

A diet rich in slowly digested carbs reduces markers of inflammation in overweight and obese adults

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Among overweight and obese adults, a diet rich in slowly digested carbohydrates, such as whole grains, legumes and other high-fiber foods, significantly reduces markers of inflammation associated with chronic disease, according to a new study by Fred Hutchinson Cancer Research Center. Such a "low-glycemic-load" diet, which does not cause blood-glucose levels to spike, also increases a hormone that helps regulate the metabolism of fat and sugar. These findings are published online ahead of the February print issue of the *Journal of Nutrition*.

The controlled, randomized feeding study, which involved 80 healthy Seattle-area men and women – half of normal weight and half overweight or obese – found that among overweight and obese study participants, a low-glycemic-load diet reduced a biomarker of [inflammation](#) called C-reactive protein by about 22 percent.

"This finding is important and clinically useful since C-reactive protein is associated with an increased risk for many cancers as well as cardiovascular disease," said lead author Marian Neuhouser, Ph.D., R.D., a member of the Cancer Prevention Program in the Public Health Sciences Division at the Hutchinson Center. "Lowering inflammatory factors is important for reducing a broad range of health risks. Showing that a low-glycemic-load diet can improve health is important for the millions of Americans who are overweight or obese."

Neuhouser and colleagues also found that among overweight and obese study participants, a low-glycemic-load diet modestly increased – by about 5 percent – blood levels of a protein hormone called adiponectin. This hormone plays a key role in protecting against several cancers, including breast cancer, as well as metabolic disorders such as type-2 diabetes, nonalcoholic fatty liver disease and hardening of the arteries.

"Glycemic load" refers to how the intake of carbohydrates, adjusted for total grams of carbohydrate, affects blood-sugar levels. Lentils or pinto beans have a glycemic load that is approximately three times lower than instant mashed potatoes, for example, and therefore won't cause blood-sugar levels to rise as quickly.

Study participants completed two 28-day feeding periods in random order – one featuring high-glycemic-load carbohydrates, which typically are low-fiber, highly processed carbs such as white sugar, fruit in canned syrup and white flour; and the other featuring low-glycemic-load carbohydrates, which are typically higher in fiber, such as whole-grain breads and cereals. The diets were identical in carbohydrate content, calories and macronutrients. All food was provided by the Hutchinson Center's Human Nutrition Laboratory, and study participants maintained weight and physical activity throughout.

"Because the two diets differed only by glycemic load, we can infer that the changes we observed in important biomarkers were due to diet alone," Neuhouser said.

"The bottom line is that when it comes to reducing markers of chronic-disease risk, not all carbohydrates are created equal. Quality matters," she said. "There are easy dietary changes people can make. Whenever possible, choose carbohydrates that are less likely to cause rapid spikes in blood glucose." These types of low-glycemic-load carbs include [whole grains](#); legumes such as kidney beans, soy beans, pinto beans and lentils;

milk; and fruits such as apples, oranges, grapefruit and pears. Neuhouser also recommends avoiding high-glycemic-load carbohydrates that quickly raise blood glucose. These include highly processed foods that are full of white sugar and white flour, and sugar-sweetened beverages and breakfast cereals.

Provided by Fred Hutchinson Cancer Research Center

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