

Protein Should Not Be a Food Group

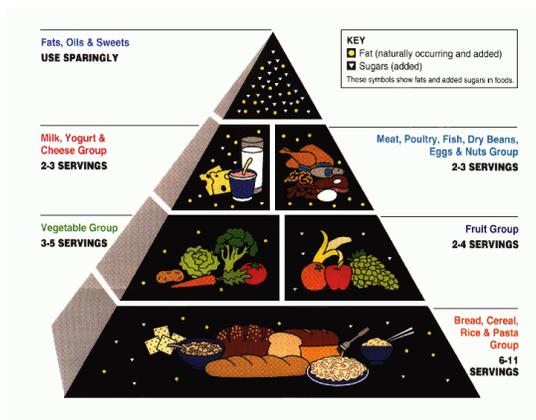
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Americans are obsessed with protein. Protein is usually offered as the centerpiece of every meal. Restaurant menus state to pick a protein, which usually refers to meat or beans on the menu. Every health store and health guru will tout their favorite protein powders or shakes. Most convenience and grocery stores sell protein bars and food items labeled high protein. The Dietary Guidelines for Americans (DGA) state that healthy dietary patterns include “Protein foods, including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products.” (USDA, 2020). However, protein is not a food group, as protein is made in our bodies by linking amino acids together, and every single whole food that we eat contains all the essential amino acids that we need to make protein.

The notion of ensuring adequate protein in our diet came from the earliest version of the food pyramid established by the World Health Organization in 1989. Up until 1992, the U.S. Department of Agriculture recommended its Basic Four food groups: milk, meat, fruit and vegetables, and breads and cereals. In 1992, the USDA adopted the food pyramid as a guide (Fig. 1); wherein they began to introduce protein as an essential nutrient. In the late 1980’s the USDA started an Eating Right Pyramid food guide. After pressure from the meat and dairy industry to include protein rich foods in 1991, they dropped the first pyramid and included protein in the 1992 rendition (Nestle, 1993). Prior to 1992, protein was not considered a food group.

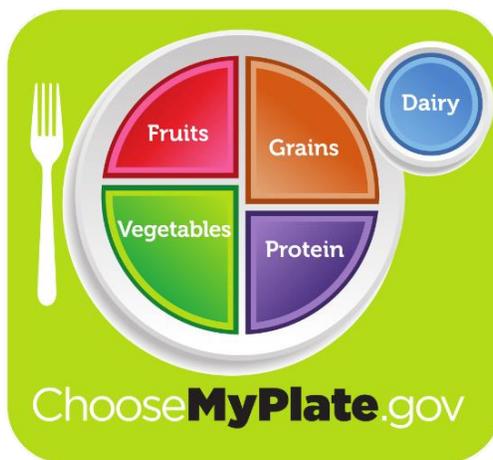
Fig. 1



[Image Source: [Wikimedia Commons](#)]

In the 2011 rendition of the DGA, the USDA introduced MyPlate which divided the food groups into 5 categories that are: fruits, vegetables, grains, protein, and dairy (Fig. 2). Again, this was done with pressure from the meat and dairy industry to include protein and dairy in the dietary guidelines. This rendition placed protein front and center in its recommendations which exacerbated our protein obsession. Now Americans eat almost twice the amount of protein needed (Ko, 2020).

Fig. 2



[Image Source: [Wikimedia Commons](#)]

Sadly, a protein rich food is not necessary for us to get adequate protein. Consider that a Silverback gorilla is strong and healthy, with no consideration of eating adequate protein, and forages on around 40 lbs. of vegetation and fruit daily. A male Silverback does not eat meat or beans, yet somehow maintains his 300 or so lbs. of muscle. An infant human child can survive on breast milk alone with the compositional breakdown containing less than 1% protein (Jenness, 1979), which would not be considered a protein rich meal. This means that a growing child does not need protein rich foods to ensure adequate growth and development. Every living creature needs to derive the nutrients necessary to make protein or they would not survive. Yet the 4,000 herbivorous species on planet Earth get enough amino acids by eating only plants.

To understand what protein is and how it works in our bodies, we must look at it from a scientific standpoint. Simply stated, proteins are a molecular structure of many amino acids that are bound together in functional groups with chemical bonds (Alberts, 2002). Our bodies make most of the protein that we need for our cells in our liver. Protein synthesis or production occurs by coding combinations of amino acids in our own cells which is regulated by our DNA and RNA (BiologyDictionary.net Editors, 2020). Nine (9) of the amino acids that we need to make protein are derived only from our diet and are called essential amino acids. When we eat foods that contain amino acids, we break them down in the digestive system and the amino acids are taken into our cells to form the chains to make protein. Proteins are easily denatured or broken down by a simple change in pH level, when heated, or with acids which breaks the hydrogen bonds (Medical Dictionary, 2012). You don't need to eat protein to make protein, you need to ensure that you get enough amino acids in your diet, to make the proteins. Our bodies do not care where we get those amino acids but needs to get enough of them.

