

Weight and metabolic outcomes after 2 years on a low-carbohydrate versus low-fat diet: a randomized trial.

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Weight and Metabolic Outcomes After 2 Years on a Low-Carbohydrate Versus Low-Fat Diet: A Randomized Trial

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FULL TEXT



Abstract

This article has been corrected. For original version, click [“Original Version \(PDF\)”](#) in column 2.

Background: Previous studies comparing low-carbohydrate and low-fat diets have not included a comprehensive behavioral treatment, resulting in suboptimal weight loss.

Objective: To evaluate the effects of 2-year treatment with a low-carbohydrate or low-fat diet, each of which was combined with a

comprehensive lifestyle modification program.

Design: Randomized parallel-group trial. (ClinicalTrials.gov registration number: NCT00143936)

Setting: 3 academic medical centers.

Patients: 307 participants with a mean age of 45.5 years (SD, 9.7 years) and mean body mass index of 36.1 kg/m² (SD, 3.5 kg/m²).

Intervention: A low-carbohydrate diet, which consisted of limited carbohydrate intake (20 g/d for 3 months) in the form of low-glycemic index vegetables with unrestricted consumption of fat and protein. After 3 months, participants in the low-carbohydrate diet group increased their carbohydrate intake (5 g/d per wk) until a stable and desired weight was achieved. A low-fat diet consisted of limited energy intake (1200 to 1800 kcal/d; ~30% calories from fat). Both diets were combined with comprehensive behavioral treatment.

Measurements: Weight at 2 years was the primary outcome. Secondary measures included weight at 3, 6, and 12 months and serum lipid concentrations, blood pressure, urinary ketones, symptoms, bone mineral density, and body composition throughout the study.

Results: Weight loss was approximately 11 kg (11%) at 1 year and 7 kg (7%) at 2 years. There were no differences in weight, body composition, or bone mineral density between the groups at any time point. During the first 6 months, the low-carbohydrate diet group had greater reductions in diastolic blood pressure, triglyceride levels, and very-low-density lipoprotein cholesterol levels, lesser reductions in low-density

lipoprotein cholesterol levels, and more adverse symptoms than did the low-fat diet group. The low-carbohydrate diet group had greater increases in high-density lipoprotein cholesterol levels at all time points, approximating a 23% increase at 2 years.

Limitation: Intensive behavioral treatment was provided, patients with dyslipidemia and diabetes were excluded, and attrition at 2 years was high.

Conclusion: Successful weight loss can be achieved with either a low-fat or low-carbohydrate diet when coupled with behavioral treatment. A low-carbohydrate diet is associated with favorable changes in cardiovascular disease risk factors at 2 years.

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FULL TEXT

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