New study shows low-fat diets more likely to reduce risk of heart disease than low-carb diets

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Low-fat diets are more effective in preserving and promoting a healthy cardiovascular system than low-carbohydrate, Atkins'-like diets, according to a new study by researchers at the Medical College of Wisconsin in Milwaukee.

The study, published in the February edition of the scientific journal *Hypertension*, was led by David D. Gutterman, M.D., Northwestern Mutual Professor of Cardiology, professor of medicine and physiology, and senior associate dean of research at the Medical College. Shane Phillips, M.D., a former Cardiology faculty member at the Medical College, and now assistant professor in the department of physical therapy at the University of Illinois - Chicago, was the lead author.

Public awareness of the "obesity epidemic" has resulted in various dietary weight loss strategies. In America, it is estimated that 45 percent of women and 30 percent of men diet to lose weight.

"The nutrient-specific effects of these diets on cardiovascular health are largely unknown," says Dr. Gutterman.

"Low-carbohydrate diets are significantly higher in total grams of fat, protein, dietary cholesterol and saturated fats than are low-fat diets. While a low-carbohydrate diet may result in weight loss and improvement in blood pressure, similar to a low-fat diet, the higher fat

content is ultimately more detrimental to heart health than is the low-fat diet suggested by the American Heart Association," points out Dr. Phillips.

"The higher fat content of a low-carbohydrate diet may put dieters at an increased risk of atherosclerosis (hardening of the arteries) because low-carbohydrate diets often reduce protection of the endothelium, the thin layer of cells that line the blood vessels of the circulatory system. The reduced production from the endothelium of nitric oxide, a specific chemical, puts the vessel at higher risk of abnormal thickening, greater clotting potential, and cholesterol deposition, all part of the atherosclerosis process," says Dr. Gutterman.

Over a six-week period, the researchers found reduced flow-mediated dilation in the arm artery in participants who were on the low-carbohydrate diet. Reduced flow-mediated dilation, as measured in this study, is an early indicator of cardiovascular disease. On the other hand, flow-mediated dilation improved significantly in participants on the low-fat diet suggesting a healthier artery which is less prone to developing atherosclerosis.

"We observed a reduction in brachial artery flow-mediated dilation after six weeks of weight loss on a low-carbohydrate, Atkins'-style diet," Dr. Gutterman says.

Low-carbohydrate diets were also found to have significantly less daily folic acid than low-fat diets. Folic acid is thought to be helpful in reducing the likeliness of heart disease. This protective effect results from the antioxidant property of folic acid and its ability to lower levels of homocysteine, a naturally occurring amino acid that can be dangerous at elevated levels.

The low-carbohydrate diet provided 20 grams of carbohydrates daily and

was supplemented with protein and fat content according to the Atkins' diet recommendations. The low-fat diet provided 30 percent of the calories as fat, and was modeled after the American Heart Association's recommendations.

"The composition of diet may be as important as the degree of weight loss in determining the effect of dietary interventions on vascular health," Dr. Gutterman notes.

Twenty participants between the ages of 18 to 50 with a body mass index ranging from 29 to 39 were monitored for the study, and the type of diet was randomly assigned to participants. Weight loss, flow-mediated dilation, blood pressure and insulin and glucose levels in the participants were measured every two weeks for the six-week study.

Source: Medical College of Wisconsin