

Whole Grains

Currently most Americans consume less than a single serving of whole grains daily. The Dietary Guidelines for Americans 2005 recommends eating 6 ounces of grain products every day, and at least half of this amount should be whole grains.

This recommendation is based on a 2,000-calorie diet; therefore, you may need to eat more or less, depending on your calorie level. Go to www.MyPyramid.gov for your personal plan according to age, sex and activity level.

Whole grains are important sources of fiber and other nutrients. Consuming a diet rich in whole grains, as part of an overall healthy diet, may reduce the risk for:

- coronary heart disease.*
- high blood cholesterol.
- certain types of cancers.
- type 2 diabetes.
- constipation and diverticulosis.
- being overweight (when eating at least 3 ounce equivalents of whole grains daily).**
- a woman having a baby with a spinal cord or brain defect.

*In a study funded by USDA Agricultural Research Service (ARS), women with a history of heart disease who ate six or more servings of whole grains weekly had slower progression of atherosclerosis. That is a condition in which plaque builds up and narrows the passageways through which blood flows.

**In another recent ARS study, people who ate at least three servings of whole-grain foods per day were less likely to have metabolic syndrome. That is a condition marked by a combination of abdominal obesity, high triglycerides, low HDL “good” cholesterol, high blood pressure, and poor

blood sugar control—all of which increase risk for diabetes and heart disease.



FOODS IN THE GRAINS GROUP

Grains are represented by the orange band on MyPyramid, USDA’s latest food guide, which shows that foods from all groups are needed daily for good health.

The grains group includes any food made from wheat, rice, oats, cornmeal, barley or other cereal grain. Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits are examples of grain products.

TWO SUBGROUPS OF GRAINS

Whole grains contain the entire grain kernel—the bran, germ, and endosperm. The outer covering is the part that contains the grain’s fiber and many of its vitamins and minerals.

At least half of the grain foods you eat should be whole grains. Some common whole grains are: whole wheat flour, whole wheat bread, whole wheat crackers, whole wheat pasta, whole wheat sandwich buns and rolls, whole wheat tortillas, bulgur (cracked wheat), whole grain barley, whole grain, whole rye, oatmeal, whole grain cornmeal, buckwheat, brown rice, wild rice and popcorn.

In addition, there are ready-to-eat breakfast cereals such as whole wheat cereal flakes, muesli and Kasha (buckwheat groats). Groats are buckwheat kernels that are stripped of their inedible outer coating and then crushed into smaller pieces.

Note: Wheat flour, enriched flour, and de-germinated cornmeal are *not* whole grains.

Refined (Processed) grains have been milled, which removes the bran (fiber-rich outer layer) and the germ (nutrient-rich inner part). This gives them a finer texture and improves shelf life, but it also removes dietary fiber, iron, and many B vitamins and minerals.

Most refined grains are enriched by adding back certain B vitamins and iron during or after processing. However, fiber and many other micronutrients are not added back, so they are not nutritionally equal to whole grains.

Although the food industry is working to increase the availability of whole grain products, most breads and cereals sold today are still made with refined flours. Some common examples of refined grains include: white flour, white bread, white sandwich buns and rolls, white rice, corn or flour tortillas, de-germinated cornmeal, cornbread, couscous, crackers, grits, noodles, spaghetti, macaroni, pitas, pretzels, and ready-to-eat corn flakes.

NUTRIENTS IN GRAINS

Whole grain foods provide energy, a wide variety of vitamins and minerals, antioxidants, phytochemicals and dietary fiber. All of these nutrients are vital for the health and maintenance of our bodies.

Whole Grains Contain Several Nutrients:

Dietary fiber—helps reduce blood cholesterol levels, may lower risk of heart disease, helps reduce constipation and diverticulosis, and helps provide a feeling of fullness with fewer calories. Whole grains are good sources of dietary fiber, but most refined (processed) grains contain little fiber.

Thiamin (vitamin B1)—helps produce energy from carbohydrates in all body cells.

Riboflavin (vitamin B2)—helps produce energy in all body cells, and helps change tryptophan, an amino acid, into niacin.

Niacin (a B vitamin)—helps the body use sugars and fatty acids, helps enzymes function normally in the body, and help produce energy in all body cells.

Folate (folic acid)—helps the body form red blood cells, and is important during pregnancy to reduce a woman’s risk of having a baby with a spinal cord or brain defect.***

Iron—carries oxygen in the blood and reduces risk of iron-deficiency anemia.

Magnesium—builds bones and releases energy from muscles.

Selenium—protects cells from oxidation and helps build a healthy immune system.

Phytochemicals—help protect against diseases, serve as antioxidants, detoxifiers, immune boosters and anti-inflammatories. Inflammation plays a major role in heart attacks, some cancers, allergies, Alzheimer’s, and autoimmune diseases.

