



**Wheat Foods**  
COUNCIL  
wheatfoods.org

wheat from **farm** to **fork**

# Nutrition

Once it is consumed, **wheat** energizes the body, delivering essential nutrients to its cells. Grain products, whole or **enriched**, are a premier source of energy-providing carbohydrates and a good source of fiber, the major B vitamins (thiamin, niacin and folic acid) and iron.

The 2005 **Dietary Guidelines** recommend Americans eat at least five to ten ounces of grain foods such as bread, cereal, rice and pasta each day (depending on age, gender and activity level), with at least half of them coming from whole grain foods.

*One ounce is about 1 slice of bread, 1 cup of dry breakfast cereal, or ½ cup of cooked rice, pasta or cereal.*

## Carbohydrates

Grains are chosen as the foundation of a healthful diet because it is recommended people eat at least 45 percent of total calories in the form of **carbohydrates**, and grains are one of the best sources of complex carbohydrates. Carbohydrates help to energize the body.

Complex carbohydrates are starches and fiber such as those found in grain products and some vegetables (potatoes and corn). Complex carbohydrates break down slowly during digestion, giving the body a time-released source of energy.

## Fiber

Grain products, fruits, vegetables and legumes are good sources of **fiber**. There are two types of dietary fiber: insoluble and soluble.

Enriched white flour products contain some soluble fiber, which has been shown to lower blood cholesterol levels when eaten as part of a low-fat diet.

Whole-wheat products and bran are important sources of insoluble fiber, which acts as a bulk producer to help reduce the risk of constipation and diverticular disease.

## Whole Grain vs. Enriched Grain Nutrition

Whole-grain products are made with the whole kernel of grain, which includes the bran, endosperm and germ, and enriched grain products are made with the endosperm only.

The bran (outer layer) contains the largest amount of fiber, the endosperm (middle layer) contains mostly protein and carbohydrates along with some B vitamins, and the germ (inner part) is a rich source of trace minerals, unsaturated fats, B vitamins, antioxidants and phytochemicals.

To identify whole-grain foods, look to see that the first item listed in the ingredient list is referred to as “whole” such as whole-wheat flour or whole-oat flour.

## Whole Grain Nutrition

Whole-grain foods are good sources of B-vitamins, vitamin E and protein, and contain more trace minerals and dietary fiber than enriched grain products.

Whole grains contain antioxidants and other healthy plant-based nutrients. Whole grains contain protective antioxidants in amounts near or exceeding those in some fruits and vegetables. They also provide some plant-based antioxidants not found in other foods.

Studies have shown that eating more whole grains may help reduce the risk of heart disease, cancer and diabetes. New studies published in 2005 and 2006 show that whole grains may help lower triglycerides, improve insulin control, help in weight management, and slow the build-up of arterial plaque.

## Enriched Grain Nutrition

Enriched grain products contain iron and B-vitamins (thiamin, niacin, riboflavin and folic acid) in amounts equal to or exceeding that in whole-wheat flour.

Enriched grain products have more than twice the amount of **folic acid** as whole wheat.

White flour has been enriched since 1941 with iron and the B vitamins, riboflavin, niacin and thiamin. With this enrichment, pellagra and beriberi have been eradicated from the United States.

In 1998, a fourth B vitamin, folic acid, was added to the enrichment formula. As of 2002, a study showed that neural tube defects have decreased by 23 percent following the folic acid fortification in the U.S. grain food supply.

