The Effect of a Low-Carbohydrate Diet on Cardiovascular Disease Risk Factors

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A one-month, randomized parallel clinical trial was used to determine the effect of a low-carbohydrate diet on cardiovascular disease risk factors: BMI, body weight, and triglycerides. Participants (n=17) were randomized to adopt a low-carbohydrate, minimally-processed food diet (n=12) or maintain their current diet (n=5). BMI, body weight, and fasting triglycerides were measured at baseline and four weeks. Five self-reported, 24-hour dietary recall surveys were used to assess dietary intake, which included calories, carbohydrates, fat, saturated fat, protein, and added sugar. The treatment group experienced reductions in BMI (mean treatment effect -.6 kg/m^2, SD .50 kg/m^2, p<.001), weight (mean treatment effect -4.2 lbs, SD 3.4 lbs, p<.001), and triglycerides (mean treatment effect -7.9 mg/dL, SD 19 mg/dL, p=.084). Change in mean daily caloric intake was positively associated with change in BMI (R^2=.23; p=.051), as was change in mean daily carbohydrate intake (R^2=.18; p=.091). Change in mean daily caloric intake was positively associated with change in weight (R^2=.32; p=.019), as was change in mean daily carbohydrate intake (R^2=.25; p=.042). Change in mean daily percentage of calories coming from carbohydrates per pound of body weight was positively associated with change in triglycerides (R^2=.20; p=.073). These results demonstrate the potential use of a low-carbohydrate, minimally-processed food diet for prevention and treatment of cardiovascular disease; however, larger, longer trials are necessary to determine the long-term effect of a low-carbohydrate diet on cardiovascular disease markers.