



COMMENTARY



## Whole Grains as an Antioxidant and its Health Benefits

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### Description

Whole grains provide a “complete package” of health benefits, in contrast to refined grains, which are stripped of essential nutrients in the purification process. Whole grains are the grains of any cereal and pseudo cereal containing endosperm, germ, and bran, unlike finely ground grains, which only retain endosperm [1].

As part of a normal healthy diet, whole grain consumption is associated with a lower risk of several diseases. Whole grains are a source of carbohydrates, many nutrients and dietary fiber. Whole grains are a source of many nutrients and dietary fiber, recommended for children and adults in a daily supply of a variety of foods that meet the rich grain process [2]. As components of breakfast cereals, whole grains are associated with improved micronutrient diets and lower risk of several diseases. Their effects on gastrointestinal health, the risk of obesity and cognition require further examination [3].

Cereal proteins are of low quality, due to a lack of essential amino acids, especially lysine [4]. Cereal supplementation with proteins from other food sources (especially legumes) is often used to compensate for this deficiency, since the limitation of a single essential amino acid causes the others to break down and become excreted, which is especially important during the period of growth [5]. In contrast, the proteins of the pseudo cereals have a high nutritional value, close to those of casein (the main protein in milk). Quinoa and Amaranthus are the most nutritious seeds because of their high content and high protein content, and high levels of lysine and other essential amino acids. Common varieties of whole grains include:

- Oatmeal
- Popcorn
- Millet
- Quinoa
- Brown rice
- Whole rye

- Wild rice
- Wheat berry
- Bulgur
- Buckwheat
- Freekeh
- Barley
- Sorghum

Products made from these foods are considered whole grains. This includes certain types of bread, pasta, and breakfast cereals.

### Health benefits of whole grain

**High in nutrients and fiber:** Whole grains deliver many important nutrients. These include:

- Fiber bran provides most of the fiber in whole grains.
- Whole grains are particularly high in B vitamins, including niacin, thiamine, and folate.
- They also contain a good amount of minerals, such as zinc, iron, magnesium, and manganese.
- Whole grains boast several grams of protein per serving.
- Many compounds in whole grains act as antioxidants. These include phytic acid, lignans, ferulic acid, and sulphur compounds.
- Whole grains bring many types of plant combinations that play a role in disease prevention. These include polyphenols, stanols, and sterols.

**Reduce your risk of heart disease:** One of the major health benefits of whole grains is that they reduce the risk of heart disease, which is the leading cause of death worldwide.

**Reduce your risk of stroke:** Grain can also help reduce the risk of stroke. In the analysis of 6 studies on approximately 250,000 people, those who ate whole grains had a 14% lower risk of stroke than those who ate very few [6]. In addition, certain cereals, such as fiber, vitamin K, and antioxidants, may reduce your risk of stroke.

**Lower your risk of type 2 diabetes:** Eating whole grains instead of refined grains may reduce your risk of type 2 diabetes [7]. A review of 16 studies concluded that eating at least 2 whole grains daily would reduce your risk of diabetes.

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