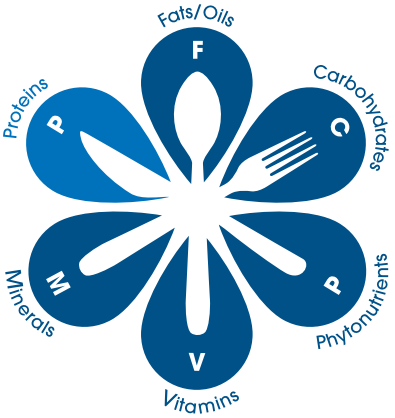
THE INSTITUTE FOR FUNCTIONAL MEDICINE®

Macronutrients:

Proteins

Proteins are found in every living thing on earth. In the human body, protein is an essential component of muscles, skin, hair, and bones, and is found in nearly every other tissue and body part. Protein is essential for proper muscle development and function, bone health, connective tissue strength, tissue repair and growth, blood oxygenation, and basic cell activity.

All proteins are made up of amino acids, which are considered to be the building blocks of life. Our hormones, DNA, neurotransmitters, and most of our muscles are made almost entirely from amino acids. Our bodies do not store protein, nor do they make all of the amino acids needed for the body to function properly. This means that we must take in protein from our food on a daily basis. Thankfully, protein is found in many different foods.



Macronutrients are a class of compounds that provide humans with energy and essential nutrients. They are required by the body in relatively large amounts on a daily basis and make up the bulk of the diet. Proteins, fats, and carbohydrates are the main types of macronutrients that provide the body with energy.

Sources of Protein

Animal Proteins: Proteins from animal sources are considered to be "complete" proteins, because they contain all of the amino acids your body needs to get from food (known collectively as essential amino acids). Animal proteins include meat, poultry, eggs, fish, and shellfish.

- **Dairy products**: Dairy products like milk and yogurt are good sources of both protein and carbohydrates. Cheese is also a good protein source, but is low in carbohydrates. Note that not everyone can digest dairy properly, and dairy is not necessary to include in a balanced diet. For those who choose to consume dairy, organic sources are preferred.

Plant Proteins: Most plant proteins are considered to be "incomplete," because they contain low levels of some essential amino acids. High-protein vegetables include dark leafy greens (collard greens, spinach, mustard greens), asparagus, bok choy, broccoli, Brussels sprouts, and cauliflower. Foods like tofu, tempeh, and spirulina are also plant proteins.

- **Beans and legumes:** Beans and legumes are good sources of both protein and carbohydrates. They also contain other vitamins and minerals like folate (vitamin B9), potassium, iron, and magnesium. Combining beans and legumes with whole grains (not necessarily at the same meal) supplies the body with all essential amino acids, forming a complete protein.
- **Nuts and seeds:** Nuts and seeds are sources of both protein and fat. They also contain many other vitamins and minerals like magnesium, zinc, selenium, and copper.

Recommendations for Protein Intake

In the United States, the recommended dietary allowance of protein is 46 grams per day for women and 56 grams per day for men. These figures apply to healthy adults over the age of 19, and are a measure of the level of protein needed to meet daily nutritional requirements. Other research suggests that adults should get a minimum of 8 grams of protein for every 20 pounds of body weight.

According to the Dietary Guidelines for Americans, protein should account for about 10% to 35% of calories per day. Extra protein is required for pregnant or nursing women, athletes, active individuals, the elderly, and those suffering from or recovering from an illness. IFM recommends that protein should account for 20% to 30% of daily calories for most individuals, including those with health concerns requiring advanced therapeutic dietary interventions.

If you're unsure about how much protein you should be eating, ask your functional medicine practitioner. You may need extra protein to help build or repair tissues temporarily, but remember that excess protein you consume is not stored in the body. Consuming too much protein on a regular basis can put a strain on your kidneys, which can lead to serious health conditions.

Tips for Incorporating Protein Into a Balanced Diet

- Eat some protein with each meal and snack in order to distribute protein evenly throughout the day.
- Replace instant oatmeal with a vegetable omelet or Greek yogurt topped with berries and almond slices.
- Choose non-dairy milks that contain protein, such as soy milk or oat milk.
- Try edamame, roasted chickpeas, or a bean dip with vegetables for an afternoon snack.
- Add beans or legumes to a salad, such as chickpeas or lentils.

REFERENCES

1. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2020-2025. 9th Edition. December 2020. Available at DietaryGuidelines.gov.