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Protein effect on appetite, satiety, and food intake in healthy adults

Higher protein diets have been associated with improved appetite control, satiety, and voluntary reduction in total caloric intake. A research team at the University of Missouri directly compared the effects of a lunch meal composed of beef or soy on appetite control, satiety and subsequent food intake, when matched for macronutrient and fiber content or matched for serving size (which allowed macronutrient and fiber content to vary). While both beef and soy proteins are high-quality, complete protein sources, many plant-based proteins such as vegetables and grains are incomplete protein sources.

In the randomized, crossover study, 21 healthy young adults consumed a 400-calorie lunch of either a macronutrient and fiber-matched meal (24-g beef protein or 24-g soy protein) or a serving size-matched meal (24-g beef protein/1-g fiber or 14-g soy protein/5-g fiber). Pre- and post-lunch appetite questionnaires and blood sampling were completed over an 8-h period until dinner was voluntarily requested. When subjects requested to eat again, they were provided an *ad libitum* buffet and told to eat as much or as little as desired until feeling comfortably full within 30 minutes. Additionally, pre- and post-lunch neural responses to food stimuli were measured using fMRI technology.

Minimal differences in post-lunch appetite control, satiety and subsequent food intake were reported, regardless of source, macronutrient, and fiber content. These results suggest that different sources of high-quality protein can produce similar effects on appetite control and satiety. Interestingly, protein source did significantly alter food cravings and reward, with the beef meals displaying greater reductions in food reward signals compared to soy meals. Thus, these data suggest that the consumption of one serving of high quality beef protein might reduce food cravings and motivational drive to eat in healthy, young adults.

Source: Douglas SM, Lasley TR, Leidy HJ. Consuming beef vs. soy protein has little effect on appetite, satiety, and food intake in healthy adults. J Nutr 2015;145(5):1010-6.
Full text available

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