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PREDICTORS OF SHORT AND INTERMEDIATE RESPONSE TO CHOLESTEROL-LOWERING DIETS BY HC AND CHL MEN: THE DIETARY ALTERNATIVES STUDY.

Walden, Carolyn E; Katan, Martijn; Retzlaff, Barbara; Dowdy, Alice; McCann, Barbara S; Knopp, Robert H. The Northwest Lipid Research Clinic, University of Washington, Seattle, WA and Dept. Human Nutrition, Agricultural University, Wageningen, The Netherlands

To determine if the same biological and dietary factors predict total cholesterol (CH) response to diet, data from 94 hypercholesterolemic (HC) and 79 combined hyperlipidemic (CHL) men randomized to 1 of 3 low-fat, low-cholesterol diets were analyzed. The subjects had complete plasma lipid and anthropometric data and food records, which were representative of their usual dietary intakes, at each of five visits during 1 yr of follow-up. Subjects had two elevated LDL-C and normal TG (HC) or 2 elevated LDL-C and one or two elevated TG (CHL) levels prior to being randomized to diets consisting of 30, 26, or 22 % fat and 300, 200 or 100 mg/day cholesterol. Diets were taught during 8 wkly, 2 hr classes. Follow-up visits were held after 1 & 3 months (short term) and 6, 9 & 12 months (intermediate term). HC and CHL men had approximately the same plasma CH lowering short term (-39 mg/dL) and intermediate term (-27 mg/dL). The mean total-C change (Δ CH) for each time period was regressed on a set of prerandomization data: total-C, HDL-C, and HDL₂-C, BMI, & dietary cholesterol, total (tfat) & saturated fat (sfat); and on data representing changes resulting from the intervention: Δ BMI & Δ Keys score. Intermediate term response was best explained by:

HC subjects: Δ CH = Δ Keys - HDL-C + Δ BMI - tfat + sfat; $r^2 = .32$

CHL subjects: Δ CH = HDL₂-C + Δ BMI + prerandomization BMI; $r^2 = .34$.

Predictors of short term response were similar, but with lower r^2 values.

Conclusions: HC subjects' response to diet is determined primarily by habitual and changes in dietary intake and weight while CHL subjects' response is determined by prerandomization plasma lipoproteins, relative weight and weight loss. Intermediate response is more predictable by these factors than is short term response. These predictive differences may provide clues to specific hygienic management of HC vs CHL.