups. These include fruits, vegetables, grains, and protein foods such as nuts, seeds, beans, and legumes.

Types of Fiber

There are two groups of fiber: soluble and insoluble. However, within each of these main categories there are many types.

- **Soluble fiber** dissolves in water to form a gel, which slows the emptying of the stomach. Fruits, oats, beans and peas are food examples of soluble fiber.
- **Insoluble fiber** does not dissolve in water but holds water, making the stool bulky. Whole grains and skins of produce are two sources of insoluble fiber.

Within the categories of soluble and insoluble fiber, different classes of fibers exist. Examples of soluble fiber include mucilage, inulin, pectin and gums, and psyllium. Insoluble fiber includes cellulose and lignin. You may see these words on ingredients lists for packaged foods or fiber supplements.

You may also see fiber classified as viscous and nonviscous or fermentable and nonfermentable. Viscous fiber forms a gel in water. Fermentable fiber is digested by the bacteria in the large intestines.

Health Benefits

The science that supports fiber as a part of a healthy diet continues to grow. We know that fiber plays a key role in several aspects of overall health, disease prevention, and management.

Heart Disease

Studies have found that those who regularly consume dietary fiber reduce their risk for heart disease. In the gut, fiber traps LDL cholesterol and bile and removes them from the body. The liver is forced to take cholesterol from the blood to make more bile. In this way, the amount of cholesterol in the blood is reduced, which protects heart health. Soluble fiber also helps to keep blood pressure low. By both reducing the amount of cholesterol in the blood and keeping blood pressure down, dietary fiber reduces overall risk for heart disease.

Gut Health

Insoluble fiber attracts water and adds bulk to the stool. This bulk helps move food through the intestines more quickly, helping with bowel movements and reducing constipation. Cereal fiber is the most effective in improving gut health.

Some types of fermentable fiber (such as lactulose) may support the healthy bacteria in the gut and function as a prebiotic. This increase in healthy bacteria seems to reduce symptoms in those with inflammatory bowel disease, Crohn's disease, and ulcerative colitis.

Cancer Prevention

Insoluble fiber may also help prevent colon cancer. Insoluble fiber causes stool to move through the large intestines, also known as the colon, quickly. This increases how fast waste is removed from the body, reducing the amount of time the gut may be exposed to toxins.

Weight Management

Meals high in fiber require more chewing and may take longer to eat, which sends signals to the brain that you are feeling full. High-fiber foods also stay in the stomach longer, making one feel full longer. Together, these effects of dietary fiber may support weight management.

Diabetes

Soluble fibers, especially those found in oats and barley foods, seem to delay the emptying of the stomach and the absorption of glucose. This slows down the rise of blood sugar after a meal and may even decrease the amount of insulin needed to maintain ideal blood glucose levels.

Daily Recommendations

According to the Dietary Guidelines for Americans, more than nine out of 10 American adults do not meet their daily recommendations for dietary fiber. Generally, women need 25 grams of fiber each day, while men need 38 grams. Children should also be eating fiber. For children from one to 13 years of age, the recommendation ranges from 14–25 grams each day. Youth between 14 and 18 years of age should aim for the same intake as adult men and women.

While fiber recommendations may seem high for some, consider the list in Table 1 of high-fiber foods and how they can fit into your dietary pattern.

If you are interested in adding more fiber to your diet, slowly add fiber over time to allow your gut to adjust. Those who add fiber too quickly may experience gas, bloating, and mild cramping. It is also important to add water to the diet when adding more fiber. This makes it easier for the fiber to do its job and may reduce discomfort.

Table 1. Common food sources of dietary fiber.

Food	Portion Size	Fiber (grams)
Fruits		
Raspberries	1 cup	8.0
Blackberries	1 cup	7.6
Asian pear	1 medium	6.5
Grapefruit	1 fruit	5.0
Apple (with skin)	1 medium	4.8
Orange	1 medium	3.7
Banana	1 medium	3.2
Strawberries	1 cup	3.0
Vegetables		
Lima beans (white), cooked	1 cup	13.2
Brussels sprouts	1 cup	6.4
Sweet potato	1 medium	6.3
Winter squash	1 cup	5.7
Broccoli	1 cup	5.2
Carrots	1 cup	4.8
Grains		
Ready-to-eat cereal, high fiber, unsweetened	½ cup	14.0
Popcorn	3 cups	5.8
Ready-to-eat cereal, bran flakes	¾ cup	5.5
Whole wheat crackers	1 ounce	2.9
Whole wheat tortilla	1 ounce	2.8
Protein		
Navy beans	½ cup	9.6
Pinto beans	½ cup	7.7
Black beans, cooked	½ cup	7.5
Whole pumpkin seeds	1 ounce	5.2
Chia seeds	1 tablespoon	4.1
Almonds	1 ounce	3.5
Sunflower seeds	1 ounce	3.1

Source: U.S. Department of Agriculture, Agricultural Research Service. FoodData Central, 2019.

Choosing High-Fiber Foods

Dietary fiber is often found on Nutrition Facts labels. If dietary fiber is not listed, then it is easy to know it is not a high-fiber food. Dietary fiber reflected on the Nutrition Facts label includes both naturally occurring fiber in the item as well as fiber that has been added to the food or drink.

Since it is often listed on food packages in grams, it is easy to compare items when looking for high-fiber options. A general rule of thumb is to look for foods with three or more grams of fiber per serving. Foods that have five or more grams of fiber per serving are considered excellent sources.

Satisfying Daily Fiber Requirements

Here are some examples of how to add common high-fiber options referenced in Table 1 to your daily menu and the foods you choose to eat throughout the day. Adding the following foods to your meals and snacks provides 43.4 grams of fiber in one day:

- one-half cup of high-fiber cereal at breakfast (14 grams)
- one-half cup of white bean soup with lunch (9.3 grams)
- three cups of popcorn (5.8 grams) and a handful of raspberries (8 grams) for an afternoon snack
- a medium-sized baked sweet potato (6.3 grams) as a side dish at dinnertime

There are many ways to slowly introduce more fiber to the diet. Consider the following suggestions to satisfy your daily fiber requirements.

- Use MyPlate as a guide and make half your plate fruits and vegetables, when possible.
- Eat beans at least two to three times each week.
- Switch in whole fruit for fruit juice at breakfast.
- Add a fruit or vegetable alongside your favorite snack item.
- Top salads or creamy soups with nuts and seeds for a fiber-filled crunch.
- Compare the amount of dietary fiber on the Nutrition Facts labels and pick foods with the higher number.
- When appropriate, eat the edible skins of fruits and vegetables for additional fiber. Good examples include the skin of an apple and a baked potato.
- Look for the word “whole” before grains on the ingredients list.

Fiber Supplements

Fiber supplements are becoming increasingly popular. They can be found in capsules, tablets, powders, drinks, and gummy form. Choose foods first to add fiber to your diet. Several foods high in fiber are also important sources of vitamins, minerals, and long-lasting energy. Some fiber supplements may interact with prescribed medications or cause food to move so quickly through the gut it interferes with the body’s ability to absorb important minerals, like zinc, calcium, and iron. As with any type of dietary supplement, talk to your health-care provider before adding in a fiber supplement.

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