

# Whole grain diets lower risk of chronic disease

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Diets with high amounts of whole grains may help achieve significant weight loss, and also reduce the risk of chronic diseases such as diabetes and cardiovascular disease, according to a team of Penn State researchers at University Park and the College of Medicine.

"Consumption of whole grains has been associated with a lower body weight and lower blood pressure," said co-author Penny Kris-Etherton, distinguished professor of nutritional sciences at Penn State. "We thought that incorporating whole grains into a heart-healthy weight loss diet may provide the same benefits to people at risk from chronic diseases."

The researchers recruited 50 obese adults – 25 male and 25 female – between ages 20 to 65 and known to have metabolic syndrome, a cluster of symptoms that increase the risk of developing cardiovascular disease and diabetes.

They were randomly assigned to either a group that received instructions to have all of their grain servings from whole grains or all of their grain servings from refined grains.

"We asked participants in the whole grain group to focus on foods that had whole grains as the first ingredient," said lead author Heather Katcher, a Penn State Ph.D. recipient and currently a dietetic intern at Tulane University.

Over the 12-week study period, all participants received the same dietary advice on weight loss, and encouragement to participate in moderate physical activity. Researchers also asked participants to consume five daily servings of fruits and vegetables, three servings of low-fat dairy products, and two servings of lean meat, fish or poultry.

The study's findings are published in the January 2008 issue of the *American Journal of Clinical Nutrition*.

Results from the study showed that waist circumference and body weight decreased significantly in both groups – between 8-11 pounds on average – but weight loss in the abdominal region was significantly greater in the whole grain group.

According to Katcher, the whole grain group experienced a 38 percent decrease in C-reactive protein levels in their blood. A high level of this inflammatory marker is thought to place patients at a higher risk for diabetes, hypertension and cardiovascular disease.

"Typically you would expect weight loss to be associated with a decrease in C-reactive protein, but the refined grain group showed no decrease in this marker of inflammation even though they lost weight," said Kris-Etherton.

The Penn State researcher suggests that the finding is because the consumption of refined grains has been linked to increased levels of the protein. So even though people in the refined grain group lost weight, the fact that they ate so many refined grains probably negated the beneficial effect of weight loss on C-reactive protein levels.

While it is not fully clear how exactly the protein is decreased in the whole grain group, Richard Legro, M.D., professor of obstetrics and gynecology at Penn State Hershey Medical Center and a co-investigator,

says the scale of reduction is similar to that seen with the use of statin drugs, highlighting the potential of diet to prevent serious medical complications.

Participants in the whole grain group also showed an increased intake of fiber and magnesium, both of which may prevent or delay the potential onset of diabetes.

Researchers say the study is timely as it addresses the wide choice of whole grains in the market.

"There are a lot of foods around that claim they contain whole grain but are not really major sources of whole grain," said Kris-Etherton. She recommends whole grain foods where at least 51 percent of the grain comes from whole grain. These include oatmeal, whole grain cereal, brown rice, whole-wheat pasta and snacks such as granola bars, popcorn and whole-wheat crackers.

"This is the first clinical study to prove that a diet rich in whole grains can lead to weight loss and reduce the risk of several chronic diseases," added Kris-Etherton.

Source: Penn State

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