

EFFECTS OF A FOOD RICH IN α -LINOLENIC ACID ON THE SERUM LIPID PROFILE OF HYPERCHOLESTEROLEMIC SUBJECTS

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Cardiovascular health benefits seem to be associated with consuming plant foods rich in α -linolenic acid (LNA). One reason could be a favorable effect on serum lipids, as has been shown for walnuts in normolipidemic subjects (N Engl J Med 1993;328:603-7). Therefore, we evaluated the effect of walnuts on serum lipids in hypercholesterolemic subjects.

Patients & Methods: In a randomized, cross-over study, 26 patients (20 F/6 M; mean age 56 yrs, 24-68) with primary hypercholesterolemia (mean lipid values in mg/dl: TC 280, LDL-C 197, HDL-C 61, TG 126) received two mixed natural, isocaloric diets, containing identical foods and macronutrients, but differing in LNA content: a reference MUFA diet, olive oil-rich (MO), and a PUFA diet, containing about 50 g walnuts (PW). Respective fat composition values were (percent of daily energy): total fat 30 vs 33, SFA 5 vs 5, MUFA 21 vs 16, and PUFA 4 vs 12. The main changes in the PW diet with respect to the MO diet were a 21% decrease in the intake of oleic acid (18:1), a 150% increase in linolenic acid (18:2n-6), and a 300% increase in LNA (18:3n-3). After 6 wks on each diet, blood was obtained for serum lipoprotein determinations.

Results: Body weight was constant throughout the two dietary periods. Estimated lipid changes with the PW diet in comparison with the reference MO diet were (mg/dl): TC-9 ($p<0.001$), LDL-C-11 ($p<0.001$), HDL-C 1, TG-1, apo AI 2, and apo B-5 ($p=0.03$).

Conclusions: Incorporating moderate quantities of walnuts into a MUFA-rich hypolipidemic diet while maintaining the intake of total fat and calories favorably modifies the serum lipid profile in hypercholesterolemic subjects.

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