

Protein and the Older Adult¹

Amanda L. Ford and Wendy J. Dahl²

Protein is a nutrient that provides energy for our bodies and is involved in many vital functions, such as repair, maintenance, and immune function. It is a major structural and functional component of every cell in our body, including enzymes and many hormones.

Protein is made up of amino acids that are both made by our body and consumed in our diet. There are 20 amino acids. Essential amino acids are those amino acids that are required in our diet. Our body cannot make them in sufficient amounts so we must get them from our food. Non-essential amino acids can be made in sufficient amounts by our body. During times of stress, injury, and trauma some of these non-essential amino acids may become essential because our body can no longer make them in the necessary amounts. In these serious situations, we must get these amino acids, called “conditionally essential,” from our food.

Protein Intake and Older Adults

Many older adults do not consume enough protein to meet the current recommendation (Berner et al. 2013). In addition, the current recommendation for protein intake is lower than the amount thought to be needed to maintain muscle and strength as we age (Baum, Kim, and Wolfe 2016).

Aging is associated with a decrease in muscle and an increase in body fat. The loss of muscle and strength as we age is known as sarcopenia and may result in disability, falls, and hospitalization (Dhillon and Hasni 2017). Older adults who consume more dietary protein lose less muscle

over time than those who consume lower amounts of protein (Baum, Kim, and Wolfe 2016). Optimal protein intake can help maintain muscle and potentially build muscle, especially when combined with exercise.

Protein requirements for older adults increase during injury, illness, and surgery (Bauer and Diekmann 2015). Diets higher in protein are suggested for older adults at nutritional risk due to unintended weight loss.

How much protein do older adults need?

The current Recommended Dietary Allowance (RDA) for protein, proposed to meet the needs of most healthy adults, is 0.8 grams (g) per kilogram (kg) (1 kg = 2.2 pounds) of body weight (IOM 2005). That is about 55 g of protein for a 150 lb. adult. The RDA is set to meet the needs of most healthy individuals. Currently, the RDA for protein is the same for all healthy adults over 19 years of age regardless of the many physiological and metabolic changes that occur with increasing age. It has been suggested that a higher protein recommendation, greater than 1.2 g per kg is needed for older adults (Baum, Kim, and Wolfe 2016). Following this higher recommendation, a 150 lb. adult would need to consume at least 82 g of protein per day.

For older adults who are overweight, decreasing added sugars and fat will help keep calories in check when also increasing protein intake. Although weight loss in obese older adults poses risk due to muscle loss, consuming

1. This document is FSHN17-2, one of a series of the Food Science and Human Nutrition Department, UF/IFAS Extension. Original publication date March 2017. Visit the EDIS website at <http://edis.ifas.ufl.edu>.

2. Amanda L. Ford, graduate student; and Wendy J. Dahl, associate professor; Food Science and Human Nutrition Department; Gainesville, FL 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office.

U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.

1.2 g per kg of protein may result in improved function compared to those consuming only 0.8 g of protein per kg (Porter Starr et al. 2016). Older adults who choose a higher protein weight loss diet lose less muscle and more fat (Kim et al. 2016).

Adequate protein intake can be achieved by consuming a variety of foods that provide protein. Generally, animal-based foods are higher in protein and are easily digested. Plant-based foods, such as legumes and grains (e.g. wheat), also contain significant amounts of protein, although in lower amounts per serving than animal products.

When selecting protein foods, recommendations suggest (USDA 2015)

- choosing lean or low-fat meat and poultry;
- consuming at least 8 oz-equivalents of seafood each week;
- choosing nuts and seeds (note: ½ oz of nuts counts for 1 oz of a protein food);
- limiting your intake of processed meats (luncheon meats, sausage, hot dogs); and
- exploring vegetarian protein foods, e.g. legumes.

The USDA MyPlate provides guidance on recommended servings of protein foods. (See <https://www.choosemyplate.gov/protein-foods>.) Table 1 lists the protein content of some common foods.

Table 1. Protein content of common foods (USDA 2015).

FOOD	Protein (g)
Chicken, breast, skinless, grilled, cooked (3 oz)	26
Beef, tenderloin steak, grilled, cooked (3 oz)	26
Salmon, sockeye, cooked (3 oz)	23
Veggie patty (1 patty)	9
Beans, black (½ cup)	8
Milk, reduced fat 2% (1 cup)	9
Swiss Cheese (1 oz)	8
Mozzarella Cheese (1 oz)	6
Yogurt, plain, low-fat milk (6 oz)	9
Yogurt, Greek, plain, low-fat (5 oz)	15
Egg, whole, large, cooked hardboiled (1)	6
g = gram, oz = ounce	

High Protein Convenience Foods

Food companies have responded to consumer interest and demand by offering products that are sold and marketed as “high protein.” High protein products are commonly marketed to older adults (eg., Ensure[®] High Protein, BOOST[®] High Protein, Special K[®] Protein Cereal, and a variety of

protein bars). While these convenience foods provide a source of protein, you can also meet your requirement for protein by choosing less processed foods such as meat, poultry, fish, dairy, and legumes.

Summary

Older adults are at risk for decreased strength and lean muscle mass and may not be consuming adequate protein. Older adults may benefit from higher protein to help maintain their weight, reduce muscle loss and maintain overall health. Choosing foods higher in protein for each meal will help to ensure that protein needs are met.

Learn More

The Family and Consumer Sciences (FCS) agent at your local UF/IFAS Extension office may have more written information, as well as nutrition classes for you to attend. A registered dietitian (RD) can also provide you with reliable information. It is important to speak with your healthcare provider before deciding to make any dietary changes.

References

- Bauer, J. M., and R. Diekmann. 2015. “Protein and Older Persons.” *Clin Geriatr Med* 31 (3):327–38. doi: 10.1016/j.cger.2015.04.002.
- Baum, J. I., I. Y. Kim, and R. R. Wolfe. 2016. “Protein Consumption and the Elderly: What Is the Optimal Level of Intake?” *Nutrients* 8 (6). doi: 10.3390/nu8060359.
- Berner, L. A., G. Becker, M. Wise, and J. Doi. 2013. “Characterization of dietary protein among older adults in the United States: amount, animal sources, and meal patterns.” *J Acad Nutr Diet* 113 (6):809–15. doi: 10.1016/j.jand.2013.01.014.
- Dhillon, R. J., and S. Hasni. 2017. “Pathogenesis and Management of Sarcopenia.” *Clin Geriatr Med* 33 (1):17–26. doi: 10.1016/j.cger.2016.08.002.
- Kim, J. E., L. E. O’Connor, L. P. Sands, M. B. Slebodnik, and W. W. Campbell. 2016. “Effects of dietary protein intake on body composition changes after weight loss in older adults: a systematic review and meta-analysis.” *Nutr Rev* 74 (3):210–24. doi: 10.1093/nutrit/nuv065.

Porter Starr, K. N., C. F. Pieper, M. C. Orenduff, S. R. McDonald, L. B. McClure, R. Zhou, M. E. Payne, and C. W. Bales. 2016. "Improved Function With Enhanced Protein Intake per Meal: A Pilot Study of Weight Reduction in Frail, Obese Older Adults." *J Gerontol A Biol Sci Med Sci* 71 (10):1369–75. doi: 10.1093/gerona/glv210.

U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015. "2015–2020 Dietary Guidelines for Americans. 8th Edition." <http://health.gov/dietaryguidelines/2015/guidelines/>.