

The Science Behind Protein and Satiety

A closer look at the all-natural, high-quality protein found in eggs

Fill up and not out!

Research suggests that high-quality protein foods such as eggs keep appetites satisfied longer, aid in weight management and fat loss, and help to preserve lean muscle mass.

Eggs are all natural and provide one of the highest-quality proteins of any food available. In fact, the quality of egg protein is so high that scientists historically have used eggs as the standard for measuring the protein quality of other foods.

One egg provides 6 grams of protein, or 13 percent of the Daily Value (DV) or Daily Reference Value (DRV). While many people think the egg white has all the protein, the yolk actually provides nearly half of it.

The research says...

- **Lose more weight:** Eating eggs for breakfast as part of a reduced-calorie diet helped overweight women lose 65 percent more weight, reduce their waist size by 83 percent more, and feel more energetic than women who ate a bagel for breakfast of equal calories.¹
- **Eat fewer calories:** Enjoying eggs for breakfast helped overweight adults feel fuller and consume an average of 330 fewer calories throughout the day than adults who ate a bagel-based breakfast with the same number of calories.²
- **Feel less hungry:** Men who ate 25 percent more of the recommended daily allowance for protein reported less hunger and desire to eat than those who ate less protein.³ In another study, adults who increased their intake of dietary protein from 15 percent of calories to 30 percent, decreased their overall intake of calories and reported less hunger than those who did not.⁴
- **Lose more fat:** Eating more high-quality protein (found in eggs, low-fat dairy and lean meats) and decreasing intake of carbohydrates is an effective way to increase fat loss and preserve muscle tissue during weight loss. High-quality protein also helps to help stabilize blood glucose levels.⁵
- **Maintain better blood sugar levels:** A study of healthy adults found that eating a breakfast containing egg protein resulted in lower insulin responses and better maintenance of blood sugar levels than eating an otherwise identical breakfast containing ham protein.⁶
- **Suppress hunger:** A study of healthy men found that eating a breakfast of either a whole egg or egg yolk helped slow the rate at which food leaves the stomach and increased the levels of two hormones that act as hunger suppressants.⁷
- **Improve health profile:** Women who consumed higher amounts of protein from foods such as eggs, meat and milk lost slightly more weight, felt fuller, had better plasma cholesterol profiles, and had better blood glucose levels than a group of women who consumed the same number of calories on a high-carbohydrate diet.⁸
- **Weight Maintenance:** Following weight loss, adults who consumed diets higher in protein were better able to manage their weight than adults on a lower protein diet. In fact, the group that consumed a diet with 18 percent of total calories from protein had a smaller waist circumference and less weight regain.⁹



References

- ¹ Dhurandhar NV, et al. Egg breakfast enhances weight loss. Presented at Experimental Biology 2007, Washington DC.
- ² Vander Wal JS, et al. Short-term effect of eggs on satiety in overweight and obese subjects. *J Am Coll Nutr.* 2005;24(6):510-515.
- ³ Apolzan, JW, et al. Inadequate dietary protein increases hunger and desire to eat in younger and older men. *J Nutr.* 2007;137:1478-1482.
- ⁴ Weigle DS, et al. A high-protein diet induces sustained reductions in appetite, ad libitum calorie intake, and body weight despite compensatory changes in diurnal plasma leptin and ghrelin concentrations. *Am J Clin Nutr.* 2005;82:41-48.
- ⁵ Layman DK. Protein quantity and quality at levels above RDA improves adult weight loss. *J Am Coll Nutr.* 2004;23(6):631S-636S.
- ⁶ Villaume C, et al. Effect of exchange of ham for boiled egg on plasma glucose and insulin responses to breakfast in normal subjects. *Diabetes Care.* 1986; 9(1):46-49.
- ⁷ Pelletier X, et al. Effect of egg consumption in healthy volunteers: influence of yolk, white or whole-egg on gastric emptying and on glycemic and hormonal responses. *Ann Nutr Metab.* 1996; 40(2):109-115.
- ⁸ Layman DK, et al. A reduced ratio of dietary carbohydrate to protein improves body composition and blood lipid profiles during weight loss in adult women. *J Nutr.* 2003;133:411-417.
- ⁹ Lejeune MPGM, et al. Additional protein intake limits weight regain after weight loss in humans. *British J Nutr.* 2005;93:281-289.