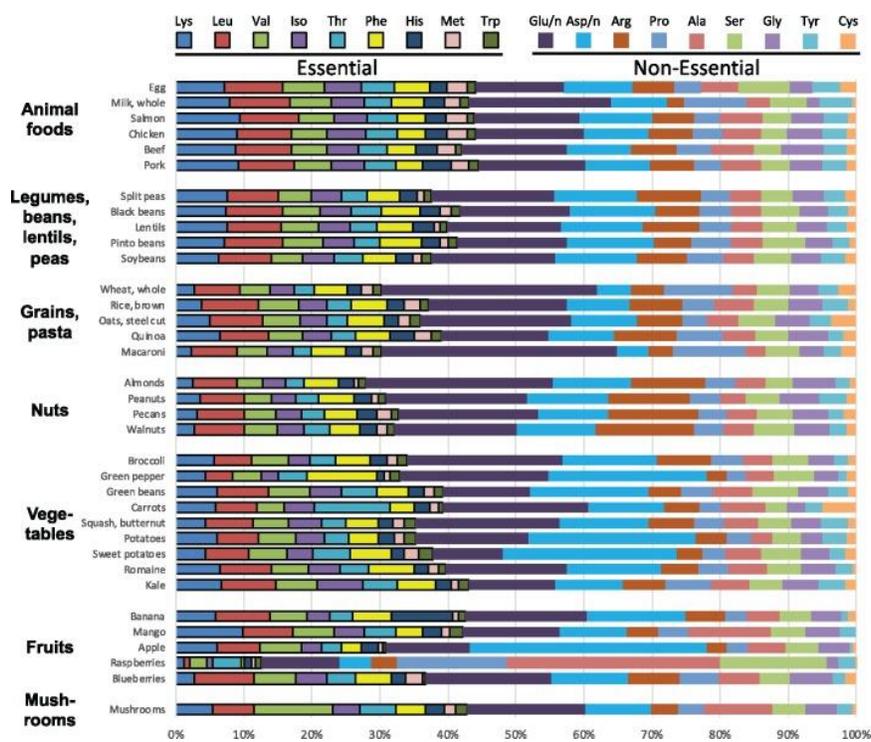
Every whole plant food contains a combination of the 20 amino acids that we need to survive and thrive. According to Dr. Christopher Gardner from Stanford University:

There are common misconceptions about whether all plant foods contain all 20 amino acids. It is widely believed among both health professionals and the general population that certain plant foods are entirely devoid of specific amino acids and, thus, that protein adequacy cannot be supported by plant foods alone. In fact, all plant foods contain all 20 dietary amino acids (Gardner, 2019).

To further illustrate his point, Dr. Gardner charted the amino acid break down of a variety of foods and you can see that brown rice has a similar amino acid content as chicken (Fig. 3).

Hypothetically, we could eat what a deer eats if we eat enough calories and enough essential amino acids. Certainly, we would get enough amino acids by eating a variety of plant foods without any focus on protein or protein rich foods.

Fig. 3.



[Image Source: Gardner, 2019]

In the western world we do not see protein deficiency, with the rare exception in anorexia nervosa, very elderly frailty, or in a disease called Cachexia which is associated with cancer, AIDS, and other severe diseases. In all cases, the individuals are not getting enough calories. True protein deficiency is called Kwashiorkor and is seen in extreme malnourishment. These are the images you might see on infomercials about giving to starving children with distended bellies in Africa or India. What we do see in the western world is a host of diseases associated with too much protein, especially from animal sources, like chronic kidney disease. High protein intake can lead to kidney damage (Ko, 2017). One-in-seven Americans suffer from chronic kidney disease which is 15% of the population according to the CDC (2021). With 15 out of 100,000 people dying from kidney disease, our focus on protein is killing us.

So, our unhealthy obsession with protein is leading to chronic disease, and we have inadequate, and industry influenced dietary guidelines. We lack understanding of protein synthesis and have no need for concern of protein deficiency because all whole foods contain all 20 amino acids. Broadening our understanding of protein will help to change the narrative. From a policy perspective, the solution is to change the definition of food groups to take the focus away from so-called protein rich foods to stop the macronutrient confusion and its associated chronic diseases.

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