

The Nutrition of Whole Grains



Oats - are heart healthy and lower cholesterol

Quinoa - a complete protein



Millet - helps in the development and repair of body tissue

Whole Wheat - has choline and betaine that work together to fight inflammation



Brown rice - can reduce the risk of diabetes



Rye - helps control bloods sugar and appetite

Whole Grains Vs. Processed Grains*

The more whole grains are ground down into flour and refined, the more they become like sugar to your body. The closer whole grains come to being sugar-like, the more they will cause weight-gain, inflammation and blood sugar problems. This is why whole grains are healthier:

1. Diet-related illnesses: Illnesses like obesity, heart disease and diabetes have increased as people eat more and more processed foods. Now that trans fats are disappearing from food, processed carbs, especially processed grains cause the most problems for people.
2. Processing Grains: Flour comes from crushing a seed or grain, making the seed or grain easier to eat. However, grinding the germ inside a seed or grain releases its oils, and these oils quickly become rancid when exposed to air. So milling machines were built in the late 1800s to filter the germ from the endosperm. This made flour stay “fresh” and usable longer, but it also removed the nutrient-rich germ, making it act more like a sugar than a nutrient-packed grain. The outcome: two slices of whole wheat bread can raise blood sugar higher than six teaspoons of table sugar and higher than many candy bars.
3. Blood Sugar: Crushing a seed or grain takes out most of the nutrients, making it easier to eat and digest, but this ease in digestion causes the blood sugar to spike and insulin to rise. To be healthy and strong, the body needs to work a fair amount to digest what you eat.
4. Food Cravings: Grains have also been genetically modified, and these modifications cause people to crave more, increasing their appetites instead of helping them to feel satisfied. The result is that people eat 400 more calories every day than what they need.
5. Slowing the Metabolism: Since processed grains are digested faster, they have a high-glycemic-index, which slows down your metabolism and cause your body to store fat.
6. Inflammation: Eating a lot of refined or processed grains causes a glucose build up in the blood, and these glucose attach to nearby proteins. When glucose attach to nearby proteins, there is a chemical reaction called glycation, a pro-inflammatory process that brings on inflammatory diseases, from cataracts to arthritis to heart disease.
7. GI Disorders: When grains are refined, 80 percent of the fiber is lost, which is what slows down the release of carbs into your blood and keeps your digestive tract clean and healthy. Fiber helps to move things along in your intestines until they are eliminated, and this is a process that also keeps high cholesterol and inflammation away.
8. Food Allergies/Intolerances: No one knows why there are so many allergies, especially wheat and gluten allergies, but experts point to the fact that wheat has been modified to have more gluten to make it fluffier and softer.
9. Acid-Alkaline Imbalance: Your body works hard to keep your pH (acid alkaline) level balanced. Grains are acidic, so when you eat a lot of grains, your body is forced to take calcium from their bones to keep things balanced. A diet that is highly acidic wears away your cells' ability to fight off diseases, and this makes you vulnerable to chronic disease.

* (From Catherine Guthrie's “A Grain of Truth” in the July/August 2012 issue.)

The Nutrition of Whole Grains

Nutritional effects of refining or enriching wheat and rice

	Wheat			Rice		
	Whole ↕	Refined ↕	Enriched ↕	Whole ↕	Refined ↕	Enriched ↕
Calcium	100%	44%	44%	100%	100%	100%
Carbohydrates	100%	105%	105%	100%	104%	104%
Copper	100%	38%	38%	100%	79%	79%
Fiber	100%	22%	22%	100%	37%	37%
Folate (B₉)	100%	59%	350%	100%	40%	1155%
Food energy	100%	107%	107%	100%	99%	99%
Iron	100%	30%	120%	100%	54%	293%
Magnesium	100%	16%	16%	100%	17%	17%
Manganese	100%	18%	18%	100%	29%	29%
Niacin (B₃)	100%	20%	93%	100%	31%	82%
Pantothenic Acid (B₅)	100%	43%	43%	100%	68%	68%
Phosphorus	100%	31%	31%	100%	35%	35%
Potassium	100%	26%	26%	100%	52%	52%
Protein	100%	75%	75%	100%	90%	90%
Pyridoxine (B₆)	100%	13%	13%	100%	32%	32%
Riboflavin (B₂)	100%	19%	230%	100%	53%	53%
Selenium	100%	48%	48%	100%	65%	65%
Sodium	100%	40%	40%	100%	71%	71%
Thiamin (B₁)	100%	27%	176%	100%	17%	144%
Vitamin E	100%	5%	5%	100%	18%	18%
Zinc	100%	24%	24%	100%	29%	29%

