



Demystifying Protein

NUTRITION CONNECTION

Protein plays an important role in a healthy diet



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Protein has become a “buzzword” associated with nutrition and current diet trends for increasing longevity and for healthy aging. We see lots of information focusing on protein and high-protein diets. In addition, we see advertising for protein bars, powders, and shakes. These products are often used by athletes attempting to build muscle mass, or by dieters wanting low-calorie options.

As our population is aging, we also see promotion of these types of products to support good health and prevent loss of lean body mass. Choosing protein food sources can be confusing in terms of knowing what to buy for overall health, and what types of protein to select with common diet trends such as gluten-free, plant-based, vegetarian, and others.

We need to remember that our clients and their families trust healthcare providers for direction on what they should be doing regarding dietary protein and their overall health. It is critical that we provide best practice recommendations derived from evidence-based information. This article offers a general overview of protein with brief descriptions of some current trends to support best practice recommendations and services to our clients.

WHAT IS PROTEIN?

Protein is an important component of every cell in the body. Hair and nails are mostly made of protein. The body uses protein to build and repair tissues and to make enzymes, hormones, and other body chemicals. Protein is a key building



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block of bones, muscles, cartilage, skin, and blood. It makes up the enzymes that power many chemical reactions and the hemoglobin that carries oxygen in your blood.

Along with fat and carbohydrates, protein is a “macronutrient,” meaning the body requires relatively large amounts of it. Vitamins and minerals, which are needed in only small quantities, are called “micronutrients.” But unlike fat and carbohydrates, the body does not store protein, and has none to pull out of reserves when it needs a new supply.

HOW MUCH PROTEIN DO WE NEED?

The National Academy of Medicine (NAM) recommends that adults get a minimum of 0.8 grams of protein for every kilogram of body weight per day, or just over 7 grams for every 20 pounds of body weight. For a 140-pound person, that means about 50-51 grams of protein each day. NAM also sets a wide range for acceptable protein intake—anywhere from 10 percent to 35 percent of calories each day.

Research is now showing that higher levels may be needed for adults age 65-plus. With aging comes the increased risk of sarcopenia (loss of muscle mass, strength, and function). The effects of protein deficiency and malnutrition range in severity from growth

failure and loss of muscle mass to decreased immunity, weakening of the heart and respiratory system, and even death.

People with sarcopenia or wounds may need 1.2 to 1.5 g/kg of protein a day. It is also important to eat the right type of proteins, including some that provide the amino acid leucine, which has been shown to preserve body muscle. “Leucine is found in higher amounts in animal foods: beef, lamb, pork, poultry, fish, eggs, milk, and products made with milk. It’s also found in soybeans and, to a lesser



extent, other beans, nuts, and seeds.”

Individuals need to be cautious when making any change to their diet, including incorporating more protein, as higher protein intake poses a risk to older people when they already suffer from a kidney function impairment.

TYPES OF PROTEIN

Protein, whether derived from plant or animal foods, probably has similar effects on

health, although the mix of amino acids can have health implications. Some proteins found in food are “complete,” meaning they contain all 20-plus types of amino acids needed to make new protein in the body. The essential amino acids in protein are key nutrients for muscle health, but older adults are less responsive to low doses of amino acid intake compared to younger people.

Animal-based foods (meat, poultry, fish, eggs, and dairy foods) tend to be good sources of complete protein, while plant-based foods (fruits,

CONSIDERING ALL SOURCES OF PROTEIN is important when it comes to animal foods. Generally, poultry and various seafoods are best; eggs can be a good choice, too.

vegetables, grains, nuts, and seeds) often lack one or more essential amino acids. Those who do not eat animal-based foods can consume a variety of protein-containing plant foods each day to get all the amino acids needed to make new protein, and also choose to incorporate complete plant proteins like quinoa and chia seeds.

Other proteins are incomplete, lacking one or more of the nine essential amino acids

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which our bodies cannot make from scratch or from other amino acids.