***In 1998 the United States began a folic acid fortification program, requiring that folic acid be added to many common grain and cereal products: some breakfast and ready-to-eat-cereals, enriched flours, breads, pastas, crackers, corn grits, cornmeal, rice, macaroni, and other grain products. This has helped to increase consumption of folic acid.

In addition to folic acid, enriched refined grain products that conform to standards of identity are required by law to be fortified with thiamin, riboflavin, niacin and iron.

HOW MUCH IS NEEDED?

Most Americans consume enough grain products, although few are whole grains. MyPyramid and The Dietary Guidelines for Americans 2005 recommend eating about 6 ounces of grains per day. At least half of that amount, or 3 ounces, should be whole grains. This is based on a 2,000 calorie diet. The exact amount you need depends on your age, sex, and level of physical activity.

DAILY GRAIN NEEDS			
	Age	Ounces or Ounce Equivalents	Ounces From Whole Grains
Children	2-3 years	3	1½
	4-8 years	4-5	2-2½
Girls	9-13 yrs.	5	3
	14-18 yrs.	6	3
Boys	9-13 yrs.	6	3
	14-18 yrs.	7	3½
Women	19-50 yrs.	6	3
	51+ years	5	3
Men	19-30 yrs.	8	4
	31-50 yrs.	7	3½
	51+ years	6	3

The amounts shown on the chart are appropriate for people who get less than 30 minutes per day of moderate physical activity, beyond normal daily activities. If you are more physically active, you may be able to eat more while staying within your calorie needs.

WHAT COUNTS AS AN OUNCE?

1 ounce=1 regular slice of bread

1 cup of breakfast cereal (approximately)

½ cup cooked rice, cereal or pasta

Other amounts that count as one ounce equivalents:

Bagel: ½ “mini”

Biscuit: 1 small (2” diameter)

Bread: 1 small slice French, 4 snack-size slices rye

Cornbread: 1 small piece (2½” x 1¼” x 1¼”)

Crackers: 7 square saltines, 5 whole wheat, 2 rye crisp breads

Muffin: 1 small (2½” diameter)

English muffin: ½ muffin

Oatmeal: ½ cup cooked, 1 packet instant, or 1 ounce dry (regular or quick)

Pancakes: 2 small (3” diameter), 1 regular (4½” diameter)

Popcorn: 3 cups, popped

Ready-to-eat breakfast cereal: 1 cup flakes or rounds, or ¼ cup puffed

Rice: ½ cup cooked, or 1 ounce dry

Pasta—spaghetti, macaroni, noodles: ½ cup cooked, or 1 ounce dry

Tortillas: 1 small (6” diameter), flour or corn

It is important to recognize what counts as one serving, or a one ounce equivalent, because most Americans are used to eating much more than that.

The following larger portions are more common:

4 ounce equivalents—a large bagel, a 12” tortilla or a microwave bag of popcorn (popped);

3 ounce equivalents—3 pancakes (4½” diameter) or a muffin (3½” diameter);

2 ounce equivalents—a 3” biscuit or a medium piece of cornbread (2½” x 2½” x 1¼”).

WHOLE GRAIN TIPS FOR CHILDREN

- Young children may have difficulty eating three servings of whole grains every day, so gradually increase whole grains in their diets as they grow.

- Parents, you are role models for your children. Set a good example by eating whole grains at mealtime or as snacks.
- Let children select and help prepare a whole grain side dish.
- Teach older children to read the ingredient list on cereals and snack food packages, choosing those with whole grains at the top of the list.
- Many foods that children already like to eat contain healthy whole grains. Instant oatmeal and popcorn are great sources of whole grains and fiber.

EASY WAYS TO GET WHOLE GRAINS

- Look for whole grain products to replace the refined products that you are already eating. For example, eat whole wheat bread rather than white bread.
- Stock your pantry with staple items made from whole grains: whole wheat cereals, brown rice, low fat whole wheat crackers, breads and rolls.
- For breakfast, enjoy cooked oatmeal or packaged whole grain cereals, choose whole grain toast instead of white bread, and bake whole grain muffins for breakfast on the go.
- At least once a week, try a low-fat meatless meal or main dish that features whole grains. Examples: vegetable stir-fry, red beans over brown rice, or spinach lasagna.
- Eat brown rice rather than white rice. Use brown rice in stir fry or to make stuffing for baked green peppers or tomatoes.
- Mix wild rice, brown rice, barley, broth and spices to create a whole grain pilaf. Toasted nuts or chopped dried fruit can be added for a special touch.
- For a quick side dish, freeze leftover cooked brown rice, bulgur, or barley. Reheat and serve in minutes.
- Make macaroni and cheese with whole wheat pasta.
- Use whole grains in mixed dishes, such as barley in vegetable soup or stews, and bulgur wheat in casseroles or stir-fries.
- Make meatloaf with whole grain bread or cracker crumbs.

