

## Fiber 101

by Ann Gerhardt, MD

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Fiber is good for us. The US Department of Agriculture (USDA) recommends how many grams of fiber we should eat each day. According to the 2010 guidelines, Men under age 51 should eat at least 38 grams of fiber daily. Women under age 51 should eat at least 25-26 grams daily. As we age, we need fewer calories, so over age 50 years the fiber goals decline, to 30 grams for men and 21 grams for women. Pregnancy or lactation bumps up the requirement to 28-29 grams daily.

Americans eat, on average, only 15 grams per day. Having guidelines may feel helpful, but how does a non-dietitian know how to put them into practice? Even if you read labels, you come up short, because fruits and vegetables don't have nutrient labels.

Here is a short synopsis of what you need to know about dietary fiber and how to get enough.

**Why:** The USDA doesn't encourage you to eat fiber for mere theoretical reasons. Diverticulosis is the norm in our low-fiber, constipated, American population. Fiber delays food's emptying from the stomach, slowing digestion. It swells with water, giving the feeling of fullness with less food. This helps you to eat less, making weight and diabetes easier to control. Some fiber types lower cholesterol levels. People eating high fiber diets generally have less vascular disease, colon cancer and diabetes.

A few of my patients have dramatically altered their health according to the fiber they ate. A lady with moderately severe diabetes was able to stop insulin (and lose 30 pounds) by substituting beans twice a day for her usual low-fiber starches. A man with no teeth, who refused to wear his dentures, wouldn't eat any food with fiber and died of colon cancer (clearly not proof for, but incriminatingly consistent with the association).

Fiber may not be absorbed by the human gut into the body, but it does serve an important purpose in the

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colon. It passes through the small bowel into the colon, where our bacteria use it for food. The well-fed bacteria help to regulate the immune system of the entire body. When the bacteria are done feeding on it, they leave a residue that the cells lining the colon use for nourishment. The relationship is truly symbiotic.

Fiber stimulates bowel movements in two ways. It increases bowel contractions, to keep stool moving through. It also bulks up stool by feeding its bacteria, a good thing, since most of stool is bacteria, not undigested food.

**What:** Dietary fiber is the non-digestible part of whole grains, seeds, fruits, vegetables and beans. Some fiber you can see, like the stringy part of vegetables and the chewy sawdust part of whole grains. It doesn't dissolve in water, and is called insoluble fiber. The other type, termed soluble fiber, is the gluey stuff that exudes from cooked oatmeal and beans and holds jelly together.

Good fiber sources include beans, peas, lentils, soybeans, vegetables, fruits, whole grains, bran and nuts. Guar gum, a soluble fiber in gummy candy, is the one nutrient in that chemical concoction that might be healthy for you. Food manufacturers add fiber to some foods, but it's not clear if added fiber promotes health as much as fiber that is an integral part of the food.

The Nutritional Labeling and Education Act (NLEA) has established what health claims a food manufacturer can get away with. In order for a manufacturer to claim that a product is a "good" source of dietary fiber, it must contain 10 to 19 percent of the recommended daily intake or Daily Reference Value (DRV) of fiber per serving. The current DRV for fiber is 25 grams. To label the product as an "excellent" source of dietary fiber it must contain 20% or more of the DRV per serving.

The NLEA has permitted food manufacturers to state that a low-fat food rich in fiber-containing grain products, fruits and vegetables may reduce the risk of some cancers. They can apply this claim only to low-fat

foods that meet the content claim of a “good” source of dietary fiber, without fortification or supplementation.

The only other allowable, fiber-related health claim is that soluble fiber (primarily beta-glucans), as part of a diet low in saturated fat and cholesterol, may reduce the risk of coronary heart disease. The eligible sources of soluble fiber include oat bran, rolled oats, whole oat flour, oatrim and psyllium husk.

**How:** It can be frustrating to calculate your fiber intake, because every list seems to report different content. Even labels aren't necessarily accurate. The USDA publishes a list of food fiber content at <http://www.nal.usda.gov/fnic/foodcomp/Data/SR20/nutrlist/sr20a291.pdf> Interpreting the list requires that you pay attention to the serving size.

The list below puts fiber foods in rough groups, according to usual fiber content. I base the list on ½ cup portions of cooked vegetables, starches like rice, potato, barley, cornmeal and pasta, and cooked beans/peas, lentils, or 1 cup of packed raw vegetables.

- NO fiber: All meat, fish, poultry, broth, eggs and dairy, any candy without nuts, any pastry, cookie or dessert without nuts, most beverages, all oils and dressings, spirulina and honey.
- Essentially no fiber: White flour-based cereals, iceberg lettuce, fruit juice without the pulp, things that have fiber but you normally only eat a small amount of, like garlic, pine nuts, corn starch, parsley, capers and sun-dried tomatoes.
- 0.6 to 1.5 gram per serving: White bread, rolls or biscuits, hash brown potatoes, a few ready-to-eat cereals, a single chocolate candy with nuts, most vegetables, one ounce cashews, alfalfa seeds, tapioca, fruit without the skin, melon, potato chips, granola bars, fruit juice nectars, carrot juice.
- 1.6 – 3 grams per serving: white rice, bagel, pasta, mixed-grain bread or pasta, one ounce nuts other than cashews or almonds, small fruits (plum, peach, kiwi) with skin, cereals pretending to be wheat, like Wheaties, snap beans, Brussels sprouts, snap beans, okra, corn, peas, potato with skin, carrots, collard or turnip greens, rhubarb, oat bran, barley,
- 3.1 – 4 grams per serving: Berries (assuming 1 cup serving), one ounce almonds, larger fruits with skin (apple, mango, pear, orange), fruit pie, 1 serving dried fruits,
- Cereals (cooked or cold): Those that aren't pure sugar and white flour have between 3 and 7.3

grams per cup – read the box. The high bran cereals have added bran. All-Bran contains 8.8 grams per ½ cup.

- 4.1 – 5 grams per serving: Raw coconut, oatmeal, sweet potato, bulgur, couscous,
- 5.1 – 6 grams per serving: Baking chocolate, papaya, cornmeal
- Beans: 4-9 grams per ½ cup cooked serving, in this order, from lowest to highest fiber content: Limas, baked beans with sauce, soybeans, lentils, chickpeas, Blackeye peas, great northern beans, white beans, kidney beans, black beans, pinto beans, navy beans.

For most fast-food, meat-and-potatoes Americans, it takes a conscious effort to eat enough fiber. Here are some samples of good and bad fiber days. Good day – a high fiber cereal (5.5 g), 2 pieces of rye bread (5.6g), 3 vegetables (a large serving of cooked greens with onion and a mixed green salad with beets = 5 g), a peach (2.6), a cup of berries (4 g), a sweet potato (4.5 g) and 1 ounce pecans (2.7 g) brings you up to 29.9 grams for the day. Bad day - a similar plan, but switch to a low fiber cereal, white bread, an apple instead of berries, and a white instead of sweet potato, and you are under 25 grams fiber for the day. Add a half cup of higher-fiber beans to the day and hitting the goal is much easier.¶