PLANT-BASED, WHOLE FOOD PLANT-BASED, AND VEGAN DIETS

A plant-based diet means just that: the diet is plant-based and the individual may refer to themselves as a flexitarian. The actual term “plant-based” is not regulated and has no exact legal definition, so each individual determines whether or not they eat any meat or dairy products and is very person-centered. “Plant-based” does mean more fruits, vegetables, legumes, tubers, nuts, seeds, and grains. While there is an increased focus on adding plant foods to the diet, there can technically still be animal products—although ideally less.

When changing the ratio of plant-based to animal-based foods in the diet, there is generally increased intake of fiber, vitamins, minerals, and antioxidants, which can help lower blood sugar, bad (LDL) cholesterol, and blood pressure.

So, what is the difference between a plant-based diet and a whole food plant-based diet?

A plant-based diet could technically consist of processed foods like chips and candy, sugar-sweetened beverages, and foods rich in simple carbohydrates such as bleached flour and white rice.

When the term “whole food plant-based diet” is used, then the focus is on whole plant foods found in nature that have no added sugar or preservatives, and provide their naturally-occurring essential nutrients.

Many also assume that plant-based means vegetarian. Both plant-based and vegan diets are plant-based diets, however a plant-based diet may not be the choice for someone who is vegan, as a vegan diet does not include dairy products, eggs, or any other items derived from animals.

Other types of vegetarian diets to consider:

- Lacto-ovo-vegetarian diet, which includes both dairy products and eggs.
- Lacto-vegetarian diet, which includes dairy products but avoids eggs.
- Ovo-vegetarian diet, which includes eggs but not dairy products.

WHAT DOES A HEALTHY PLANT-BASED MEAL LOOK LIKE?

A healthy plant-based meal should include proper portions of vegetables, fruits, whole grains, healthy protein, and healthy oils. The Harvard Healthy Eating Plate is a visual guide created by the Harvard School of Public Health and editors at Harvard Health Publishing. The differences between the Harvard Healthy Eating Plate (see illustration) and the USDA MyPlate regarding protein is that the former encourages choosing fish, poultry, beans or nuts, and suggests limiting red meat and avoiding processed meat.

In addition to general guidance from the Harvard Medical School’s Healthy Eating Plate, some details and tips for the best protein choices include the following:

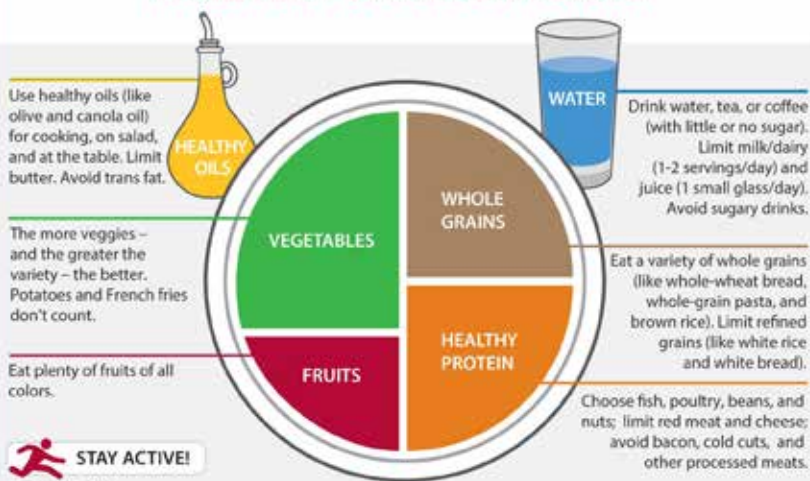
Get Protein from Plants When Possible

Eating legumes (beans and peas), nuts, seeds, whole grains, and other plant-based sources of protein is a win for health. If most of your protein comes from plants, make sure to mix up the sources to ensure no “essential” components of protein are missing. Here are some examples for each category:

- Legumes: lentils, beans (adzuki, black, fava, chickpeas/garbanzo, kidney, lima, mung, pinto), peas (green, snow, snap, split), edamame/soybeans (and products made from soy: tofu, tempeh, etc.), peanuts.
- Nuts and Seeds: almonds, pistachios, cashews, walnuts, hazelnuts, pecans, hemp seeds, squash and pumpkin seeds, sunflower seeds, flax seeds, sesame seeds, chia seeds.