- Rolled oats or a crushed, unsweetened whole grain cereal makes a delicious breading for baked chicken, fish, veal cutlets, or eggplant parmesan.
- Try substituting an unsweetened, whole grain ready-to-eat cereal for the croutons in your salad or the crackers in soup.
- Need a quick, delicious snack? Try a whole grain snack chip, like baked tortilla chips or a ready-to-eat, whole grain cereal, such as toasted oat cereal. Another healthy whole grain snack is popcorn, but it should be eaten with little or no added salt and butter.
- Substitute whole wheat or oat flour for up to half of the flour in pancakes, waffles, muffins and other flour-based recipes. More leavening may be needed.
- When making cookies or other baked treats, add whole grain flour or oatmeal. Up to 1/3 of the flour can be replaced with quick or old fashioned oats.

NUTRITION TIDBITS

- Health experts recommend that adults consume 20 to 35 grams of dietary fiber daily. The following simple food choices quickly add up to over 20 grams of fiber:

Food Choices	Grams of Fiber
Breakfast	
1 oz. bran flake cereal	4.0
1 medium banana	2.4
6 oz. orange juice	0.5
Lunch	
1 sandwich (2 slices whole wheat bread)	3.0
2 cookies (fig bars)	2.0
1 large pear, with skin	6.2
Dinner	
Spaghetti (1 cup pasta)	1.1
1¾ cup salad (mixed greens with carrots, broccoli, kidney beans)	7.1
Total	26.3

- Gradually add fiber-rich whole grains to your diet so that your digestive system can adjust. Too much fiber all at once may cause bloating, flatulence (gas), diarrhea, and/or cramping. Drink plenty of liquids and chew foods slowly to break down the fiber and

enable the digestive system to work smoothly and comfortably.

- Compare the grams of dietary fiber provided per serving on packaged foods. If the product provides at least 2.5 grams of fiber per serving, it is a good source of fiber. If it contains 5 or more grams of fiber per serving, it is high in fiber and can make that claim on the package.
- Choose a whole grain breakfast cereal (hot or cold) that provides at least 3-4 grams of fiber per serving, no more than 8 grams of total sugar, and less than 3 grams of fat.
- Read the ingredient list on food labels to help you identify whole grain foods. Choose foods that list a whole grain as the first ingredient. If a whole grain like whole wheat, brown rice, oatmeal or corn is listed first, that product contains a significant amount of whole grain.
- To determine whether a product is made from a whole grain, always look for the word “whole.” Check the ingredient list for the words “whole grain” or “whole wheat.” Look for “100% whole wheat” on the package when buying bread and other whole wheat products.
- Foods labeled with the following words are usually *not* whole grain products: “multi-grain,” “stone-ground,” “100% wheat,” “cracked wheat,” “seven-grain,” or “bran.” “Multi-grain” only means that the product contains more than one grain, and “wheat” only means that it is made with wheat.
- Use the Nutrition Facts label to select products with a higher % Daily Value for fiber. The % Daily Value (%DV) is a good clue to how much whole grain is in a food.
- Look for this whole grain health claim on food packages: “Diets rich in whole grain foods and other plant foods and low in total fat, saturated fat, and cholesterol may reduce the risk of heart disease and certain cancers.” Packaged foods that bear the whole grain health claim are required by the Food and Drug Administration to be low in fat and contain at least 51% whole grain ingredients by weight.
- Some food products are made from mixtures of whole grains and refined grains.

- When buying a refined grain product, check the ingredient list to make sure that the word “enriched” is included in the grain name. This ensures that at least some of the nutrients lost in refining have been added.
- Color is not an indication of a whole grain. For example, molasses or other added ingredients can cause a bread to be brown. Always read the ingredient list to see if it is a whole grain.
- Most sodium in the food supply comes from packaged foods. Breads, like other packaged foods, can vary widely in sodium content. Use the Nutrition Facts label to choose foods with a lower % DV for sodium.
- Foods with less than 140 mg sodium per serving can be labeled as low sodium food. If the front of a food label has claims like “low in sodium” or “very low in sodium,” that food contains less salt (or sodium).
- Many teenage girls and women of childbearing age have iron-deficiency anemia. To prevent anemia, it is helpful to eat foods high in heme-iron (meats) or other non-heme iron containing foods like whole and enriched refined grain products. The

absorption of non-heme iron is improved by eating foods rich in vitamin C along with it.

- Whole grains fill you up, not out. This may help with weight management, because they are rich in fiber and complex carbohydrates yet low in fat. Go lightly on added oils, butter, margarine, sugars and syrups.

GRAINS SHOPPING LIST

Plan ahead. Buy a variety of nutrient-rich food for meals and snacks throughout the week. Take this basic grains shopping list with you every time you go to the grocery store:

- brown rice
- whole grain pasta
- shredded wheat
- oatmeal
- barley
- whole grain bread
- whole wheat flour
- whole grain mix
- whole grain granola bars
- whole grain waffles, bagels, and muffins
- cornmeal
- graham crackers or oatmeal cookies

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