

Nutrition for Health and Fitness: Fiber in Your Diet¹

Linda B. Bobroff²

Whether you call it dietary fiber, fiber, or “roughage,” eating a diet rich in this food component is good for your health. This fact sheet provides tips on how to include foods with fiber in your diet.

What is fiber?

Dietary fiber is the parts of plants that we cannot digest. Only foods that come from plants contain dietary fiber. Fruits, vegetables, legumes, nuts, seeds, and whole-grain foods contain dietary fiber.

Some foods have isolated carbohydrates called “functional” fiber added to them. Functional fibers have various effects in the body, such as decreasing blood cholesterol or increasing stool bulk. Psyllium and cellulose are examples of functional fibers. Functional fibers may be added to foods that otherwise do not contain fiber, such as yogurt.

FACT: Total fiber in your diet is the sum of dietary fiber and functional fiber.

Fiber and Your Health

Fiber contributes to health in several ways. Fiber adds bulk to our diet. Having enough fiber in the foods we eat helps prevent constipation. Certain fibers help us feel full so we may eat less if a meal includes foods with dietary fiber, such as oatmeal, fruits, vegetables, or legumes. A diet pattern high in fruits, vegetables, and whole grains that provides adequate fiber decreases our risk of getting diverticular disease. Diverticular disease is a bowel problem that can



Figure 1. To get more fiber in your diet, eat an orange in the morning instead of drinking orange juice.

Credits: Amanda Mills, CDC

cause discomfort and sometimes severe pain. It is often treated with a high-fiber diet.

FACT: Eating foods with fiber can help keep your digestive tract healthy.

1. This document is FCS8130, one of a series of the Department of Family, Youth and Community Sciences, UF/IFAS Extension. Original publication date April 1990. Revised March 2018. Visit the EDIS website at <http://edis.ifas.ufl.edu>.

2. Linda B. Bobroff, PhD, RDN, professor, Department of Family, Youth and Community Sciences, UF/IFAS Extension, Gainesville, FL 32611.

Fiber can help us fight high blood cholesterol. Certain kinds of fiber remove some cholesterol from our bodies, which helps prevent heart disease in some people.

Check your diet for fiber

See Table 4.

Is all fiber the same?

No! There are different kinds of fiber that are good for us in different ways. This is one reason we should eat a variety of foods each day. One way we classify fiber is based on how well it dissolves in water. Fibers that do not dissolve in water are insoluble; those that dissolve in water are soluble. Most foods high in dietary fiber contain both soluble and insoluble fiber, but they have them in different amounts. These two types of fiber have different effects on our health.

Most insoluble fibers add bulk to the stool. This helps prevent and treat constipation.

You can get insoluble fiber from the following:

- Wheat bran
- Whole-grain breads, cereals, and pasta
- Fruit with edible peel or seeds
- Vegetables

Certain kinds of soluble fiber help lower blood cholesterol when eaten as part of a low-fat diet.

You can get soluble fiber from the following:

- Oat bran
- Barley
- Nuts and seeds
- Apples, oranges, and grapefruit
- Cabbage
- Legumes (dry beans, lentils, or peas)
- Psyllium

A Look at Whole Grains

Whole grains and foods made from whole grains are better sources of fiber than refined grains. Whole grains include the germ, endosperm, and bran parts of the grain. Refined grains include only the endosperm. The bran and germ contain most of the fiber in the grain. Refined grains are low in fiber because they are missing the bran and germ.

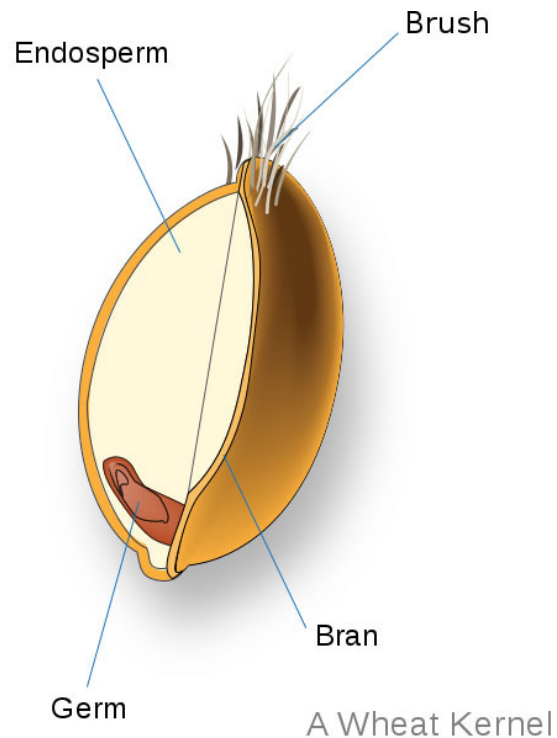


Figure 2. Whole grains contain the germ, endosperm, and bran parts of the grain, while refined grains only include the endosperm. Credits: Jkwchui, CC BY-SA 3.0

