

N Engl J Med. 2003 May 22;348(21):2074-81.

A low-carbohydrate as compared with a low-fat diet in severe obesity.

Samaha FF¹, Iqbal N, Seshadri P, Chicano KL, Daily DA, McGrory J, Williams T, Williams M, Gracely EJ, Stern L.

+ Author information

Abstract

BACKGROUND: The effects of a carbohydrate-restricted diet on weight loss and risk factors for atherosclerosis have been incompletely assessed.

METHODS: We randomly assigned 132 severely obese subjects (including 77 blacks and 23 women) with a mean body-mass index of 43 and a high prevalence of diabetes (39 percent) or the metabolic syndrome (43 percent) to a carbohydrate-restricted (low-carbohydrate) diet or a calorie- and fat-restricted (low-fat) diet.

RESULTS: Seventy-nine subjects completed the six-month study. An analysis including all subjects, with the last observation carried forward for those who dropped out, showed that subjects on the low-carbohydrate diet lost more weight than those on the low-fat diet (mean [±SD], -5.8±8.6 kg vs. -1.9±4.2 kg; $P=0.002$) and had greater decreases in triglyceride levels (mean, -20±43 percent vs. -4±31 percent; $P=0.001$), irrespective of the use or nonuse of hypoglycemic or lipid-lowering medications. Insulin sensitivity, measured only in subjects without diabetes, also improved more among subjects on the low-carbohydrate diet (6±9 percent vs. -3±8 percent, $P=0.01$). The amount of weight lost ($P<0.001$) and assignment to the low-carbohydrate diet ($P=0.01$) were independent predictors of improvement in triglyceride levels and insulin sensitivity.

CONCLUSIONS: Severely obese subjects with a high prevalence of diabetes or the metabolic syndrome lost more weight during six months on a carbohydrate-restricted diet than on a calorie- and fat-restricted diet, with a relative improvement in insulin sensitivity and triglyceride levels, even after adjustment for the amount of weight lost. This finding should be interpreted with caution, given the small magnitude of overall and between-group differences in weight loss in these markedly obese subjects and the short duration of the study. Future studies evaluating long-term cardiovascular outcomes are needed before a carbohydrate-restricted diet can be endorsed.

Copyright 2003 Massachusetts Medical Society

Comment in

Diet, obesity, and cardiovascular risk. [*N Engl J Med.* 2003]

Interpreting incomplete data in studies of diet and weight loss. [*N Engl J Med.* 2003]

Low-carbohydrate diets as compared with low-fat diets. [*N Engl J Med.* 2003]

Low-carbohydrate diets as compared with low-fat diets. [N Engl J Med. 2003]

Low-carbohydrate diets as compared with low-fat diets. [N Engl J Med. 2003]

Low-carbohydrate diets as compared with low-fat diets. [N Engl J Med. 2003]

PMID: 12761364 [PubMed - indexed for MEDLINE] **Free full text**



Publication Types, MeSH Terms, Substances



LinkOut - more resources



PubMed Commons

[PubMed Commons home](#)

 0 comments

[How to join PubMed Commons](#)