Can Whole Grain Food Help You Manage Weight?

Whole grains vs. refined grains in weight management

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Nalin Siriwardhana, Ph.D., interviewed J. Phil Karl MS, RD, CSSD, LDN., an expert in Biochemical and Molecular Nutrition from Friedman School of Nutrition Science and Policy Tufts University. Reviewed by Dr. Edward Saltzman MD, Associate Professor of Medicine, Tufts University School of Medicine.

Whole grain foods have many health benefits including protection against cardiovascular disease, high blood pressure and type 2 diabetes (T2D). Recently, the possibility that whole grains have a beneficial role in weight management has gained significant attention. However, the current scientific evidence is mixed with some studies showing benefits and some studies showing no effects of whole grains on body weight. In general, more detailed and focused scientific studies are needed to clearly determine the role of whole grains in weight management.

Whole grains can improve dietary quality during weight loss, and consumers should continue to replace refined grains with whole grains because of the higher nutrient content of whole grains and the beneficial effects of whole grains on other aspects of health. However, consumers can be easily confused with advertising and labeling of whole grain foods due to intense market competition. Therefore, a clear understanding about whole grains and whole grain food is important.

![Whole grain kernel diagram](image)
Nutrition Remarks interviewed J. Phil Karl MS, RD, CSSD, LDN, to better explain the differences between whole grain vs. refined grain foods as well as potential benefits in weight management. Below is a concise summary of the interview:

Question from Nutrition Remarks: How do you like to define whole grain food and what are the most commonly used whole grain and refined grain food?

Answer from Phil: Whole grains and whole grain foods contain all 3 fractions of the grain; the endosperm, germ and bran. The term whole grain refers to both the intact grain and grains that have been milled or processed in other ways but contain all of the endosperm, germ and bran. In contrast, refined grains are mostly endosperm with some or all of the germ and bran separated and removed.

Both whole grains and refined grains can be eaten alone or used as ingredients in a variety of foods. For example oats and brown rice are whole grains, while white rice is a refined grain. Many foods such as breads, muffins, bagels, pasta, crackers, breakfast cereals, and grain-based desserts are made from whole grains, refined grains or a mixture of the two. A whole grain food is often considered a grain-based food that lists a whole grain as the first ingredient on the ingredient label. In these foods at least 51% of the grain used is whole grain.

In the United States wheat is the most commonly consumed grain. However, oats, corn, and rice are also commonly consumed. In other parts of the world grains such as millet, barley, and rye are widely consumed.

Question: What consumers need know about available whole grain products and how they should choose to better fit their needs such as diabetes, obese and heart conditions?

Answer: To identify the most healthy whole grain foods consumers need to read nutrition labels. A whole grain should be listed as the first ingredient in the food, and the ratio of grams of total carbohydrate to grams of fiber should be ≤ 10 to 1 (this ratio can be checked by dividing the grams of total carbohydrate by the grams of fiber listed on the nutrition facts panel). When whole grain is listed as the first ingredient, foods are likely to contain lesser amounts of unhealthy fats, added sugars and salt. In general, these whole grain foods are more likely to contribute to reducing risk for developing conditions such as cardiovascular disease and type 2 diabetes. Another consideration is whether the grain is intact or if the grain has been processed and the endosperm, germ and bran has been recombined. Some scientists believe that the intact form of grain is more likely to benefit health.

Looking for food products that display “made with whole grains” or that contain the whole grain stamp icon on the label can help identify foods that contain whole grains, but including whole grain ingredients in a food is not a guarantee that unhealthy ingredients are not present. Some of these foods can be high in unhealthy fats and added sugars so the ingredients label and nutrition facts panel still should be checked.
**Question:** What is the scientific basis for existing recommendations for whole grain food over refined grain food?

**Answer:** The 2010 Dietary Guidelines for Americans recommends that consumers make at least half of their grain servings whole grains. For an average American, this translates into about 3 slices of bread or 1½ cups of pasta made from 100% whole grain flour per day. The basis for this recommendation is that people who eat higher amounts of whole grains have a lower risk of heart disease, type 2 diabetes, and obesity.

**Question:** What are the healthy food components contained in whole grain food?

**Answer:** Healthy components of whole grains include fiber, starch, vitamins, minerals, antioxidants and a number of other additional plant nutrients thought to have health benefits. Whole grains contain more of these nutrients than refined grains because these nutrients are concentrated in the bran and germ. Some of these nutrients have been shown to have beneficial health effects such as reducing LDL cholesterol levels, inflammation, colon cancer risk and blood pressure.

**Question:** Why do refined grain foods not contain those compounds?

**Answer:** The germ and bran are concentrated sources of nutrients in whole grains. Since refined grains are mainly endosperm they have lower amounts of the nutrients contained in germ and bran. In the United States, enrichment of refined grains adds back iron and B-vitamins, but not all of the nutrients that are lost during refining.

**Question:** Are there any known harmful components in refined grain food?

**Answer:** Grains are healthy foods and important sources of many nutrients. Unfortunately, refined grains are often combined with ingredients we should be consuming less of such as unhealthy fats, added sugars and salt to make less healthy foods. However, whole grains are often combined with these ingredients as well. Substituting whole grains for refined grains in foods that contain high amounts of these ingredients does not make the food healthy.

**Question:** Can whole grain food actually help maintain or lose weight? If yes, how and what are the possible mechanisms?

**Answer:** Studies that observe what people eat and how much they weigh clearly show that people who eat more whole grains weigh less and that they probably gain less weight over time than people who eat few whole grains. However, people who eat more whole grains also tend to have healthier lifestyles in general, such as exercising more, smoking less, and eating more fruits and vegetables. Even though scientists try to account for all of these factors it is possible that these other healthy behaviors are responsible for people who eat more whole grains weighing less.
When people have been assigned to weight loss diets that include either refined grains or whole grains, eating more whole grains has not led to more weight loss. In these studies eating fewer calories, but not the type of grain in the diet, is what is important for weight loss. This is a little surprising because dietary fiber is higher in whole grains than refined grains, and has been shown to help with weight loss. However, substituting a few servings of whole grains for refined grains may not provide enough fiber to have a major impact on weight.

Many foods made from whole grain ingredients use processed grains that are not in their original intact form. The intact structure may be important for weight management because in combination with fiber intact grains influence how the body digests and absorbs nutrients. More research is needed to determine if substituting intact whole grains that are high in fiber for refined grains will help with weight management.

**Question:** Based on currently available scientific evidence, what is your opinion on whole grain and refined grain food in weight management and other health concerns?

**Answer:** Whole grains have higher amounts of healthful nutrients than refined grains, and people eating the most whole grains commonly have lower chronic disease risk. Consumers should therefore substitute whole grains for refined grains in their diets. However, consumers should be aware that not all foods made using whole grains have equal health benefits. Whole grains are increasingly being used in foods that contain high amounts of unhealthy fats, salt and added sugars. These foods are not beneficial to health and may play a role in weight gain. To get the most health benefit from whole grains consumers should look for foods that list whole grains as the first ingredient, are high in fiber, and contain intact grain seeds.

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