Effectiveness of a soy-based compared with a traditional low-calorie diet on weight loss and lipid levels in overweight adults

Fang-Hsuean Liao, Ming-Jer Shieh, Suh-Ching Yang, Shyh-Hsiang Lin and Yi-Wen Chien
Liao F-H;Shieh M-J;Yang S-C;Lin S-H;Chien Y-W

Abstract

Objective

This study investigated the effects of a soy-based low-calorie diet on weight control, body composition, and blood lipid profiles compared with a traditional low-calorie diet.

Methods

Thirty obese adults (mean body mass index 29–30 kg/m2) were randomized to two groups. The soy-based low-calorie group consumed soy protein as the only protein source, and the traditional low-calorie group consumed two-thirds animal protein and the rest plant protein in a 1200 kcal/d diet for 8 wk. A diet record was kept everyday throughout the study. Food intake was analyzed before and after the study. Anthropometric data were acquired every week, and biochemical data from before and after the 8-wk experiment were compared.

Results

Body weight, body mass index, body fat percentage, and waist circumference significantly decreased in both groups ($P < 0.05$). The decrease in body fat percentage in the soy group (2.2%, 95% confidence interval 1.6–2.8) was greater than that in the traditional group (1.4%, 95% confidence interval −0.1 to 2.8). Serum total cholesterol concentrations, low-density lipoprotein cholesterol concentrations, and liver function parameters decreased in the soy-based group and were significantly different from measurements in the traditional group ($P < 0.05$). No significant change in serum triacylglycerol levels, serum high-density lipoprotein cholesterol levels, and fasting glucose levels was found in the soy or traditional group.

Conclusion

Soy-based low-calorie diets significantly decreased serum total cholesterol and low-density lipoprotein cholesterol concentrations and had a greater effect on reducing body fat percentage than traditional low-calorie diets. Thus, soy-based diets have health benefits in reducing weight and blood lipids.