You can learn to cook and eat lots of new grain foods for variety! Try some of these whole-grain foods:

- Whole wheat
- Cracked wheat
- Bulgur
- Whole cornmeal
- Barley
- Popcorn
- Brown rice
- Whole rye

- Oatmeal
- Quinoa

Some foods contain both whole grains and refined grains. Check the ingredient label to know what you are getting. The following foods usually contain both whole grains and refined grains. Including some of these in your diet will help to increase your fiber intake:

- Wheat bread
- Bran muffins



Figure 3. Whole-grain bread is a food that usually contains both whole grains and refined grains. Always check the nutrition label to learn about the ingredients in your food.
Credits: iStockphoto

- Oatmeal bread
- Cracked wheat bread
- Pumpernickel bread
- Graham crackers
- Rye bread

How much fiber should we eat?

Most Americans eat very little fiber (about 10–17 g per day). The amount recommended to help protect against heart disease is 14 g of dietary fiber per 1,000 calories eaten. Older people need fewer calories, so their fiber recommendations are less. However, they should get enough fiber to stay “regular.” See Table 1 for more details on fiber recommendations.

Too much fiber may cause gastrointestinal symptoms for some people. Most people can eat large amounts of fiber

with no discomfort; however, other people may have gas pains. Read the next section to see how to avoid discomfort as you add fiber to your diet.

Increasing Fiber in Your Diet

Many Americans are not used to eating lots of foods with fiber, so it is often easier to make small changes over time. This gives family members time to adjust to diet changes and accept new foods. Here is one step-by-step approach to increasing fiber in your diet.

Step 1

Add ½ cup of fresh fruit and one ounce of whole-grain bread, cereal, or pasta to your daily diet. Choose any in-season fruit that you like. One ounce of a grain is:

- 1 slice of bread, or
- ¾ cup of ready-to-eat cereal, or
- ½ cup of cooked cereal or pasta

Step 2

After a few days, add about ½ cup of fresh or frozen vegetables and another ounce of a whole-grain product to your daily diet.

Step 3

Keep adding vegetables and whole-grain foods until every day you eat at least:

- 1½ cups of fruit, and
- 2½ cups of vegetables, and
- 3 ounces of whole-grain breads, cereals, or pasta



Figure 4. Adding fruits and vegetables to your diet will help you eat more fiber. Sliced apple with peanut butter is a good, fiber-rich snack for children, except for those with a peanut allergy.
Credits: USDA, SNAP photo gallery

These amounts are based on a daily energy intake of about 1,800 calories. If you need more calories, then your recommended intake from each food group will be higher. Include legumes as a main dish or side dish several times each week for good health. Legumes include dry beans, lentils, and peas. See <http://choosemyplate.gov> for more information about healthy food choices and recommended intakes from each food group.

Using Food Labels

This section focuses on using food labels to see how much fiber is in packaged foods. Food labels help you compare the fiber content of foods to plan a healthy diet. They have both nutrition and ingredient information.



Figure 5. You can find out the amount of fiber in food by checking the Nutrition Facts listed on the label.

Credits: iStockphoto

Nutrition Information on Food Labels

Nutrition information is presented on the Nutrition Facts panel. The fiber content must be listed on most foods. Since almost all foods have the Nutrition Facts panel, it is easy to compare the fiber content of different foods. You can compare the amount of fiber in different brands of the same food since the serving size on the label must be the same for all brands of that food.

Fiber is listed in Nutrition Facts as Dietary Fiber, and the amount is given in grams (g) and % Daily Value.

The Daily Value for fiber is 25 g for a 2,000-calorie diet, which is slightly less than the recommendation of 28 g for a 2,000-calorie diet (see Table 1). You may want to aim for a higher level of fiber from a variety of fruits, vegetables, whole grains, and legumes.

Ingredient List

Food labels of most packaged foods include a list of ingredients. Ingredients are listed in descending order by weight. The item present in the greatest amount by weight is listed first and the item present in the smallest amount is last.

