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ORIGINAL RESEARCH COMMUNICATION

Long-term effects of 2 energy-restricted diets differing in glycemic load on dietary adherence, body composition, and metabolism in CALERIE: a 1-y randomized controlled trial[1,2,3]

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Background: There remains no consensus about the optimal dietary composition for sustained weight loss.

Objective: The objective was to examine the effects of 2 dietary macronutrient patterns with different glycemic loads on adherence to a prescribed regimen of calorie restriction (CR), weight and fat loss, and related variables.

Design: A randomized controlled trial (RCT) of diets with a high glycemic load (HG) or a low glycemic load (LG) at 30% CR was conducted in 34 healthy overweight adults with a mean (±SD) age of 35 ± 6 y and body mass index (kg/m^2) of 27.6 ± 1.4. All food was provided for 6 mo in diets controlled for confounding variables, and subjects self-administered the plans for 6 additional months. Primary and secondary outcomes included energy intake measured by doubly labeled water, body weight and fatness, hunger, satiety, and resting metabolic rate.

Results: All groups consumed significantly less energy during CR than at baseline ($P < 0.01$), but changes in energy intake, body weight, body fat, and resting metabolic rate did not differ significantly between groups. Both groups ate more energy than provided (eg, 21% and 28% CR at 3 mo and 16% and 17% CR at 6 mo with HG and LG, respectively). Percentage weight change at 12 mo was −8.04 ± 4.1% in the HG group and −7.81 ± 5.0% in the LG group. There was no effect of dietary composition on changes in hunger, satiety, or satisfaction with the amount and type of provided food during CR.

Conclusions: These findings provide more detailed evidence to suggest that diets differing substantially in glycemic load induce comparable long-term weight loss.

Key Words: Glycemic load • caloric restriction • body weight • metabolism

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