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NF92-62 Dietary Fiber

Linda S. Boeckner

University of Nebraska--Lincoln, lboeckner1@unl.edu

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Dietary Fiber

Linda Boeckner, Extension Nutrition Specialist

Defining Fiber and Its Role

Food fibers are that part of plant foods that are not digested when eaten. Since they are not absorbed into the body, dietary fibers are not a nutrient. Nevertheless, consumers are increasingly interested in the role that dietary fibers play in maintaining the body's health.

Fiber-rich foods help with constipation, hemorrhoids, and diverticular disease. Some types of fiber may have a cholesterol-lowering effect which could lead to reduced risk of heart disease. In addition, fiber may reduce the incidence of certain types of cancer, particularly those associated with the digestive tract, and may be helpful in controlling diabetes.

Soluble and insoluble fibers make up the two basic categories of dietary fiber. Insoluble fibers — cellulose, hemicellulose and lignin — are not soluble in water. Foods which contain insoluble fibers are wheat bran, whole grain products, and vegetables. Insoluble fibers are responsible for increased stool bulk and help to regulate bowel movements.

Soluble fibers — gums, pectins, and mucilages — become gummy in water. When eaten, these fiber sources actually slow the passage of food through the digestive system. Some researchers believe this action helps to regulate cholesterol and glucose (sugar) levels in the blood by affecting absorption rates. Food sources of soluble fibers are dried beans, oats, barley and some fruits and vegetables.

Fiber Ground Rules

Placing too much emphasis on one type of fiber or fiber-rich food is risky. Achieving balance in eating dietary sources of fiber is a key concept. Excessive intakes of insoluble fibers such as wheat bran to the exclusion of soluble fibers will result in a bulky diet but the benefits of the soluble fiber will be lost. Furthermore, excessive fiber intake without adequate fluid intake can result in abdominal pain and discomfort.

How Much Should You Eat?

Nutrition researchers and educators recommend that healthy adults consume between 20-35 grams of dietary fiber per day¹. According to current studies, American men and women eat about 11 grams of dietary fiber daily². If you plan to add more fiber to your diet, follow these steps:

- Start slowly.
- Add high-fiber foods gradually.
- Too much fiber at once may produce discomfort.
- Eat a variety of fiber-rich foods.

The Dietary Guidelines for Americans recommend that we get our fiber in the following ways³: Three or more servings of various vegetables. Count one cup of raw leafy greens or 1/2 cup of other vegetables as a serving. Have dark-green leafy and deep-yellow vegetables often. Eat dry beans and peas often. One-half cup cooked dry beans or peas is a serving of vegetables. It may also count as one ounce of a meat serving.

Two or more servings of various fruits. Examples of servings are one medium apple, orange or banana; 1/2 cup of canned fruit; or 3/4 cup of juice. Eat citrus fruits or juices, melons or berries regularly to get vitamin C. Select fruits as desserts.

Six or more servings of grain products such as breads, cereals, pasta, and rice. A serving is 1 slice of bread; 1/2 bun, bagel or English muffin; 1 ounce of dry cereal; and 1/2 cup of cooked cereal, rice or pasta. To boost fiber, have several servings of whole-grain breads and cereals daily. Eat products from a variety of grains.

Drink plenty of fluids. Six to eight glasses a day will help reduce the risk of abdominal discomfort and intestinal blockage caused by too much fiber.

Get fiber from foods not pills. Food sources are more efficient and will supply additional nutrients. Excessive use of fiber supplements can lead to acute digestive problems and blockages. The American Dietetic Association advises that intakes greater than 50-60 grams a day can also block the absorption of some nutrients⁴.

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1. ADA Reports. Position of The American Dietetic Association: Health implications of dietary fiber - technical support paper. J Am Diet Assoc 88:217-221, 1988.
 2. Lanza E, Jone DY, Block G, Kessler L. Dietary fiber intake in the U.S. population. Am J Clin Nutr 46:790-797, 1987.
 3. U.S. Department of Agriculture and Health and Human Services. Nutrition and Your Health: Dietary Guidelines for Americans. Washington, D.C.: Government Printing Office. 1990.
 4. ADA Reports. Position of The American Dietetic Association: Health implications of dietary fiber. J Am Diet Assoc 88:216, 1988.

Dietary Fiber in Foods*

<i>Serving size</i>	<i>Total Fiber (grams)</i>	<i>Soluble Fiber (grams)</i>	<i>Insoluble Fiber (grams)</i>
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BREAKFAST CEREALS

All-Bran	1/3 c (28 gm)	8.43	.59	7.84
Cornflakes	1 1/4 c (28 gm)	1.20	.14	1.06
40% Bran-type	3/4 c (28 gm)	5.46	.56	4.90
Oatmeal, regular, cooked	1 c (234 gm)	4.45	1.64	2.81
Puffed rice	1 c (28 gm)	.53	.14	.39
Shredded Wheat	2/3 c (28 gm)	3.16	.31	2.86
Wheat germ	1/4 c (56 gm)	7.84	.62	7.22

FRUITS

Apple, no skin	1 med (138 gm)	2.07	.28	1.79
Apple, with skin	1 med (138 gm)	2.76	.28	2.48
Banana	1 med (114 gm)	1.94	.57	1.37
Cantaloupe	1/4 (133 gm)	.93	.13	.80
Grapes	20 (100 gm)	1.00	.10	.90
Orange	1 med (131 gm)	2.49	.79	1.70
Pineapple, canned	1/2 c (125 gm)	.88	.13	.75
Raisins	1/4 c (36 gm)	1.51	.22	1.30
Strawberries	1 c (149 gm)	2.68	.60	2.09

VEGETABLES

Beans, green	1/2 c (67 gm)	1.27	.34	.94
Broccoli, raw	1/2 c (78 gm)	2.57	.23	2.34
Cabbage, raw	1 c (70 gm)	1.19	.07	1.12
Carrots, raw	1 med (72 gm)	1.80	.14	1.66
Corn, frozen, cooked	1/2 c (83 gm)	1.74	.08	1.66
Potato, no skin	1 med (156 gm)	2.03	.47	1.56
Potato, with skin	1 med (202 gm)	5.05	1.21	3.84
Turnip greens, frozen	1/2 c (82 gm)	2.05	.08	1.97

LEGUMES

Kidney beans, canned	1/2 c (128 gm)	6.66	1.41	5.25
Pork and beans, canned	1/2 c (128 gm)	5.63	1.79	3.84
Peas, green, frozen	1/2 c (80 gm)	2.80	.24	2.56

BREADS, PASTA

Bread, white	1 sl (25 gm)	.65	.15	.50
Bread, whole wheat**	1 sl (28 gm)	2.59	.57	2.02
Rice, regular, cooked	1/2 c (102 gm)	.41	.10	.31
Spaghetti, cooked	1 c (140 gm)	2.10	.56	1.54

*Most of the values in this table were adapted from Marlett, JA. Content and composition of dietary fiber in 117 frequently consumed foods. J Am Diet Assoc 92:175-186, 1992.

**Adapted from Anderson, JA and Bridges, SR. Dietary fiber content of selected foods. Am J Clin Nutr 47:440-447, 1988.

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