Look for foods with high-fiber ingredients listed first or second. Some high-fiber ingredients are:

- Brown rice
- Bulgur
- Cracked wheat
- Kasha
- Legumes (dry beans, peas, or lentils)
- Oatmeal or oat bran
- Quinoa
- Rye bran
- Scotch barley
- Wheat bran
- Whole cornmeal
- Whole-rye flour
- Whole-wheat flour

What about food label claims?

Food labels may include claims about fiber. These claims have certain definitions. See Table 2 to learn what these claims mean.

Keep in mind that even if a food provides only 2 or 3 g of fiber in a serving, it contributes to your total fiber intake for the day. The Nutrition Facts label in Figure 5 is for a “high fiber” food, since the food provides 24% of the Daily Value per serving.

If you eat several servings each day of a food with 2 g of fiber, that food is an important source of fiber for you.

FACT: Legumes, such as lentils, dried beans, and peas, are good sources of dietary fiber. Enjoy them at least two times a week as a main dish.

Increasing Fiber in Recipes

When using recipes, you can increase fiber by making ingredient substitutions. For tried and true family recipes, you may want to start slowly. Substitute only a portion of the total quantity of the ingredient and see how it turns out. This will allow you and your family to get used to the change in taste and texture before making drastic changes. Table 3 provides ideas to add fiber to your recipes.

Here are more tips for increasing dietary fiber in your diet.

- Two or more times each week, serve a bean, pea, or lentil main dish instead of meat, chicken, or fish.
- Serve whole-grain bread with dinner.
- Eat a whole orange instead of orange juice for breakfast.
- Have fresh fruit for dessert instead of sweets.
- Grate fresh carrots into coleslaw or other salads.
- Add sliced banana, peaches, or other fruit to your cereal.
- Keep prepared carrot and celery sticks, cucumber rounds, or other fresh vegetables in the refrigerator at home and work for a quick, high-fiber snack.
- Keep whole-wheat crackers or whole-grain tortilla chips at work for an easy, crunchy snack.

For More Information

Contact your county Extension Family and Consumer Sciences educator or a Registered Dietitian (RD or RDN). You can also get information from the Internet, but be sure you visit reliable sites! Try those that end in .gov or .edu. They are government (.gov) or university/school (.edu) sites that have information you can trust. Other sites may have good information, but make sure to check them carefully. To start, try these sites:

- <http://SolutionsForYourLife.ufl.edu>

- <http://www.nutrition.gov>
- <http://fnic.nal.usda.gov>
- <http://choosemyplate.gov>
- <http://www.fruitsandveggiesmorematters.org>
- <http://www.wheatfoods.org>

Recipes That Provide Dietary Fiber

Black Beans and Rice

3 (16 oz) cans low-sodium black beans, drained

2 tablespoons olive oil

1 cup onion, chopped

1 green bell pepper, chopped (can use yellow, orange, or red bell pepper)

1 clove garlic, crushed

4 cups hot cooked brown rice

1 sweet onion, chopped (optional)

In a small skillet, heat olive oil over low heat. Add 1 cup onion, green pepper, and garlic. Sauté for several minutes. Put beans into a saucepan, add the sautéed vegetables,



Figure 6. Black beans and rice is a healthy, filling dish that contains dietary fiber.

Credits: James Gathany, CDC

and heat. Serve the beans over rice and sprinkle with the chopped sweet onion if desired. Makes 8 servings.

Each serving provides approximately:

Calories: 330

Fat: 5 g

Carbohydrates: 55 g

Dietary fiber: 15 g

Fruity Oatmeal

For a change of pace, try this tasty breakfast treat!

2/3 cup water

2/3 cup low-fat (1%) milk

1/2 teaspoon cinnamon

1/4 teaspoon salt (optional)

1/2 small apple, washed and chopped

1/2 cup rolled oats (not quick-cooking)

3 tablespoons oat bran

1 tablespoon brown sugar

1 small banana (or 1/2 medium or large)

Bring milk and water almost to a boil. Add cinnamon, salt, apple, rolled oats, and oat bran. Cook uncovered for about 5 minutes until liquid is mostly absorbed. Add brown sugar and sliced banana and serve. Makes 2 servings.

Each serving provides approximately:

Calories: 280

Fat: 3 g

Carbohydrates: 45 g

Dietary fiber: 6 g

Oven Fries

An old favorite minus the deep frying! Try a variation by using unpeeled sweet potatoes cut into sticks (sprinkle with cinnamon and sugar).

