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The effect of a plant-based low-carbohydrate ("Eco-Atkins") diet on body weight and blood lipid concentrations in hyperlipidemic subjects.

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Abstract

BACKGROUND: Low-carbohydrate, high-animal protein diets, which are advocated for weight loss, may not promote the desired reduction in low-density lipoprotein cholesterol (LDL-C) concentration. The effect of exchanging the animal proteins and fats for those of vegetable origin has not been tested. Our objective was to determine the effect on weight loss and LDL-C concentration of a low-carbohydrate diet high in vegetable proteins from gluten, soy, nuts, fruits, vegetables, cereals, and vegetable oils compared with a high-carbohydrate diet based on low-fat dairy and whole grain products.

METHODS: A total of 47 overweight hyperlipidemic men and women consumed either (1) a low-carbohydrate (26% of total calories), high-vegetable protein (31% from gluten, soy, nuts, fruit, vegetables, and cereals), and vegetable oil (43%) plant-based diet or (2) a high-carbohydrate lacto-ovo vegetarian diet (58% carbohydrate, 16% protein, and 25% fat) for 4 weeks each in a parallel study design. The study food was provided at 60% of calorie requirements.

RESULTS: Of the 47 subjects, 44 (94%) (test, n = 22 [92%]; control, n = 22 [96%]) completed the study. Weight loss was similar for both diets (approximately 4.0 kg). However, reductions in LDL-C concentration and total cholesterol-HDL-C and apolipoprotein B-apolipoprotein AI ratios were greater for the low-carbohydrate compared with the high-carbohydrate diet (-8.1% [P = .002], -8.7% [P = .004], and -9.6% [P = .001], respectively). Reductions in systolic and diastolic blood pressure were also seen (-1.9% [P = .052] and -2.4% [P = .02], respectively).

CONCLUSION: A low-carbohydrate plant-based diet has lipid-lowering advantages over a high-carbohydrate, low-fat weight-loss diet in improving heart disease risk factors not seen with conventional low-fat diets with animal products.

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