

High Fiber

WHAT IS DIETARY FIBER?

Dietary fiber is found only in plant foods. It is composed of a group of structurally related substances: cellulose, hemicelluloses, lignin, gums and pectins. Good sources of dietary fiber include whole grains, vegetables, fruit, nuts and seeds. Meat, fish, poultry, eggs, dairy products, fats, oils and sugar contain no dietary fiber.



WHY SHOULD WE INCLUDE DIETARY FIBER IN OUR DIETS?

Some of the benefits of dietary fiber are to increase fecal bulk, soften stools, stimulate the healthy movement of foodstuffs through the digestive tract and assist the muscles of the digestive tract. Consuming high fiber foods thus may help prevent and treat constipation. In addition, researchers have shown that dietary fiber can play an important role in the prevention or treatment of various diseases and disorders. These include obesity, diabetes, cardiovascular disease, colon cancer, diverticular disease and irritable bowel syndrome, as well as constipation.

WHAT ARE SOLUBLE AND INSOLUBLE FIBERS?

Dietary fiber is frequently classified as *soluble* or *insoluble*. Soluble fibers dissolve in water and consist of pectins, gums and some hemicelluloses. Insoluble fibers do not dissolve in water and consist of cellulose, lignin and some hemicelluloses. Soluble fiber has been shown to be effective in reducing the risk of cardiovascular disease and diabetes by reducing total blood cholesterol and regulating blood sugar levels. Insoluble fiber has been shown to be effective in reducing the risk of colon cancer, preventing diverticular disease and treating constipation.

WHAT ARE SOME SOURCES OF SOLUBLE AND INSOLUBLE FIBERS?

Ideally, we should incorporate both soluble and insoluble fibers in our diets. Good sources of soluble fiber include oats, barley, legumes (dried beans and peas) and some vegetables and fruits. Good sources of insoluble fiber include whole grain products (breads, cereals, rice, pasta), nuts, seeds and some vegetables.

HOW MUCH DIETARY FIBER SHOULD WE CONSUME EACH DAY?

Experts are now recommending a dietary fiber intake in the range of 20 - 35 grams/day for the healthy adult. The average American consumes between 10 - 20 grams/day - well below the current recommendations.

CAN PROBLEMS ARISE FROM EATING TOO MUCH DIETARY FIBER?

Yes. Dietary fiber, if increased suddenly, can cause gas, diarrhea and bloating. It should be added gradually, allowing time for your body to adjust to the extra fiber. For example, begin by increasing your fiber intake to 20 grams/day; allow a few days for adjustment, and then increase it to 25 grams/day. As you add fiber to your diet, it is very important to drink plenty of fluids, since fiber draws water into the intestines. Health care providers recommend at least eight glasses of water each day. Although excessive intakes of dietary fiber may interfere with the absorption of some nutrients, moderate intakes (i.e., 20 - 35 grams/day) do not appear to pose a problem for the healthy adult.

Dietary Fiber Content of Common Foods

Grain Products	Amount	Dietary Fiber (g)	Calories
Bagels (Cinnamon Raisin, Plain, Blueberry, Egg)	1 whole bagel	2.0	280
English Muffin, Whole Wheat	1 whole	4.4	134
Roll, Whole Wheat	1 roll	1.6	101
Popcorn, air-popped, no butter	3 cups	4.5	115
Bran Muffins	1 muffin	0.0 - 4.0	~104
Bread, French	1 slice	0.6	81
Bread, Oatmeal	1 slice	0.6	71
Bread, Pita	1 pocket	0.3	106
Bread, Whole Wheat	1 slice	1.6	61
Rice, Brown (cooked)	1 cup	3.3	216
Spaghetti, Whole Wheat	1 cup	4.5	174
Spaghetti (cooked)	1 cup	2.2	197
Cornbread	2 x 2 piece	.95	141
Tortilla (Corn)	1	1.0	67

Breakfast Cereals	Amount (cup)	Dietary Fiber (g)	Calories
All-Bran Extra Fiber™	1/2	13.0	50
All-Bran™	1/3	10.0	70
Bran Buds™	1/3	8.0	70
Bran Chex™	2/3	6.1	90
Corn Bran™	2/3	5.4	109
Corn Flakes	1	1.0	100
Frosted Mini-Wheats™	1/2	3.0	100
Granola-type	1/4	2.0	120
Granola-type (low fat)	1/4	1.0 - 3.2	120
Nutri-Grain™	2/3	3.0	140
Oatmeal	3/4	1.6	108
Bran Flakes	3/4	5	100
Cracklin Oat Bran™	3/4	6	190
Wheaties™	1	3.0	110
Smart Start™	1	2	180
Grape Nuts™	1/2	5	200
Kashi Medley™	1/2	2	100
Fiber One™	1/2	14	60
Raisin Bran	3/4	5.0	120

