

Walnut Study

Main Study Question

The objective of this study is to measure the energy value of walnuts in the human diet and study molecular mechanisms that may help explain the beneficial health effects of walnuts.

Motivation for Research

Previous studies have demonstrated that nut consumption imparts a variety of health benefits, including reduction of cardiovascular disease and improved satiety. The aim of this study is to determine the energy value of walnuts in the human diet and to probe mechanisms by which walnuts impart health benefits. The metabolizable energy value of walnuts will be calculated based on the chemical composition and energy content of the consumed diet and excreta. This will provide a better estimate of the energy value of walnuts than simply calculating energy value based on Atwater factors (4 kcal/g of carbohydrate, 4 kcal/g of protein, 9 kcal/g of fat). In addition to determining the energy value of walnuts, we will evaluate the effects of walnut-rich diets on plasma phytonutrient levels and on gene expression changes to determine what protective mechanisms are activated by walnut consumption.

The study ran from early May to end of June 2013.