HEALTHY EATING PLATE



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- Whole Grains: kamut, teff, wheat, quinoa, rice, wild rice, millet, oats, buckwheat.
- Other: while many vegetables and fruits contain some level of protein, it's generally in smaller amounts than the other plant-based foods. Some examples with higher protein quantities include corn, broccoli, asparagus, Brussels sprouts, and artichokes.

Upgrade Sources of Animal Protein

Considering all sources of protein is particularly important when it comes to animal-based foods.

- Generally, poultry (chicken, turkey, duck) and various seafoods (fish, crustaceans, mollusks) are best; eggs can be a good choice, too.
- Dairy foods are recommended in moderation (1-2 servings a day, and incorporating yogurt rather than getting all servings from milk or cheese).
- Red meat—which includes unprocessed beef, pork, lamb, veal, mutton, and goat meat—should be consumed on a more limited basis. Red meat should be in small amounts or only on special occasions.

- Processed meats, such as bacon, hot dogs, sausages, and cold cuts, should generally be avoided. Although these products are often made from red meats, processed meats also include items like turkey bacon, chicken sausage, and deli-sliced chicken and ham. Processed meat refers to any meat that has been “transformed through salting, curing, fermentation, smoking, or other processes to enhance flavor or improve preservation.”

Another resource is MyPlate for Older Adults, from the Human Nutrition Research Center on Aging. MyPlate for Older Adults provides examples of foods that fit into a healthy, well-balanced diet and corresponds with the federal government's 2015-2020 Dietary Guidelines for Americans.

Recommendations from MyPlate for Older Adults for protein include:

- Choose a variety including seafood, lean meats and poultry, eggs, legumes (beans and peas), nuts, seeds, soy products, and

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REFERENCES

- *Nutrient Recommendations: Dietary Reference Intakes (DRI) U.S. Department of Health & Human Services.* https://ods.od.nih.gov/Health_Information/Dietary_Reference_Intakes.aspx
- *Healthy Eating Plate: Harvard University.* <https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>
- *MyPlate for Older Adults:* <https://hnrca.tufts.edu/myplate/myplate-for-older-adults/protein/>

low/non-fat dairy products.

- Prepare protein-rich foods with little added salt and saturated fat (butter, cheese), experiment with new herbs and spices.

SUMMING IT UP

It is critical for healthcare providers to understand the

importance of protein in the diet and assist clients in knowing how to best select appropriate food sources to meet their health needs. Use of best-practice resources supported by evidence-based research and recommendations for protein should always be our goal, both to reduce confusion for our clients and to promote positive healthcare outcomes. **E**

CE Questions | NUTRITION CONNECTION



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- Protein is a _____, which means the body needs relatively large amounts of it.
 - Vitamin
 - Micronutrient
 - Macronutrient
- Protein is an important building block of:
 - Bones, muscles, cartilage, skin, and blood
 - Bones and blood
 - Muscles for chewing
- The National Academy of Medicine recommends that adults get a minimum of ____ grams of protein per kilogram of body weight per day.
 - .6
 - .8
 - .9
- Adults 65 and older, or those having loss of muscle mass or wounds, may need ____ grams per kilogram of protein each day.
 - .9 - 1.0
 - 1.0
 - 1.0 - 1.2
- Protein sources are considered “complete” when they contain all amino acids needed to make new protein in the body, or are _____ when they lack some of the essential amino acids which our bodies cannot make.
 - Incomplete
 - Lacking
 - Minimal
- A “plant-based” diet means:
 - A diet with a focus on adding plant foods
 - A diet of strictly plant foods and no animal products
 - A diet which includes only plants that have been grown in a farmer’s field
- An individual that adheres to a “plant-based” diet may refer to themselves as a _____.
 - Lacto-vegetarian
 - Flexitarian
 - Ovo-vegetarian

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