

Heart Disease Risk: Low-Carb Diet Trumps Low-Fat Option

Larry Hand | September 01, 2014

A low-carbohydrate diet may be better than a low-fat diet for losing weight and reducing risks for cardiovascular disease (CVD), according to an article published in the September 2 issue of *Annals of Internal Medicine*.

Lydia A. Bazzano, MD, PhD, MPH, from the Department of Epidemiology at Tulane University School of Public Health and Tropical Medicine, New Orleans, Louisiana, and colleagues conducted a randomized trial involving 148 adults who did not have diabetes or CVD.

The researchers randomly assigned 75 participants to the low-carbohydrate group and 73 to the low-fat group, with 59 (79%) low-carbohydrate participants and 60 (82%) low-fat participants completing the 1-year study. The groups were well matched, with a median age of 47.8 years in the low-fat group and 45.8 years in the low-carbohydrate group and baseline body mass indexes of 35.6 and 35.2 kg/m². The groups were predominately female (89% and 88%, respectively) but were racially mixed, with approximately equal numbers of blacks (36 and 40, respectively) and whites (33 and 34, respectively) in each group.

At 1 year, the researchers found that the low-carbohydrate group had a significantly greater reduction in body weight (mean difference, -3.5 kg; 95% confidence interval [CI], -5.6 to -1.4 kg; $P = .002$), significantly greater proportional reductions in fat mass (mean difference, -1.5%; 95% CI, -2.6% to -0.4%; $P = .011$), and significantly greater relative increase in lean mass (mean difference, 1.7%; 95% CI, 0.6% - 2.8%; $P = .003$).

Total and low-density lipoprotein cholesterol levels and plasma glucose levels did not change significantly in either group, nor did blood pressure levels significantly decrease in either group.

However, the low-carbohydrate participants showed significantly greater decreases in C-reactive protein levels (mean difference, -15.2 nmol/L; $P = .024$); estimated 10-year risk for coronary heart disease, based on the Framingham risk score (mean difference, -1.4%; $P < .001$); ratio of total to high-density lipoprotein cholesterol (mean difference, -0.44; $P = .002$); and serum triglyceride levels (mean difference, -0.16 mmol/L; $P = .038$).

Counseling and Education

Study participants in both groups met with dietitians in weekly individual counseling sessions for the first 4 weeks and then in small groups biweekly for the next 5 months. They met monthly the last 6 months.

Staff members provided equal instructions to both groups in terms of dietary fiber and types of fats. Researchers collected 24-hour dietary recall data at baseline and at 3, 6, and 12 months.

"[T]his 12-month randomized, parallel-group trial showed that a low-carbohydrate diet resulted in greater weight loss and reduction in cardiovascular risk factors than a low-fat diet among obese black and white adults," the researchers conclude.

"Our findings suggest that people who want to lose weight and have risk factors for heart disease could consider a low-carbohydrate diet as an option to both lose weight and improve those risk factors," coauthor Tian Hu, MD, a doctoral research fellow at Tulane, told *Medscape Medical News*.

Benefits Seen Across Ethnic Groups

The researchers write that their findings are consistent with the findings of other studies as to body weight. "In addition, our findings suggest that the loss of fat mass accounts for most of the reduction in body weight on a low-carbohydrate diet, which is consistent with other study findings," they note.

"Our study has a couple of important differences compared to others. Some previous studies had included only diabetics, or mostly participants with metabolic syndrome or cardiovascular disease. Participants in our study were generally healthy. They might have hypertension or dyslipidemia, but they did not have any clinical cardiovascular disease, kidney disease, or diabetes," Dr. Hu told *Medscape Medical News*.

"The diversity of the study group is also an important contribution. Previous studies included mostly white participants or did not test a typical low-carbohydrate diet," he added. "When we evaluated the effects of both diets in African-American and Caucasian participants separately, the results were similar."

What happens after the study is still to be determined. "We could only examine results over the 1-year period of the study. But it's very likely that adherence to the diet may have [an] impact on CVD risk reduction," Dr. Hu noted.

Balance Counts

"I thought [the study] was very well thought out. I'm glad that dietitians and nutrition education were used and the participants had good follow-up," Kasia Ciaston, MS, RD, LDN, a clinical dietitian at Loyola University Medical Center in Maywood, Illinois, told *Medscape Medical News*.

"My big concern is studying low-carb or low-fat diet, especially with cardiovascular risk, is particularly due to the history of these types of diets," she continued. "For the last 50 to 60 years, fat has been created as the enemy, which caused a significant increase in carbohydrate intake and incidence of diabetes and blood sugar-related disease. I feel that it would be a similar mistake to point the finger of blame at carbohydrates and make another macronutrient the bad guy," she said.

"Although I do agree that decreasing carbohydrate intake from processed foods can have wonderful health benefits, I think the real message to get across here is that getting that right balance in your diet is what really helps to create health benefits, versus cutting out a certain macronutrient," she added.

For the low-carbohydrate participants in this study, "their intake of protein also increased dramatically, which can also create health effects over time. They're also eating a stable amount of fiber in their diet. All of these other factors that aren't necessarily focused on are playing a part in that balance," she said.

"I hope that what clinicians get out of this study is that nutrition is a huge impact factor on decreasing future risks and that [nutrition information] would make a much bigger impact if [patients] weren't just hearing it from me, but if they were hearing it also from their physician and each member of their healthcare team," she added.

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