

The Protein Myth

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The Building Blocks of Life

Protein is an important nutrient required for the building, maintenance, and repair of tissues in the body. Amino acids, the building blocks of protein, can be synthesized by the body or ingested from food. There are 20 different amino acids in the food we eat, but our body can make only 11 of them. The nine essential amino acids, which cannot be produced by the body, must be obtained from the diet. A variety of grains, legumes, and vegetables can provide all of the essential amino acids our bodies require. It was once thought that various plant foods had to be eaten together to get their full protein value, otherwise known as protein combining or protein complementing. We now know that intentional combining is not necessary to obtain all of the essential amino acids.¹ As long as the diet contains a variety of grains, legumes, and vegetables, protein needs are easily met.

Protein Requirements

With the traditional Western diet, the average American consumes about double the protein their body needs. Additionally, the main sources of protein consumed tend to be animal products, which are also high in fat and saturated fat.² Most individuals are surprised to learn that protein needs are actually much less than what they have been consuming. The U.S. government recommends 46 and 56 grams of protein for men and women, respectively, on average.³

However, even this value has a large margin of safety, and the body's true need is likely lower for most people. Protein needs are increased slightly for women who are pregnant or breastfeeding. That is, you're eating for two, but one of you is very small, so the increased protein need is modest. In addition, needs are also slightly higher for very active persons. As these groups require additional calories, increased protein needs can easily be met through larger intake of food consumed daily.

The Problems With High-Protein Diets

High-protein diets for weight loss, disease prevention, and enhanced athletic performance have been publicized over recent years with very little scientific support. Studies show that the healthiest diet is one that is high in carbohydrate, low in fat, and adequate in protein. Increased intake of whole grains, fruits, and vegetables is recommended for controlling weight and preventing diseases such as cancer and heart disease.⁴⁻⁶ High-carbohydrate, low-fat, moderate-protein diets are also recommended for optimal

athletic performance.⁷ Contrary to the information on fad diets currently promoted by some popular books, a diet that is high in protein can actually contribute to disease and other health problems.

Osteoporosis. High protein intake is known to encourage urinary calcium losses.^{8,9} Plant-based diets, which provide adequate protein, can help protect against osteoporosis. Calcium-rich plant foods include leafy green vegetables, beans, and some nuts and seeds, as well as fortified fruit juices, cereals, and nondairy milks.

Cancer. Although fat is the dietary substance most often singled out for increasing one's risk for cancer, animal protein also plays a role. Specifically, certain proteins present in meat, fish, and poultry, cooked at high temperatures, especially by grilling and frying, have been found to produce compounds called heterocyclic amines. These substances have been linked to various cancers including those of the colon and breast.¹⁰⁻¹²

Long-term high intake of meat, particularly red and processed meat, is associated with significantly increased risk of colorectal cancer. The World Cancer Research Fund/American Institute for Cancer Research report—[Diet, Nutrition, Physical Activity and Cancer: a Global Perspective](#)—found strong evidence that consuming both red meat and processed meat increases the risk of colorectal cancer.⁵ The World Health Organization declared red and processed meats “[carcinogenic to humans](#)” and observed an increased risk for pancreatic, stomach, and other cancers.¹³ In addition, high-protein diets are typically low in dietary fiber. Fiber appears to be protective against cancer.^{4,13} A diet rich in whole grains, fruits, and vegetables is important in decreasing cancer risk, not to mention adding more healthful sources of protein in the diet.⁵

Impaired Kidney Function. When people eat too much protein, it releases nitrogen into the blood or is digested and metabolized. This places a strain on the kidneys, which must expel the waste through the urine. High-protein diets are associated with reduced kidney function. Over time, individuals who consume very large amounts of protein, particularly animal protein, risk permanent loss of kidney function. Harvard researchers reported that high-protein diets were associated with a significant decline in kidney function, based on observations in 1,624 women participating in the Nurses' Health Study. The good news is that the damage was found only in those who already had reduced kidney function at the study's outset. The bad news is that as many as one in four adults in the United States may already have reduced kidney

function, suggesting that most people who have renal problems are unaware of that fact and do not realize that high-protein diets may put them at risk for further deterioration. The kidney-damaging effect was seen only with animal protein. Plant protein had no harmful effect.¹⁴ For another study, researchers tracked protein sources and chronic kidney disease incidence rates among participants. Results showed that those who consumed the most red and processed meat increased their risk for disease by 73% and 99%, respectively, when compared with those who ate the least. Substituting one serving of red or processed meat with a serving of a different protein source such as legumes or grains lowered the risk for disease by up to 30%. According to the authors,

possible protective mechanisms associated with replacing meat with plants include the lower dietary acid load, lower intake of advanced glycation end products, and increased intake of nutrients associated with improved kidney function.¹⁵

