

Effect of diets enriched in almonds on insulin action and serum lipids in adults with normal glucose tolerance or type 2 diabetes.

Lovejoy, JC 2002
American Journal Of Clinical Nutrition
76:1000-1006.

Abstract:

Background: Nuts appear to have cardiovascular benefits but their effect in diabetic patients is unclear. Objective: The objective was to assess effects of almond-enriched diets on insulin sensitivity and lipids in patients with normoglycemia or type 2 diabetes. Design: Study 1 assessed the effect of almonds on insulin sensitivity in 20 free-living healthy volunteers who received 100 g almonds 1d for 4 wk. Study 2 was a randomized crossover study that compared 4 diets in 30 volunteers with type 2 diabetes: 1) high-fat, high-almond (HFA; 37% total fat, 10% from almonds); 2) low-fat, high-almond (LFA; 25% total fat, 10% from almonds); 3) high-fat control (HFC; 37% total fat, 10% from olive or canola oil); and 4) low-fat control (LFC; 25% total fat, 10% from olive or canola oil). After each 4-wk diet, serum lipids and oral glucose tolerance were measured. Results: In study 1, almond consumption did not change insulin sensitivity significantly, although body weight increased and total and LDL cholesterol decreased by 21% and 29%, respectively ($P < 0.05$). In study 2, total cholesterol was lowest with the HFA diet (4.46 ± 0.14 , 4.52 ± 0.14 , 4.63 ± 0.14 , and 4.63 ± 0.14 mmol/L with the HFA, HFC, LFA, and LFC diets, respectively; $P = 0.0004$ for fat level). HDL cholesterol was significantly lower with the almond diets ($P = 0.002$); however, no significant effect was observed on LDL: HDL. Glycemia was unaffected. Conclusions: Almond-enriched diets do not alter insulin sensitivity in healthy adults or glycemia in patients with diabetes. Almonds had beneficial effects on serum lipids in healthy adults and produced changes similar to high monounsaturated fat oils in diabetic patients.