

Fiber



www.nlm.nih.gov/medlineplus/dietaryfiber.html

What is Fiber

- That substance found in the outer layers of grains or plants and which was not digested in the intestines
- Wheat bran, the outer layer of wheat grain, fits this model.



Two Types:



There are two types of fiber, each of which is thought to have its own benefits:



Soluble fiber consists of a group of substances that is made of carbohydrates and dissolves in water. Examples of foods that contain soluble fiber include fruits, oats, barley, and legumes (peas and beans).



Insoluble fiber comes from plant cell walls and does not dissolve in water. Examples of foods that contain insoluble fiber include wheat, rye, and other grains. The traditional fiber, wheat bran, is a type of insoluble fiber.

Insoluble Fiber

- Insoluble fiber (wheat bran, and some fruits and vegetables) has been recommended to treat digestive problems such as constipation, hemorrhoids, chronic diarrhea, and fecal incontinence.
- Fiber bulks the stool, making it softer and easier to pass. Fiber helps the stool pass regularly, although it is not a laxative.



This Photo by Unknown Author is licensed under [CC BY-SA](#)

Soluble Fiber

- Soluble fiber ([psyllium](#), pectin, [wheat dextrin](#), and oat products) can reduce the risk of coronary artery disease and stroke by 40 to 50 percent (compared to a low fiber diet)
- Soluble fiber can also reduce the risk of developing type 2 diabetes. In people who have diabetes (type 1 and 2), soluble fiber can help to control blood glucose levels.



This Photo by Unknown Author is licensed under [CC BY-NC-ND](#)

HOW MUCH FIBER DO I NEED?

- The recommended amount of dietary fiber is 20 to 35 grams per day. By reading the nutrition label on packaged foods, it is possible to determine the number of grams of dietary fiber per serving

Fruits

Apple (with skin)	1 medium apple	4.4
Banana	1 medium banana	3.1
Oranges	1 orange	3.1
Prunes	1 cup, pitted	12.4



Juices

Apple, unsweetened, with added ascorbic acid	1 cup	0.5
Grapefruit, white, canned, sweetened	1 cup	0.2
Grape, unsweetened, with added ascorbic acid	1 cup	0.5
Orange	1 cup	0.7

Vegetables

Cooked		
•Green beans	1 cup	4.0
•Carrots	1/2 cup sliced	2.3
•Peas	1 cup	8.8
•Potato (baked, with skin)	1 medium potato	3.8
Raw		
•Cucumber (with peel)	1 cucumber	1.5
•Lettuce	1 cup shredded	0.5
•Tomato	1 medium tomato	1.5
•Spinach	1 cup	0.7

Legumes

•Baked beans, canned, no salt added	1 cup	13.9	
•Kidney beans, canned	1 cup	13.6	
•Lima beans, canned	1 cup	11.6	
•Lentils, boiled	1 cup	15.6	



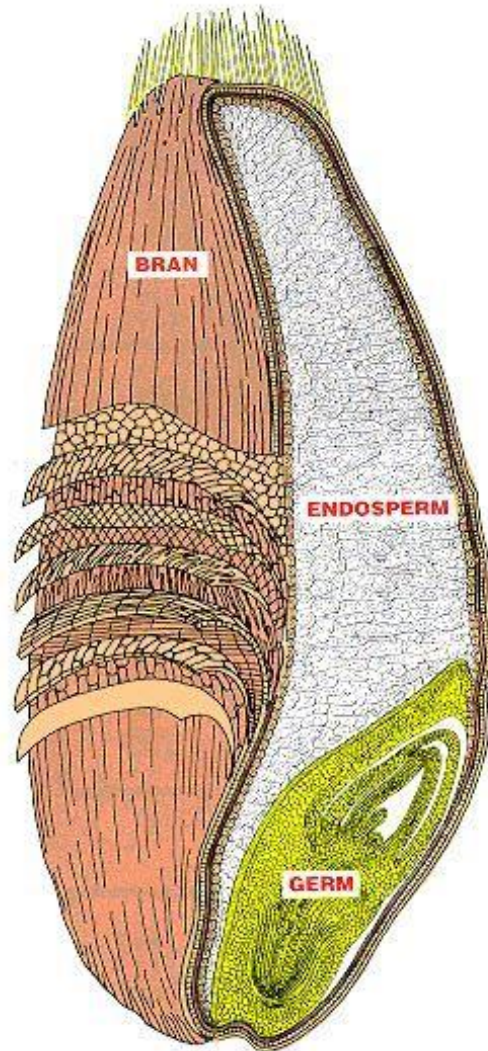
Nuts

Almonds	1/2 cup	8.7
Peanuts	1/2 cup	7.9



Breads, pastas, flours

Bran muffins	1 medium muffin	5.2
Oatmeal, cooked	1 cup	4.0
White bread	1 slice	0.6
Whole-wheat bread	1 slice	1.9
Pasta and rice, cooked		
•Macaroni	1 cup	2.5
•Rice, brown	1 cup	3.5
•Rice, white	1 cup	0.6
•Spaghetti (regular)	1 cup	2.5



There are 3 parts to a wheat kernel
(sometimes called a wheat berry):

- 1) The **BRAN** is the hard outer covering of the wheat kernel, high in fiber & nutrients.
- 2) The **GERM** is the nutrient-rich embryo that will sprout and grow into a new wheat plant.
- 3) The **ENDOSPERM** is the biggest part (83%), the "insides" of the kernel - mostly starch.

