

The Benefits of 30 Grams of Protein at Breakfast

Aubree Hawley
Ph.D. Student - Nutrition/
Food Science

Jamie I. Baum,
Associate Professor -
Food Science

What Is Breakfast?

Breakfast is unique because it breaks a time of fasting (after a night of sleep). It is important to eat breakfast, but simply eating breakfast is only half the battle. The true victory comes when you eat a high-quality breakfast packed full of protein and nutrients [1, 2].

Unfortunately, most Americans skip breakfast. Breakfast skippers are more likely to replace the healthy nutrients they missed by skipping breakfast with “empty calories” from foods containing unhealthy fats (saturated and trans fats) and added sugar. This puts breakfast skippers at an increased risk for weight gain and chronic diseases such as cardiovascular disease and type 2 diabetes [3]. Breakfast, especially a breakfast containing 30 grams of high-quality protein, can improve your overall nutritional intake and health [4].

The Current Recommendation for Protein

The current Recommended Daily Allowance (RDA) for protein is 0.8 grams for every kilogram of body weight daily. For example, this means a 150-pound healthy person (male or female) is recommended to consume 54.5 grams of protein per day. This is the amount of protein needed to keep the body from breaking down its own proteins and to prevent protein deficiency [5]. Research has shown that eating more protein than the RDA may

lead to better health [6]. Some of the health benefits of protein include better body composition (e.g., more muscle and less fat), increased satiety (e.g., decreased hunger), increased daily energy expenditure (e.g., the amount of calories you burn each day), improved bone health and decreased risk of chronic diseases such as type 2 diabetes mellitus and cardiovascular disease [7-11].

A Balanced Breakfast With Protein

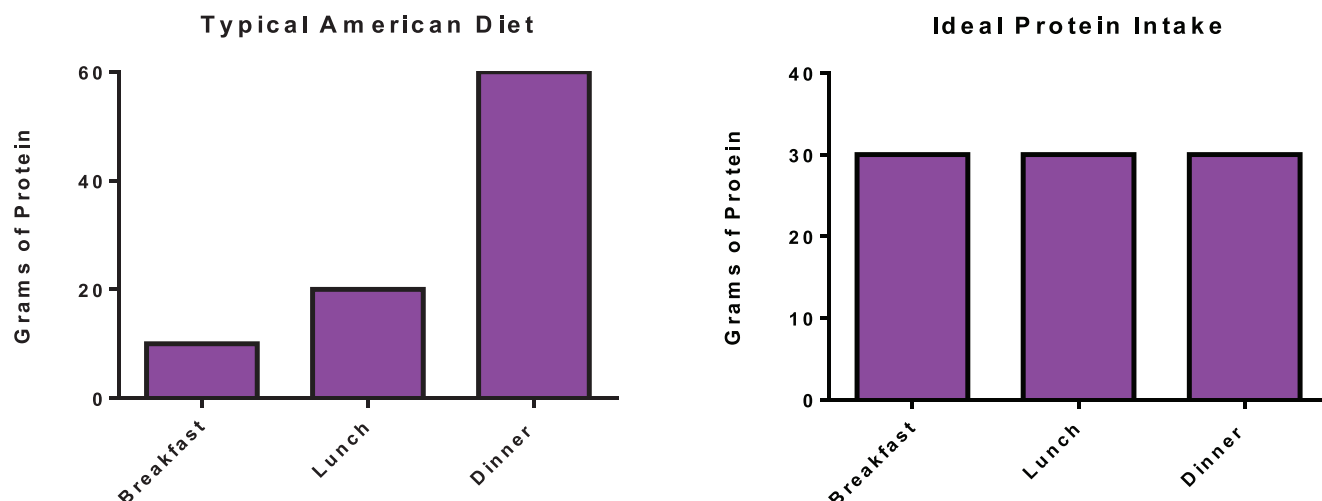
It is important to consume a nutrient-packed breakfast that has at least 30 grams of protein because after not eating for 8 to 10 hours, your body is in a breakdown mode (catabolic state). Science shows that it takes 30 grams of protein to refuel the body at breakfast. This switches the body back to an anabolic state (building mode). Unfortunately, the majority of Americans eat too little protein at breakfast time and eat a lot of protein at dinner (see Figure 1, page 2). The higher amount of protein (more than 30 grams of protein) typically consumed at dinner time cannot be stored for later muscle use [4, 12].

