

4 fat-restricted diets in hypercholesterolemic and combined hyperlipidemic men: the Dietary Alternatives Study.

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Long-term Cholesterol-Lowering Effects of 4 Fat-Restricted Diets in Hypercholesterolemic and Combined Hyperlipidemic Men The Dietary Alternatives Study

Robert H. Knopp, MD; Carolyn E. Walden, MS; Barbara M. Retzlaff, MPH; [et al](#)

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Abstract

Context. –The long-term effect of aggressively vs moderately fat-restricted diets has not been studied extensively in free-living subjects with different types

of hyperlipidemia.

Objective. –To compare the cholesterol-lowering effects of 4 levels of dietary fat intake restriction after 1 year.

Desing. –Randomized, parallel, comparison trial.

Setting. –Male employees of a large industry.

Participants. –A total of 444 men had low-density lipoprotein cholesterol (LDLC) levels above the 75th age-specific percentile. Subjects with triglyceride (TG) levels less than the 75th age-specific percentile were defined as hypercholesterolemic (HC) and those with TG levels at or above the 75th age-specific percentile were defined as combined hyperlipidemic (CHL).

Interventions. –Hypercholesterolemic subjects were randomized to diets 1, 2, 3, and 4 taught to contain 30%, 26%, 22%, and 18% fat, and the CHL subjects were randomized to diets 1,2, and 3. All 4 diets were taught to subjects and spouses or partners in 8 weekly 2-hour classes.

Main Outcome Measures. –Plasma lipoprotein levels after 1 year.

Results. –Fat intake after 1 year declined from a mean of 34% to 36% of energy to 27%, 26%, 25%, and 22% in the 4 HC diet groups and 28%, 26%, and 25% in the 3 CHL diet groups. Mean±SD percent LDL-C reductions were 5.3%±16.2%, 13.4%±12.6%, 8.4%±11.2%, and 13.0%±15.7% in the HC diet groups and 7.0%±16.2%, 2.8%±15.8%, and 4.6%±13.5% in the CHL diet groups ($P<.01$ in all but 1 instance). Apoprotein B levels decreased 8.6%, 10.7%, 4.3%, and 5.3% in the HC groups and 14.6%, 11.4%, and 9.9% in the CHL groups ($P<.05$ -.01 in each instance). Triglyceride levels increased significantly in subjects following HC diets 3 and 4, 21.7% and 38.7% ($P<.05$ and .01), but not in any CHL subjects. High-density lipoprotein cholesterol decreased 2.8% and 3.2% in subjects on HC diets 3 and 4, respectively ($P<.05$ in both cases).

Conclusions. –After 1 year, moderate restriction of dietary fat intake attains meaningful and sustained LDL-C reductions in HC subjects and apoprotein B reductions in both HC and CHL subjects. More extreme restriction of fat intake

offers little further advantage in HC or CHL subjects and potentially undesirable effects in HC subjects.

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