

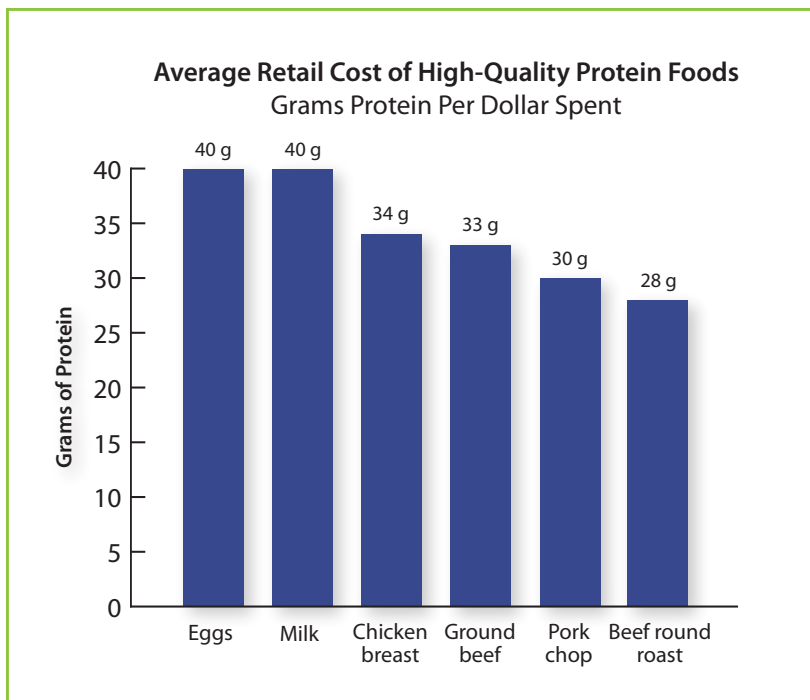
Fuel Up with Protein: Identifying High-Quality Protein Foods & Meeting Ideal Protein Needs

Food Sources of High-Quality Protein

Protein is found in foods that come from both animals and plants, but the quality of protein is not the same in these foods. The protein in foods that come from animals, such as eggs, lean beef and pork, skinless poultry, fish and low-fat dairy, is called high-quality protein. High-quality protein foods are important food choices because they provide all of the essential amino acids in the correct proportions that the body needs as building blocks for new proteins.

There are many affordable and nutrient-rich choices of high-quality protein foods available. Eggs are an all-natural, high-quality protein choice for breakfast, lunch, dinner or as a snack. For as little as 15 cents each, an egg provides six grams of protein; nearly half of the protein is found in the yolk. Eggs and milk also provide the most high-quality protein per dollar spent compared to other high-quality protein foods.

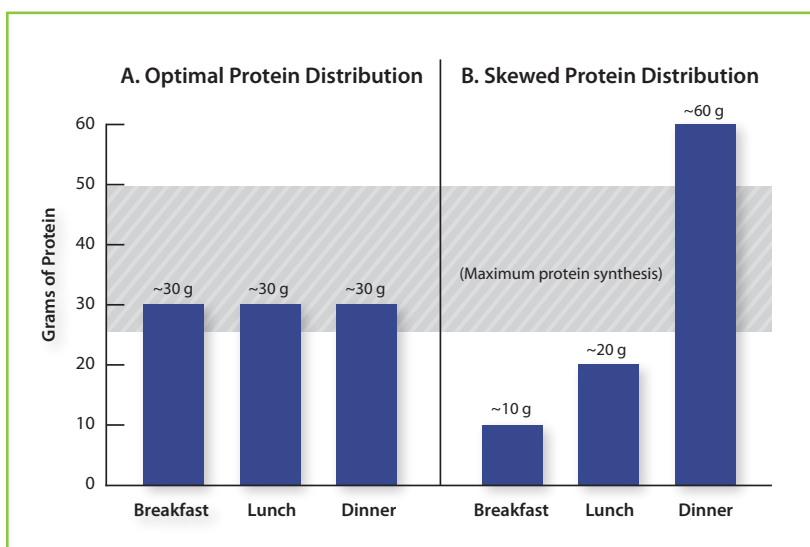
Grams of Protein Provided by High-Quality Protein Foods Per Dollar Spent¹



Favorable Protein Needs for Your Diet

Research shows that a dietary plan that includes 25-30 grams of high-quality protein per meal stimulates protein muscle synthesis (muscle growth and repair).^{2,3} Protein research from the past 10 years has also shown that dietary protein intakes at this level may also contribute to the treatment of diseases such as obesity, osteoporosis, type 2 diabetes and sarcopenia (loss of muscle).⁴⁻¹⁰

Consumption of 90 grams of protein per day, distributed evenly over three meals, stimulates maximal protein synthesis and is more likely to provide a greater protein anabolic response in 24 hours.^{2,3}



¹ United States Department of Agriculture. Economic Research Service. Retail data for beef, pork, poultry cuts, eggs, and dairy products (February 19, 2010).

Retrieved on February 19, 2010 from <http://www.ers.usda.gov/Data/MeatPriceSpreads/>

² Paddon-Jones D, Rasmussen BB: Dietary protein recommendations and the prevention of sarcopenia. *Curr Opin Clin Nutr Metab Care* 2009, 12:86-90.

³ Layman DK. Dietary Guidelines should reflect new understandings about adult protein needs. *Nutrition & Metabolism* 2009, 6:12.

⁴ Paddon-Jones D, Westman E, Mattes RD, Wolfe RR, Astrup A, Westerterp-Plantenga M: Protein, weight management, and satiety. *AJCN* 2008, 87:1558S-1561S.

⁵ Paddon-Jones D, Short KR, Campbell WW, Volpi E, Wolfe RR: Role of dietary protein in the sarcopenia of aging. *AJCN* 2008, 87:1562S-1566S.

⁶ Heaney RP, Layman DK: Amount and type of protein influences bone health. *AJCN* 2008, 87:1567S-1570S.

⁷ Layman DK, Clifton P, Gannon MC, Krauss RM, Nuttall FQ: Protein in optimal health: heart disease and type 2 diabetes. *AJCN* 2008, 87:1571S-1575S.

⁸ Paddon-Jones D, Rasmussen BB: Dietary protein recommendations and the prevention of sarcopenia. *Curr Opin Clin Nutr Metab Care* 2009, 12:86-90.

⁹ Krieger JW, Sitren HS, Daniels MJ, Langkamp-Henken B: Effects of variation in protein and carbohydrate intake on body mass and composition during energy restriction: a meta-regression. *Am J Clin Nutr* 2006, 83:260-274.

¹⁰ Layman DK, Walker DA: Protein importance of leucine in treatment of obesity and the metabolic syndrome. *J Nutr* 2006, 136:319S-323S.