To meet your protein needs for optimal muscle health, it is important to consume meals containing at least 30 grams of protein [6]. Several studies, in both men and women, have shown that to fully experience all the health benefits of protein you must reach a “key threshold” of 30 grams of high-quality protein [13]. This “key threshold” must be met to stimulate

*Arkansas Is
Our Campus*

Visit our web site at:
<https://www.uaex.uada.edu>

Figure 1. Protein Distribution Between Meals



Adapted from Paddon-Jones & Rasmussen *Curr Opin Clin Nutr Metab Care* 2009, 12:86-90

a variety of processes which lead to the health benefits described above [12, 14].

Why Is Protein Special?

Protein is a key nutrient that is made up of amino acids which we rely on to help build, strengthen, maintain and repair our bodies. In fact, proteins are known as the building blocks of life because every cell in the human body contains proteins and requires them to function properly. There are 20 amino acids that make up protein. Your body can make 11 of them, but nine of them must be provided through the diet. These nine amino acids are essential amino acids [2].

The Source of Protein Matters

Surprisingly, not all protein sources provide all of the amino acids. A high-quality protein, also known as a complete protein, is defined by the proportion of essential amino acids that it contains to satisfy our body's needs. Animal protein sources, such as milk, beef and eggs, are the highest in quality and are also "protein dense" (Table 1). Protein-dense sources provide optimal protein for a relatively low caloric cost (low number of calories). For example, it takes 770 calories of creamy peanut butter and only 170 calories of lean ground beef to reach the "key threshold" of 30 grams of protein. Animal proteins, particularly whey protein, can promote gains in muscle mass and increase satiety (fullness) more efficiently than plant proteins [12-14].

Table 1. Smart Protein Choices

Food Source	Serving Size	Protein (grams)	Calories
Isolate Whey Protein	¼ cup	27	154
Ground Beef, 95%	4 ounces	29	185
Grilled Skinless Chicken Breast	4 ounces	34	179
Hard Boiled Jumbo Egg	1 egg	8	92

Protein-Packed Breakfast Recipes

Vanilla Cream Overnight Oats

Makes 1 serving

Nutrition Facts: 507 calories, 14g fat, 51g carbohydrates, 35g proteins, 9g fiber

Ingredients:

- 1/3 cup steel-cut oats
- 1/2 scoop of vanilla protein powder
- 1 tablespoon peanut butter or almond butter
- 1/4 teaspoon cinnamon
- 1/2 teaspoon vanilla extract
- Pinch of salt
- 1/2 cup low-fat milk (cows, soy, almond, etc.)
- 1/3 cup plain low-fat Greek yogurt
- 1/3 cup berries

How to make it:

- 1) Place oats, powder, nut butter, vanilla, cinnamon and salt in bowl. Heat and pour in the milk. Stir ingredients until everything is evenly coated. Cover overnight in the refrigerator.
- 2) In the morning, stir in half of the yogurt and heat for 1-2 minutes in the microwave. Top with remaining yogurt, berries and flaxseed. Add water for a thinner oatmeal. Enjoy!

Vegan-Friendly Protein Breakfast Smoothie

Makes 1 serving

Nutrition Facts: 351 calories, 13g fat, 35g carbohydrates, 28g proteins, 17g fiber

Ingredients:

- 1½ cups pea, soy or almond non-dairy milk
- ½ banana
- 1 scoop pea chocolate protein powder
- 2 teaspoons cocoa powder
- 1 teaspoon vanilla
- 1 tablespoon chia seeds
- ½ cup ice

How to make it:

- 1) Pour milk and ice into a blender. Place banana, powder, cocoa powder, vanilla and chia seeds into the blender.
- 2) Blend to mix.

Egg and Veggie Scramble

Makes 1 serving

Nutrition Facts (includes tortilla): 444 calories, 27g fat, 19g carbohydrates, 28g proteins, 2g fiber

Ingredients:

- 3 eggs
- 1 teaspoon olive oil
- 1 pinch of salt
- ½ teaspoon pepper
- 1 ounce shredded cheese
- 1 cup mixed veggies: spinach, onions, bell peppers, arugula, mushrooms, etc.
- Optional: whole-grain tortilla/whole grain light English muffin

How to make it:

- 1) Heat olive oil over medium-high heat in a skillet. Add veggies and sauté.
- 2) In a mixing bowl, beat together eggs. Add egg mixture and seasonings to skillet. Gently mix until eggs are set.
- 3) Mix in cheese and serve immediately or place mixture on your favorite whole-grain tortilla or light English muffin. Enjoy!

