Walnuts can be eaten as part of a healthy diet that won’t contribute to weight gain or hinder weight loss goals.

**APPETITE CONTROL**

A randomized trial showed that healthy adults (ages 18-35) who regularly consumed foods containing PUFAs experienced favorable changes in appetite hormones associated with hunger and satiety. Twenty-six participants consumed meals high in saturated fat at the beginning of the study and then were placed on a seven-day control diet consisting of a typical American eating pattern or a diet high in PUFAs (included foods such as walnuts, Alaska salmon, tuna, canola oil, and fish oil supplements). After the seven-day diet, participants consumed meals high in saturated fat, again. Participants who consumed a PUFA-rich diet had a significant decrease in fasting ghrelin, a hormone that increases hunger, and a significant increase in peptide YY (PYY), a hormone that increases fullness or satiety. Participants saw increases in PYY while fasting and after consuming a meal. These hormone changes could help with better appetite control although it is difficult to know if the changes are due to a specific type of PUFA, food, or a combination of overall dietary factors.

Researchers found walnuts may increase satiety and sense of fullness in a short-term study at Beth Israel Deaconess Medical Center and Harvard Medical School. Twenty men and women (ages 57-61) with metabolic syndrome participated in this randomized, double blind, cross-over study. For four days, subjects consumed isocaloric diets including a liquid meal with either 48 grams of walnuts (approximately 1.7 ounces) or no walnuts. The walnut meal was rich in PUFAs whereas the placebo was rich in monounsaturated fats (MUFAs). By the third day of the study, subjects on the walnut-containing diet reported feeling more satiated and had a significantly higher rate of feeling full compared to those on the placebo diet.

Researchers have also used magnetic resonance imaging (MRI) to explore possible connections between walnut consumption and important functions in the body. Investigators from the Beth Israel Deaconess Medical Center found that eating walnuts may activate an area of the brain associated with hunger and cravings. Ten obese adult participants (ages 48-54) lived at the medical center for two five-day sessions and were closely monitored for food intake and appetite. Participants reported feeling fuller when they consumed a daily smoothie with 48 grams of walnuts (approximately 1.7 ounces), compared to when they consumed a placebo smoothie with the same macronutrient content but with safflower oil instead of walnuts. Researchers saw increased activity in a part of the brain that is thought to be involved in cognitive control and salience, suggesting participants paid more attention to food choices after eating walnuts.

**CALORIE CONTENT**

A study from the United States Department of Agriculture (USDA) found that one serving of walnuts (1 ounce) may provide 146 calories, which is 39 calories less, or 21 percent fewer, than the 185 calories listed in the USDA FoodData Central. Eighteen healthy adults were randomly assigned to a sequence of two isocaloric diets: A controlled American diet without walnuts for a three-week period, and a controlled diet with 1.5 servings of walnuts (1.5 ounces) for another three-week period. Bomb calorimetry was used to measure calories and then the data was used to calculate the metabolizable energy of the walnuts. The study took into account the digestibility of walnut pieces and halves and further research is needed to better understand the results of the study and how this technique for calculating calories could potentially affect the calorie count of other foods.
**Body Weight & Composition**

A study used imaging technology to map body organ fat storage pools in 278 participants (ages 28-69; mostly male and obese) following two types of diet: a Mediterranean, low-carbohydrate diet that included one ounce of walnuts per day and a low-fat diet, with and without moderate exercise. After following the diets for 18 months, the Mediterranean, low-carbohydrate diet with walnuts was found to be most effective in reducing fat deposits around the liver, abdomen, and heart. Adding exercise provided additional benefit for visceral fat loss in all groups.

Total lean body mass or fat mass measurements were not available from the MRI analysis. Since this intervention involved dietary and physical activity changes, it is difficult to identify the exact factors responsible for the effects.

Research found that a diet containing unsaturated fats, such as those found in walnuts and olive oil, may have similar effects on weight loss as compared to a lower fat, higher carbohydrate diet among overweight and obese women. Two hundred forty-five women (ages 22-72) were enrolled in a one-year behavioral weight loss intervention and randomly assigned to three different diets: 1) a lower fat, higher carbohydrate diet (excluded nuts), 2) a lower carbohydrate, higher fat diet (excluded nuts), or 3) a walnut-rich (1.5 ounces per day), higher fat, lower carbohydrate diet. Participants reduced their intake by 500-1000 calories per day under dietary guidance from a dietitian and were encouraged to exercise at moderate intensity for at least 60 minutes per day. Another study with a similar design found a walnut-enriched (1-1.5 ounces per day), reduced-calorie diet had similar effects on weight loss compared to a standard reduced-calorie diet.

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An observational study found that increasing daily nut consumption by just half a serving (1/2 ounce) was linked to less weight gain and lower risk of obesity. Researchers investigated the association between nut consumption and weight change by analyzing more than 20 years of data from the Health Professionals Follow-Up Study, Nurses' Health Study and Nurses' Health Study II. In total, these cohorts included 289,915 men and women ages 24-75. An increase in consumption of walnuts and other tree nuts by half a serving per day was associated with a 15 percent and 11 percent lower risk of developing obesity and lesser weight gain of -0.37 and -0.36 kilograms (-0.82 and -0.79 pounds), respectively.

Information on dietary intake and diet adherence may have been limited in studies where participants were free-living and data was self-reported. Larger and longer-term studies, as well as studies in more diverse populations, are needed to understand population-wide effects.