The American Academy of Family Physicians notes that high animal protein intake is largely responsible for the high prevalence of kidney stones in the United States and other developed countries and recommends protein restriction for the prevention of recurrent kidney stones.¹⁶

Heart Disease. Typical high-protein diets are extremely high in dietary cholesterol and saturated fat. The effect of such diets on blood cholesterol levels is a matter of ongoing research. However, such diets pose additional risks to the heart, including increased risk for heart problems immediately following a meal. Evidence indicates that meals high in saturated fat adversely affect the compliance of arteries, increasing the risk of heart attacks.¹⁷ Adequate protein can be consumed through a variety of plant products, which are cholesterol-free and contain only small amounts of fat.

Meal	Protein (in grams)
Breakfast	
1 cup cooked steel-cut oats	7
4 tablespoons raisins	1.2
8 ounces coffee with 2 ounces soy milk	2.3
Banana	1.3
Lunch	
2 small bean burritos	22.7
1 cup steamed broccoli	3.7
Dinner	
Whole-wheat pasta with marinara sauce	14.6
1 bowl minestrone	6.5
Medium slice whole-wheat bread	4.5
Mixed-green side salad	2
TOTAL	65.8

Healthy Protein Sources (in grams)	
Black beans, boiled (1 cup)	15.2
Broccoli (1 cup)	3.7
Bulgur, cooked (1 cup)	5.5
Chickpeas, boiled (1 cup)	14.5
Lentils, boiled (1 cup)	17.9
Peanut butter (2 tablespoons)	7.2
Quinoa, cooked (1 cup)	8.7
Seitan* (3 ounces)	18
Spinach, boiled (1 cup)	5.4
Tempeh (1/2 cup)	16.8
Tofu, firm (1/2 cup)	12.6
Whole-wheat bread (1 slice)	4.5



*A vegetarian product made from wheat gluten; protein value from U.S. Department of Agriculture, Agricultural Research Service. FoodData Central, 2019. fdc.nal.usda.gov.

Source:
Dietary intake data were collected and analyzed using Nutrition Data System for Research software version 2020, developed by the Nutrition Coordinating Center (NCC), University of Minnesota, Minneapolis, Minn.

Weight Loss Sabotage. Many individuals see almost immediate weight loss as a result of following a high-protein diet. In fact, the weight loss is not a result of consuming more protein, but of simply consuming fewer calories. Over the long run, consumption of this type of diet is not practical as it can result in the aforementioned health problems. As with any temporary diet, weight gain is often seen when previous eating habits are resumed. To achieve permanent weight loss while promoting optimal health, the best strategy involves lifestyle changes including a low-fat diet of grains, legumes, fruits, and vegetables combined with regular physical activity.

Premature Death. Higher intakes of animal protein increase the risk of premature death, according to a study published in the *American Journal of Clinical Nutrition*. Researchers followed the diets of 2,641 male participants from the Kuopio Ischaemic Heart Disease Risk Factor Study and compared protein intake

with death from chronic disease. Those who consumed more meat and protein from animal-based sources in place of plant-based sources increased their risk of death from chronic disease by 23%. Possible mechanisms proposed for the increased risk include decreased kidney function and increased production of cancer-related hormones associated with higher animal-based protein intake.¹⁸

Protein Checklist

High protein diets are unhealthy. However, adequate but not excess amounts of protein to maintain body tissues, including muscle, are still important and can be easily achieved on a plant-based diet. If you are uncertain about the adequacy of protein in your diet, take inventory. Make sure you eat adequate calories from a variety of plants, including beans, grains, and vegetables, to meet protein needs.

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