2 pounds potatoes, scrubbed with vegetable brush, unpeeled, cut into large sticks

2 tablespoons vegetable oil

1/2 teaspoon pepper

1/2 teaspoon paprika

Preheat oven to 375°F. In a large bowl, combine potatoes, oil, pepper, and paprika; toss to coat well. Arrange the potatoes in a single layer on a nonstick baking sheet. Cover with aluminum foil. Bake 20 minutes. With a spatula, loosen potatoes and toss gently. Bake 20 minutes longer, uncovered. Remove potatoes to a serving plate. Makes 6 servings.

Each serving provides approximately:

Calories: 160

Fat: 5 g

Carbohydrates: 24 g

Dietary fiber: 3 g

White Bean and Tomato Salad

2 cups canned white beans, no salt added, drained

2 tablespoons olive oil

Freshly ground pepper to taste

2 large ripe tomatoes, seeded and diced

1/4 cup red onion, peeled and finely diced

2 teaspoons dried oregano

In a small bowl gently mix beans, olive oil, and pepper. Add tomatoes, onion, and oregano; toss to mix. Makes 4 servings.

Each serving provides approximately:

Calories: 240

Fat: 8 g

Carbohydrates: 22 g

Dietary fiber: 6.5 g

Fufu

This is a popular African dish that can be served in place of mashed potatoes. The recipe is from the Fruits & Veggies—More Matters website (http://www.cdc.gov/nutrition/downloads/explore_recipe_cards_Tag508.pdf).

5 cups water

4 ripe plantains (skin will be black)

1 tablespoon butter

1 clove of garlic, minced

4 green onions (scallions), chopped

Peel plantains and slice into 1-inch pieces. Bring water to a boil. Add plantain pieces and cook on medium-high heat for 20 minutes until most water is absorbed. Add butter and garlic to plantains. Mash with a potato masher or fork. Garnish with green onions and serve. Makes 4 servings.

Each serving provides approximately:

Calories: 250

Fat: 3.5 g

Carbohydrates: 58 g

Dietary fiber: 5 g

Barbecued Lentils

Lentils are a tasty legume that can be prepared many different ways. Here is an easy recipe that uses barbecue sauce and fresh vegetables for a unique dish.

12 ounces barbecue sauce

3½ cups water

1 pound dry brown lentils

2 green peppers, diced

2 red peppers, diced

2 small onions, diced

2 cloves garlic, minced

Combine all ingredients in a slow cooker. Cover and cook on low heat for 6–8 hours.

You can bake this recipe instead of using the slow cooker: Sauté the peppers, onions, and garlic for 5 minutes. Add the lentils and stir for an additional 5 minutes. Mix all of the ingredients in a glass baking dish and bake at 375°F for 60 minutes. Makes 8 servings.

Each serving provides approximately:

Calories: 270

Fat: 1.5 g

Carbohydrates: 25 g

Dietary fiber: 4.4 g

Table 1. Daily Dietary Fiber Recommendations

If you eat this many calories a day:	Your daily dietary fiber needs are:
1,600	22 g
2,000	28 g
2,200	31 g
2,500	35 g
2,800	39 g
3,200	45 g

Source: *Dietary Reference Intakes*, Institute of Medicine, 2006

Table 2. Fiber Definitions

If the label says:	It means:
High fiber	One serving has 20% or more of the Daily Value (5 g or more of dietary fiber for a 2,000-calorie diet).
Good source of fiber	One serving has 10–19% of the Daily Value (3 g to less than 5 g of dietary fiber for a 2,000-calorie diet).

Table 3. Ingredient Substitutions

Instead of:	Use:
White rice	Brown rice
White flour	Whole-wheat flour or half white and half whole wheat. Also, use rye flour, oatmeal, oat bran, or wheat bran to replace some of the white flour in breads, muffins, and quick bread recipes.
White pasta	Combination of whole-wheat and white pasta (check cooking times).
Peeled vegetables	Vegetables with peels, if possible
Peeled fruits	Fruits with peels, if possible

Table 4. Check your diet for fiber

Answer the questions below, then see how your diet stacks up. (Put a check in only one box for each question.)				
How often do you eat:	Seldom or Never	1 to 2 Times a Week	3 to 5 Times a Week	Almost Daily
1. Whole-grain breads, cereals, or pasta?				
2. Dishes made with dry beans, lentils, or peas?				
3. At least 2 cups of vegetables a day?				
4. Whole fresh fruit with skins and/or seeds (like berries, apples, peaches, pears, etc.)?				

The best answer for all these is **Almost Daily**. If most of your answers are in the first two columns, your diet may be low in fiber. Use the tips in this fact sheet to put more fiber in your diet.