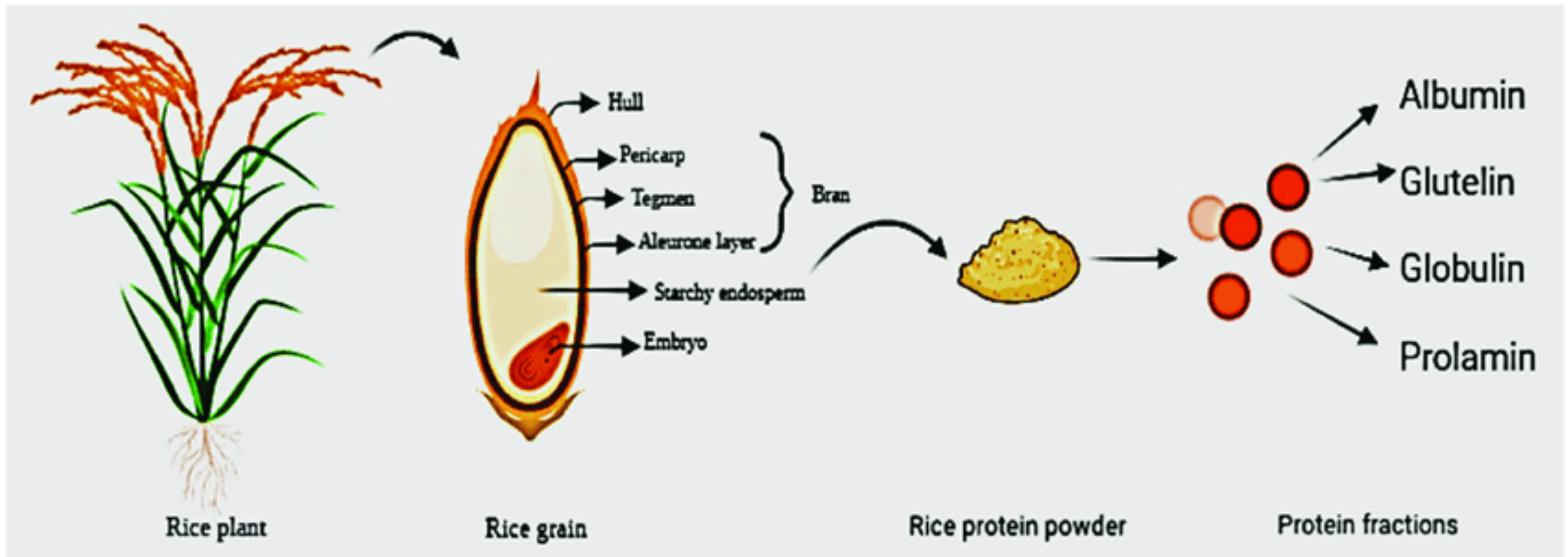
Diets rich in "whole grain" foods and other plant foods low in total fat, saturated fat, and cholesterol may reduce the risk of heart disease and certain cancers.

WHITE FLOUR

is made from the endosperm only
= NOT a whole grain

WHOLE WHEAT FLOUR

combines all 3 parts of the wheat berry
= a whole grain



Rice

	Brown rice	White rice	Enriched white rice
<u>Manganese</u>	42% DV	16% DV	16% DV
<u>Niacin</u>	16% DV	3% DV	9% DV
<u>Thiamin</u>	15% DV	2% DV	14% DV
<u>Selenium</u>	11% DV	–	14% DV
<u>Magnesium</u>	9% DV	2% DV	2% DV Rice 101: Nutrition facts and health effects (medicalnewstoday.com)

FIBER SIDE EFFECTS

- Adding fiber to the diet can have some side effects, such as abdominal bloating or gas. This can sometimes be minimized by starting with a small amount and slowly increasing until stools become softer and more frequent.
- However, many people, including those with irritable bowel syndrome, cannot tolerate fiber supplements and do better by not increasing fiber in their diet.

Other sources of fiber

- For those who do not like high-fiber foods such as fruits, beans, and vegetables, a good source of fiber is unprocessed wheat bran; one to two tablespoons can be mixed with food. One tablespoon of wheat bran contains approximately 1.6 grams of fiber.
- In addition, a number of fiber supplements are available. Examples include [psyllium](#), [methylcellulose](#), [wheat dextrin](#), and calcium [polycarbophil](#). The dose of the fiber supplement should be increased slowly to prevent gas and cramping, and the supplement should be taken with adequate fluid. The fiber in these supplements is mostly of the soluble type.



*Data from: USDA FoodData Central.
Available
at: <https://fdc.nal.usda.gov/> (Accessed
on October 11, 2019).*

To learn how much fiber and other nutrients are in different foods, visit the United States Department of Agriculture (USDA) FoodData Central website.