How Flour From Grains Affects Every System in the Body

Brain: The proteins in wheat make their way into the brain and increase your appetite and cravings.

Blood: The simple sugars in flour cause bigger blood sugar spikes than almost any other food, even table sugar.

Pancreas: Blood sugar spikes force the pancreas to send out extra insulin to break down the extra glucose from flour-rich foods. This can cause your body to become insulin resistant or develop diabetes and body-wide inflammation.

Waistline: After weeks and months of blood sugar and insulin levels spiking and dropping, the body will begin to store fat around the abdomen. This is called visceral fat, and this extra fat is hormonally active, sending out inflammatory signals and sex hormones such as estrogen.

Gut: The cells that line the walls of your intestines weave together to make a barrier to keep undigested food from passing through. The protein, zonulin, can chip away at the gut's lining so that pieces of food can pass through the lining undigested, and wheat protein causes this zonulin to multiply. The result is that the body's immune system goes into chronic overdrive, causing food allergies and sensitivities because of gut inflammation.

Colon: Over time, the blood-sugar spikes and drops can damage the nerve cells that move particles along in the gut, and "eventually, transit time slows and traffic backs up" – constipation.

The Whole Grain

	100% Whole Grain Flours	Refined, enriched, or Processed Flours
Bran - fiber, B vitamins and trace minerals	Yes	No
Endosperm - starchy carb that acts like a sugar in the body	Yes	Yes
Germ - antioxidants, vitamin E, B vitamins and polyunsaturated fatty acids	Yes	No

7 Ways to Stay Away from Refined Grains

Whole grains give you fiber, healthy fats, vitamins, minerals, plant enzymes and hundreds of phytochemicals. Here are a few steps for choosing healthy grains:

1. Choose "unbroken" whole-kernel grains like wild rice, quinoa, millet, buckwheat groats, hulled barley and whole-wheat berries. Steel-cut oats are good too. Unbroken grains are heartier and more complex structures, which causes them to be slower to digest, less disruptive of blood sugar and more satisfying so you feel full longer.

If the ingredient says...	Is it Whole Grain?
Whole [name of grain] Whole [name of grain] flour Whole grain [name of grain] [name of grain] berries Stoneground whole [grain] Oats, oatmeal Whole white wheat Bulgur Graham flour	Yes These are all Whole Grain.
Wheat flour unbleached Semolina Durum wheat Organic flour Multigrain (may contain a mix of grains)	Maybe Some parts of the grain may be missing, so these products may lack the benefits of Whole Grain.
Enriched flour Degerminated Bran Wheat germ Pearled barley Grits, hominy, farina	No These are not Whole Grain ingredients.

Adapted from the Whole Grains Council

<http://www.lewisbakeries.net/why-eat-bread>

2. Try sprouted grains. Sprouting turns on beneficial enzymes, which change grains from static seeds to living foods and convert the seed's starch into maltose.

3. Replace part of the flour portion of a recipe with nut or seed meals made from ground almonds, cashews, coconut or flax. Nut and seed meals have more protein and fewer carbohydrates.
4. Use truly whole-grain flours that have everything, the bran, germ and endosperm, and use a variety of grains such as barley, buckwheat and oats to get a wider variety of nutrients.
5. Use gluten-free foods sparingly, because the flours that food companies use to replace wheat flour digest faster and end up being worse than wheat flour.
6. Try not eating foods with flour for a week, and see how you feel.
7. Since grains are not a requirement for life and health like protein is, think about cutting grains out of your diet completely.