Almonds vs complex carbohydrates in a weight reduction program.

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Abstract:
OBJECTIVE: To evaluate the effect of an almond-enriched (high monounsaturated fat, MUFA) or complex carbohydrate-enriched (high carbohydrate) formula-based low-calorie diet (LCD) on anthropometric, body composition and metabolic parameters in a weight reduction program. DESIGN: A randomized, prospective 24-week trial in a free-living population evaluating two distinct macronutrient interventionson obesity and metabolic syndrome-related parameters during weight reduction. SUBJECTS: In total, 65 overweight and obese adults (age: 27-79 y, body mass index (BMI): 27-55 kg/m2). INTERVENTION: A formula-based LCD enriched with 84 g/day of almonds (almond-LCD; 39% total fat, 25 MUFA and 32% carbohydrate as percent of dietary energy) or self-selected complex carbohydrates (CHO-LCD; 18% total fat, 5% MUFA and 53% carbohydrate as percent of dietary energy) featuring equivalent calories and protein.MAIN OUTCOME MEASUREMENTS: Various anthropometric, body composition and metabolic parameters at baseline, during and after 24 weeks of dietary intervention.RESULTS: LCD supplementation with almonds, in contrast to complex carbohydrates, was associated with greater reductions in weight/BMI (-18 vs -11%), waist circumference (WC) (-14 vs 9-%), fat mass (FM) (-30 vs -20%), total body water (-8 vs -1%) and systolic blood pressure (-11 vs 0%), P=0.0001-0.05. A 62% greater reduction in weight/BMI, 50% greater reduction in WC and 56% greater reduction in FM were observed in the almond-LCD as compared to the CHO-LCD intervention. Ketone levels increased only in the almond-LCD group (+260 vs 0%, P<0.02). High-density lipoprotein cholesterol (HDL-C) increased in the CHO-LCD group and decreased in the almond-LCD group (+15 vs -6%, P=0.05). Glucose, insulin, diastolic blood pressure, total cholesterol, triglycerides, low-density lipoprotein cholesterol (LDL-C) and LDL-C to HDL-C ratio decreased significantly to a similar extent in both dietary interventions. Homeostasis model analysis of insulin resistance (HOMAIR)