

1997 - Effect of almonds on selected coronary risk factors

Title:

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Summary:

Frequent consumption of nuts may lower the risk of cardiovascular disease by favorably altering serum lipid and lipoprotein concentrations. We compared the effects of 2 amounts of almond intake with those of a National Cholesterol Education Program Step I diet on serum lipids, lipoproteins, apolipoproteins, and glucose in healthy and mildly hypercholesterolemic adults. In a randomized crossover design, 25 healthy subjects (14 men, 11 women) with a mean (\pm SD) age of 41 ± 13 y were fed 3 isoenergetic diets for 4 wk each after being fed a 2-wk run-in diet (containing 34% of energy from fat). The experimental diets included a Step I diet, a low-almond diet, and a high-almond diet, in which almonds contributed 0%, 10%, and 20% of total energy, respectively.

Inverse relations were observed between the percentage of energy in the diet from almonds and the subject's total cholesterol (P value for trend < 0.001), LDL-cholesterol ($P < 0.001$), and apolipoprotein B ($P < 0.001$) concentrations and the ratios of LDL to HDL cholesterol ($P < 0.001$) and of apolipoprotein B to apolipoprotein A ($P < 0.001$). Compared with the Step I diet, the high-almond diet reduced total cholesterol (0.24 mmol/L or 4.4%; $P = 0.001$), LDL cholesterol (0.26 mmol/L or 7.0%; $P < 0.001$), and apolipoprotein B (6.6 mg/dL or 6.6%; $P < 0.001$); increased HDL cholesterol (0.02 mmol/L or 1.7%; $P = 0.08$); and decreased the ratio of LDL to HDL cholesterol (8.8%; $P < 0.001$).

Isoenergetic incorporation of ~68 g of almonds (20% of energy) into an 8368-kJ (2000-kcal) Step I diet markedly improved the serum lipid profile of healthy and mildly hypercholesterolemic adults. Total and LDL-cholesterol concentrations declined with progressively higher intakes of almonds, which suggest a dose-response relation.

Publications:

Jambazian P, Haddad E, Rajaram S, Tanzman J, Sabaté J. Almond-rich diets simultaneously improve plasma lipoproteins and alpha tocopherol levels in men and women. *J Am Diet Assoc.* 2005;105:449-454. [full text](#)

Sabaté J, Haddad E, Tanzman JS, Jambazian P, Rajaram S. Serum lipid response to a graded enrichment of a Step I diet with almonds: a randomized feeding trial. *Am J Clin Nutr.* 2003;77:1379-84. [full text](#)

Presentations:

Sabaté J, Haddad E. Almond-rich diets simultaneously improve plasma lipoproteins and alpha tocopherol levels in men and women. Poster presented at the 17 th International Congress on Nutrition. Vienna, Austria 2001. [abstract](#)

Jaceldo-Siegl K, Sabaté J. Effect of almond supplementation on eating patterns, and micronutrient and fatty acid intake profile in free-living healthy adults. Poster presented at the 17th international Congress on Nutrition. Vienna, Austria 2001. [*Annals of Nutrition & Metabolism* 2001;45(suppl 1):152] [abstract](#)

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Jambazian P, Haddad E, Tanzman J, Sabaté J. Incorporating almonds in diet improves plasma alpha tocopherol levels. Experimental Biology '01. Orlando, FL, April 2001. [FASEB Journal 2001;15(5):A601] [abstract](#)

Sabaté J, Rajaram S, Jambazian P, Tanzman JS, Haddad E. Dose response effects of almonds on serum lipid levels in healthy men and women: a randomized feeding trial. Experimental Biology '01. Orlando, FL, April 2001. [abstract](#)

Zemaitis J, Sabaté J. Effect of almond consumption on stool weight and stool fat. Experimental Biology '01. Orlando, FL. [abstract](#)

Sabaté J, Rajaram S, Jambazian, P, Myint T, Haddad E. Effects of almonds on serum lipids and fasting glucose levels in normocholesterolemic subjects. Experimental Biology '00. San Diego, CA, April 2000. [abstract](#)

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