

Nutrition for Health and Fitness: Fiber in Your Diet¹

Linda B. Bobroff²

Fiber has many names, such as **dietary fiber**, **total fiber**, or just plain **fiber**. Eating foods that contain fiber 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, and whole-grain foods all 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 chicory root fiber are examples of functional fibers. Functional fibers may be added to foods, like yogurt, that otherwise do not contain fiber.

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

Fiber and Your Health

Fiber has several functions that contribute to health. Fiber adds bulk to our diet. Having enough bulk 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. Diets low in fiber increase our risk of getting **diverticular disease**, so it's important to eat enough fiber every day. Diverticular disease is a bowel problem that can cause



Figure 1. To get more fiber in your diet eat an orange in the morning instead of drinking orange juice. Whole grains, fruits, and vegetables all contain dietary fiber. Credits: Amanda Mills, CDC

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

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

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

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2. Linda B. Bobroff, PhD, RD, LD/N, professor, Department of Family, Youth and Community Sciences, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

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.

Is All Fiber the Same?

No! There are two different kinds of fiber, and they are good for us in different ways. This is one reason we should eat a variety of foods each day. Fibers are either **insoluble** or **soluble** in water. Most foods high in dietary fiber contain both types of fiber, but they have them in different amounts. The two types of fiber have different effects on our health.

Insoluble fiber adds bulk to the stool. This helps prevent and treat constipation and diverticular disease. (NOTE: In severe cases, diverticular disease is treated with a low-fiber diet.)

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)

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.

Depending on what you like, you can choose from many kinds of whole-grain foods. You can learn to cook and

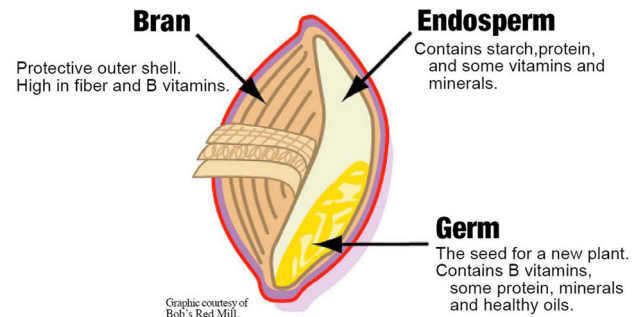


Figure 2. Whole grains contain the germ, endosperm, and bran parts of the grain, while refined grains only include the endosperm. Credits: Whole Grains Council, <http://wholegrainscouncil.org>, and Bob's Red Mill

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 a whole grain and refined grains. **Including some of these in your diet will help to increase your fiber intake:**

- Wheat bread
- Bran muffins
- Oatmeal bread
- Cracked wheat bread
- Pumpernickel bread
- Graham crackers
- Rye bread

How Much Fiber Should We Eat?

Most Americans eat very little fiber (about 10–15 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.

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

Too much fiber may cause problems for some people. Most people can eat large amounts of fiber with no discomfort, but some people can 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's often easier to make 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 1/2 cup of fresh fruit and one ounce of whole-grain bread, cereal, or pasta to your daily diet. Choose any fruit in season that you like. One ounce of a grain is:

- 1 slice of bread, or
- 3/4 cup of ready-to-eat cereal, or
- 1/2 cup of cooked cereal or pasta

Step 2

After a few days, add about 1/2 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 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

These amounts are based on a daily energy intake of about 1,800 calories. If you eat more calories, then your recommended intake from each food group will be higher. For good health also include legumes as a main dish or side dish several times each week. 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.



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. Credits: USDA, SNAP photo gallery

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.

Nutrition Information on Food Labels

Nutrition information is presented on the **Nutrition Facts** panel. The fiber content is **required** as part of the Nutrition Facts on most foods. Since almost all foods have the

Nutrition Facts panel, it's 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 new 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 least amount is last.

Look for foods with high-fiber ingredients listed first or second. Some high-fiber ingredients include the following:

- 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 understand what these definitions mean.

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).



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

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 (above) is for a “high fiber” food, since the food provides 24% of the daily value per serving.

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

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**.

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 bean, pea, or lentil main dishes instead of meat, chicken, or fish.
- Serve whole-grain bread with dinner. Go easy on the butter or margarine.
- Eat a whole orange instead of orange juice for breakfast.
- Have fresh fruit for dessert instead of sweets.

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 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	Vegetable with peels, if possible
Peeled fruits	Fruits with peels, if possible

- 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, low-fat 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, a Public Health Nutritionist or a Registered Dietitian (RD).

You also can 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 and have information you can trust. Other sites may have good information, but make sure to check them carefully. To start, try these sites:

- <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

Serve black beans over brown rice or as a thick, hearty soup.

- 3 (16 oz) cans 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)



Figure 6. Black beans and rice is a healthy, filling dish that contains dietary fiber. Credits: James Gathany, CDC

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, and heat. Serve the beans over rice and sprinkle with the chopped sweet onion if desired.

Makes 8 servings.

Each serving provides approximately:

Calories: 280

Fat: 4 g

Dietary fiber: 10 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. Cooked uncovered about 5 minutes until liquid is mostly absorbed. Add brown sugar and sliced banana and serve. Makes 2 servings.

Each serving provides approximately:

Calories: 235

Fat: 3 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: 90

Fat: 4.5 g

Dietary fiber: 4 g

White Bean and Tomato Salad

2 cups canned white beans, 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 mix beans, olive oil, and pepper. Add tomatoes, onion, and oregano; toss to mix. Makes 4 servings.

Each serving provides approximately:

Calories: 230

Fat: 7.5 g

Dietary fiber: 7.5 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 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

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. This recipe is from the Fruits & Veggies - More Matters website (http://www.cdc.gov/nutrition/downloads/explore_recipe_cards_Tag508.pdf).

12 ounces barbecue sauce
3½ cups water
1 pound dry brown lentils
2 green peppers, diced
2 red peppers, diced
2 small onions, diced
1 clove garlic, minced

Combine 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 5 minutes. Add the lentils and stir 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 g

Dietary fiber: 15 g