References

1. Leidy, H.J., L.C. Ortinau, S.M. Douglas and H.A. Hotel. Beneficial effects of a higher-protein breakfast on the appetitive, hormonal and neural signals controlling energy intake regulation in overweight/obese, “breakfast-skipping,” late-adolescent girls. *Am J Clin Nutr.* 2013; 97(4):677-688.
2. Paddon-Jones, D. and H. Leidy. Dietary protein and muscle in older persons. *Curr Opin Clin Nutr Metab Cae.* 2014; 17(1):5-11
3. Odegard, Andrew O., D.R. Jacobs, Jr., Lyn M. Steffen, Kinda Van Horn, David S. Ludwig and Mark A. Pereira. Breakfast Frequency and Development of Metabolic Risk. *Diabetes Care.* 2013; 36.
4. Phillips, S.M., S. Chevalier and H.J. Leidy. Protein “requirements” beyond the RDA: implications for optimizing health. *Appl Physiol Nutr Metab.* 2016; 41(5):565-572.
5. Rand, William M., P.L. Pellett, and Vernon R. Young. Meta-analysis of nitrogen balance studies for estimating protein requirements in healthy adults. *Am J Clin Nutr.* 2003.
6. Loenneke, J.P., P.D. Loprinzi, C.H. Murphy and S.M. Phillips. Per meal dose and frequency of protein consumption is associated with lean mass and muscle performance. *Clin Nutr.* 2016; 35(6):1506-1511.
7. Bauer, J., G. Biolo, T. Cederholm, M. Cesari, A.J. Cruz-Jentoft, J.E. Morley, S. Phillips, C. Sieber, P. Stehle, D. Teta, R. Visvanathan, E. Volpi and Y. Boirie. Evidence-based recommendations for optimal dietary protein intake in older people: a position paper from the PROT-AGE Study Group. *J Am Med Dir Assoc.* 2013; 14(8):542-559.
8. Baum, J.I., and R.R. Wolfe. The link between dietary protein intake, skeletal muscle function and health in older adults. *Healthcare (Basel).* 2015; 3(3):529-543.
9. Houston, Denise K., B.J. Nicklas, Jingzhong Ding, Tamara B. Harris, Frances A. Tylavsky, Anne B. Newman, Jung Sun Lee, Nadine R. Sahyoun, Marjolein Visser and Stephen B. Kritchevsky. Dietary protein intake is associated with lean mass change in older, community-dwelling adults: the Health, Aging, and Body Composition (Health ABC) Study. *Am J Clin Nutr.* 2008:87-150.
10. Layman, D.K. and J.I. Baum. Dietary protein impact on glycemic control during weight loss. *The Journal of Nutrition.* 2004; 134(4):968S-973S.
11. Park, Y-M, T.D. Heden, Y. Liu, Y. L.M. Nyhoff, J.P. Thyfault, H.J. Leidy, and J.A. Kanaley, A High-Protein Breakfast Induces Greater Insulin and Glucose-Dependent Insulinotropic Peptide Responses to a Subsequent Lunch Meal in Individuals with Type 2 Diabetes. *The Journal of Nutrition.* 2015; 145(3):452-458.

12. Layman, D.K. Dietary Guidelines should reflect new understandings about adult protein needs. *Nutrition & Metabolism*. 2009; 6(1):12.
13. Symons, T.B., M. Sheffield-Moore, R.R. Wolfe and D. Paddon-Jones. A moderate serving of high-quality protein maximally stimulates skeletal muscle protein synthesis in young and elderly subjects. *J Am Diet Assoc*. 2009; 109(9):1582-1586.
14. Leidy, H.J., M.J. Bossingham, R.D. Mattes, and W.W. Campbell. Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness during energy restriction compared to other meal times. *British Journal of Nutrition*. 2008; 101(06):798.

AUBREE HAWLEY is a Ph.D. student - nutrition/food science at the Department of Food Science, University of Arkansas System Division of Agriculture in Fayetteville. **DR. JAMIE I. BAUM** is an associate professor - nutrition with the Department of Food Science, University of Arkansas System Division of Agriculture in Fayetteville.

Pursuant to 7 CFR § 15.3, the University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services (including employment) without regard to race, color, sex, national origin, religion, age, disability, marital or veteran status, genetic information, sexual preference, pregnancy or any other legally protected status, and is an equal opportunity institution.