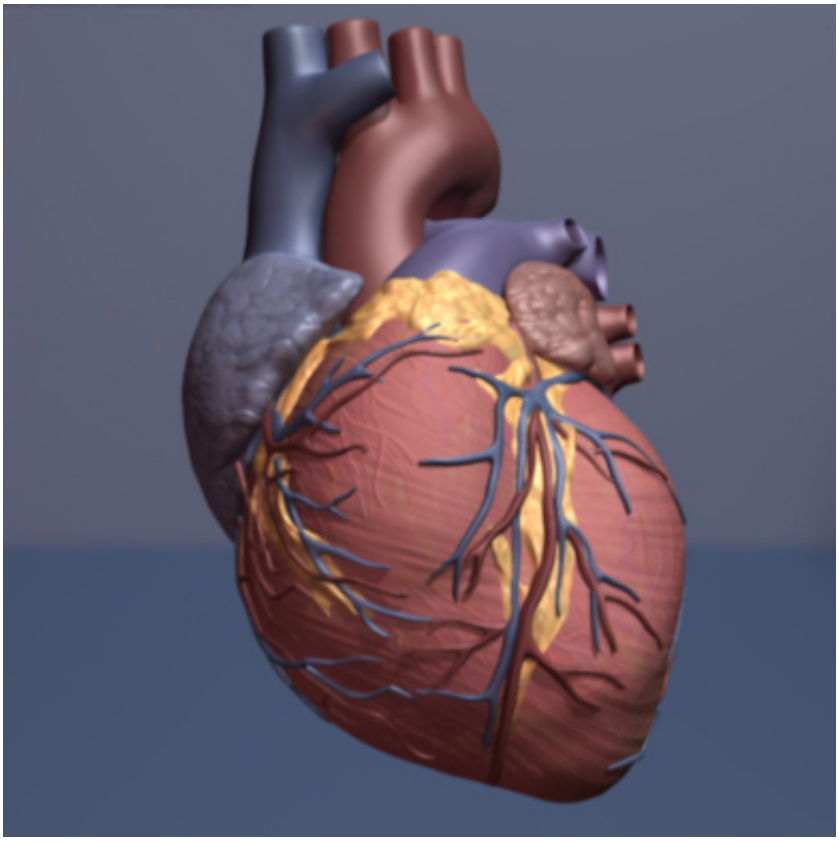
Study finds whole grain diet reduces cardiovascular disease risk

October 19 2016



Human heart. Credit: copyright American Heart Association

A team of Cleveland Clinic researchers, in collaboration with Nestle Research Center, conducted one of the largest controlled studies of its kind on whole grains and concluded that a diet rich in whole grains may significantly lower the risk of cardiovascular disease in overweight and

obese adults under the age of 50.

The findings, published in the *Journal of Nutrition* today, suggest that whole grains can be a key regulator of blood pressure, and could provide an effective nutritional strategy to reduce cardiovascular-related deaths and disorders.

"Heart disease and strokes are a leading cause of death in the United States. This research shows that eating whole grains reduces the risk of heart disease," said John Kirwan, Ph.D., principal investigator and director of the Metabolic Translational Research Center, which is part of Cleveland Clinic's Endocrinology & Metabolism Institute.

Researchers conducted a double-blind, randomized, controlled crossover trial. In the study, a group of 33 overweight and obese adults followed a whole grain diet (intervention) or a refined grain diet (control) for two eight-week periods. The diets were exactly the same, except for their content of whole grains or refined grains. At the beginning and end of each diet period, participants spent three days undergoing metabolic testing in a clinical research setting. Participants taking antihypertensive medication were instructed to maintain medication usage throughout the study.

While on the whole grain diet, participants saw a three-fold improvement in diastolic blood pressure (the lowest pressure when your heart relaxes between beats) compared to the refined grain diet. This improvement equates to reducing the risk of death from heart disease by almost one-third, and the risk of death from a stroke by two-fifths.

"The uniqueness of this study is that each of the 33 participants consumed both diets," said Kirwan. "This level of control can only be performed for small numbers and provides the essential empirical data that cannot be obtained from large observational studies. These evidence-

based data demonstrate the effect of diet on cardiovascular disease outcomes, particularly diastolic blood pressure."

Blood pressure is typically recorded as two numbers. Systolic is the top number that measures the pressure in the arteries when the heart beats. Diastolic is the bottom number, which measures the pressure in the arteries when the heart muscle is resting between heartbeats.

Hypertension - or high blood pressure - is a common obesity-related condition that affects about 30 percent of U.S. adults and it is a major risk factor for cardiovascular disease. Before age 50, an elevated diastolic blood pressure is associated with increased cardiovascular disease risk. As they age, people with elevated diastolic blood pressure are at a higher-than-average risk of developing elevated systolic blood pressure.

Overall, there were substantial reductions in body weight, fat loss, systolic blood pressure, total cholesterol, and LDL cholesterol during both diet periods, but these differences were due to the people changing their normal dietary habits to carefully controlled diets.

Provided by Cleveland Clinic