

Rice and Heart Disease

January 2008

Heart disease kills more Americans than any other illness. Nearly 2,400 Americans die of heart disease each day, an average of one death every 36 seconds. According to the National Center for Health Statistics (NCHS), if all forms of major heart disease were eliminated, life expectancy would rise by almost seven years. Diet and exercise are significant contributors to the prevention and treatment of heart disease. Rice in general can be part of a heart-healthy diet because it is virtually fat free, cholesterol- and sodium-free, low in calories and contains nutrients that may help prevent heart attacks and stroke.

Enriched White Rice:

For instance, enriched white rice is a good source of folic acid, a B--vitamin that helps to reduce homocysteine, an amino acid that has been linked to heart disease. In fact, the Centers for Disease Control (CDC) have reported that since the inception of the folic acid grain enrichment program of 1998, blood homocysteine levels have been lowered by 14%, thereby reducing the number of deaths from heart disease by nearly 50,000 annually.

Brown Rice:

Brown rice, because it is a natural whole grain, contains additional nutrients that are heart healthy—vitamin E, manganese, selenium, chromium, iron, and fiber. In fact, in 1999, the Food and Drug Administration recognized the benefits of whole grain foods by approving the following health claim: *“Diets rich in whole-grain foods and other plant foods and low in total fat, saturated fat, and cholesterol may reduce the risk for heart disease and certain cancers.”*

Recent research shows that eating just 25 grams of whole grains a day reduces the risk of heart disease by about 15%. This finding comes from a large study of health professionals at the Harvard School of Public Health in Boston, MA, reported in the *American Journal of Clinical Nutrition*. Other studies have suggested a 20% to 30% decrease in the risk of heart disease when people eat three or more servings of whole-grain foods daily, writes lead researcher Majken K. Jensen, PhD, an epidemiologist with Harvard's School of Public Health. All 3 parts of whole grains—bran, germ, and endosperm--provide fiber that keeps arteries healthy. Scientists are finding that it is not just the bran and fiber, but all the nutrients in whole grain that provide the most benefit.

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A high intake of dietary fiber has been linked to a lower risk of heart disease in a number of large studies that followed people for many years. In a Harvard study of over 40,000 male health professionals, researchers found that a high total dietary fiber intake was linked to a 40% lower risk of coronary heart disease, compared to a low fiber intake. A related Harvard study of female nurses produced similar findings.

A cup of brown rice provides 14% of the daily value for fiber, which has been shown to reduce high cholesterol levels, one more way brown rice helps prevent atherosclerosis. A study published in the American Journal of Clinical Nutrition, which was a meta-analysis of 7 studies including more than 150,000 persons, showed that those whose diets provided the highest dietary fiber intake had a 29% lower risk of cardiovascular disease compared to those with the lowest fiber intake.

Whole grains are also important dietary sources of antioxidants. When consumed in whole foods (not supplements), antioxidants are associated with significant protection against cardiovascular disease. Because free radical damage to arteries appears to contribute significantly to the development of atherosclerosis, the broad range of antioxidant activities from the phytonutrients abundant in whole grains, like brown rice, is thought to play a strong role in preventing the buildup of cholesterol in the cardiovascular system.

A recent study showed that regular consumption of whole-grain cereal, including brown rice, cut the risk of heart failure for men. Compared to those who ate no whole-grain cereal, men who consumed 2 to 6 servings per week saw their risk of heart failure fall by 21%, while those who ate 7 or more servings per week reaped a 29% reduction in risk. That effect is due, in part, to the high levels of magnesium, potassium, and fiber in those breakfast cereals, said study co-author Dr. Luc Djousse, an associate in epidemiology at Brigham and Women's Hospital in Boston, MA.

Researchers found that middle-aged and older women who ate the most whole grains were less likely than those with the lowest intakes to develop high blood pressure. Women who consumed the most whole grains had an 11% lower risk of high blood pressure than those with the lowest intakes. The findings add to evidence of the cardiovascular benefits of whole grains such as brown rice. The fiber and other nutrients in whole grains may help lower cholesterol, blood sugar and insulin levels, as well as improve blood vessel functioning and reduce inflammation in the circulatory system. For this study, researchers at Harvard University in Boston used data from the Women's Health Study, which has followed nearly 40,000 U.S. female health professionals since 1992.

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Rice bran, which is the outer layer of the rice that is left intact on the brown rice and is discarded to produce white rice, has been found to help lower the unhealthy LDL cholesterol. It is still not known quite how this works, but they have found a component in brown rice called phytate which seems to be responsible for a number of things including lowering cholesterol and triglycerides.

A study published in the American Journal of Clinical Nutrition in August 2007 also indicated that brown rice may help to prevent high blood pressure. After a decade of studying it was discovered that eating just one daily serving of whole grains, such as brown rice, reduced the odds of developing high blood pressure by 4%,

Eating plenty of whole grains can help keep your arteries healthy, potentially preventing heart disease and stroke. In a diverse group of men and women participating in the Insulin Resistance Atherosclerosis Study, those with diets containing the largest amounts of whole grains had the thinnest carotid artery walls and showed the slowest progression in artery wall thickness or atherosclerosis over a 5 year period, reported lead author Dr. Philip B. Mellen of Wake Forest University School of Medicine in Winston-Salem, NC. Thickening of the lining of the carotid arteries, which deliver blood to the brain, signals atherosclerosis, the buildup of fatty substances and other material that increases the risk of heart attack and stroke.

Most Americans don't get enough whole grains. Fewer than 10% meet the USDA recommendation to consume three servings a day, while half don't eat any whole grains in a given day. In the Mellen's study, the average intake of whole grain was less than one serving a day. Mellen suggests adding a serving of whole grain to every meal.

Tips:

- Start your day with a whole grain, high fiber brown rice cereal.
- Eat 6 servings of grains each day—include enriched white rice
- Three of the grain servings should be whole grains such as brown rice
- To retain nutrients, do not rinse rice before or after cooking.
- Refrigerate leftover rice for later use. To reheat rice, add 2 tablespoons of liquid for each cup of cooked rice. Cover and heat on rangetop for 5 minutes or microwave on high for 1 minute and fluff with a fork.
- Enriched white rice can be stored indefinitely in a tightly covered container. Brown rice contains natural oils in the bran, so it will stay fresh in the pantry for about 6 months.

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