Legumes (Beans)	Amount (cup)	Fiber (g)	Calories
Baked (cooked), canned	1	6.0 - 10.0	250
Black Beans (cooked)	1	7.2	227
Kidney (cooked)	1	6.4	225
Lentils (cooked)	1	7.9	231
Lima (cooked)	1	13.5	217
Navy (cooked)	1	6.6	259
Pinto Beans (cooked)	1	6.8	235

Crackers	Amount	Fiber (g)	Calories
Wheat Thins™	16 crackers	2	140
Wheatables™	16 crackers	1	150
Triscuit™	7 crackers	4	140
Saltines	8 crackers	.74	100
Whole Wheat Crackers	7 crackers	2.9	134

Nuts and Seeds	Amount	Fiber (g)	Calories
Almonds	22 nuts/1 oz.	3.1	176
Cashews	18 nuts/1 oz.	1.7	163
Filberts (hazelnuts)	1 oz.	1.8	187
Peanuts	1 oz.	2.2	184
Pecans	15 halves/1 oz.	1.8	190
Popcorn, popped with oil	2 1/2 cups	2.8	142
Sunflower seeds	1 oz.	1.9	75
Peanut butter	2 tbsp.	1.9	190
Walnuts	14 halves/1 oz.	1.3	182

Vegetables	Amount	Fiber (g)	Calories
Broccoli (raw)	1/2 cup	1.2	12
Cauliflower	1/2 cup	1.3	13
Asparagus	1/2 cup	1.9	23
Green Beans	1/2 cup	1.9	23
Carrot (raw)	1 medium	2.3	31
Celery (raw)	1 stalk	0.6	6
Corn	1/2 cup	1.7	67
Cucumber (sliced)	1/2 cup	0.5	7
Lettuce (shredded)	1 cup	0.4	6
Potato (with skin)	1 large	8.52	310
Mushrooms	1/2 cup	.34	13
Spinach (boiled)	1/2 cup	2.0	21
Greens, Collard	1/2 cup	2.0	30
Tomato (raw)	1 medium	1.6	26
Zucchini (raw)	1/2 cup	0.3	9

Fruit	Amount	Fiber (g)	Calories
Apple (with skin)	1 medium	3.0	81
Banana	1 medium	1.8	105
Cantaloupe	1 cup	1.3	57
Grapefruit	1/2 medium	0.7	37
Peach (with skin)	1 medium	1.4	37
Pear (with skin)	1 medium	4.3	98
Honeydew melon	3/4 cup	.8	46
Grapes	1 cup	1.6	114
Pineapple	1 cup	1.8	76
Strawberries	1 cup	3.9	45

EXAMPLE OF A HIGH FIBER MEAL PLAN

Breakfast	1 cup water, 1 bran muffin, 1 cup milk, 3/4 cup oatmeal, 1 orange
Lunch	2 slices pumpernickel bread, 2 oz. turkey w/sprouts and tomato, 1 apple, 1 cup yogurt w/fruit, 2 Fig Newtons™, 1 cup iced tea
Dinner	1 chicken breast, 1 cup brown rice, 1/2 cup broccoli, 1 serving carrot salad, 1 whole wheat dinner roll, 1 cup herbal tea
Snacks	3 cups popcorn, 1 cup lemonade, 4 graham crackers, 1 cup milk

ADDITIONAL SUGGESTIONS TO HELP ALLEVIATE CONSTIPATION

1. Eat regular meals, allowing time to completely chew food.
2. Drink plenty of non-caffeinated fluids throughout the day. Drink your first fluid upon arising.
3. Incorporate regular exercise on a daily basis.
4. Never neglect the urge to have a bowel movement. It is important to give this immediate attention.

References:

Nutritionist Five, Nutrition Analysis Computer Software Program, First Data Bank; <http://www.firstdatabank.com>, 1998

If you are a registered University of Illinois student and you have questions or concerns, or need to make an appointment, please call: **Dial-A-Nurse at 333-2700**

If you are concerned about any difference in your treatment plan and the information in this handout, you are advised to contact your health care provider.

Visit the McKinley Health Center Web Site at: <http://www.mckinley.uiuc.edu>