

## **THE RIGHT AMOUNT OF DIETARY PROTEIN**

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Although most of us already know what protein is, it would be good to review some basic concepts about this. Protein contains nitrogen which we obtain in our diet from either plant-based foods or animal products. Amino acids make up the body proteins and are available in different foods. “Total” protein has all of the essential amino acids that the body requires. There are about 20 amino acids that our body uses, 10 of which are “essential” and cannot be made by our body. These amino acids must come from the diet or we will not thrive.

Most of us in this country get enough protein in our diet, but in developing countries where there may be famine and starvation, there can be problems when there is not enough protein in the diet. Also, some vegetarians do not get enough protein in their diet.

When a 1000-lb steer lives in a pasture for two years, he obtains all of his body protein from grass, not from eating meat. The nitrogen in the grass comes from atmospheric nitrogen which has been converted to amino acids and protein. Humans have protein, carbohydrate, and fat requirements which are all part of ideal nutrition for growth, development, and sustaining life.

According to the World Health Organization, the average adult needs about 0.88 grams of protein per kilogram of body weight, while infants need about 1.47 grams per kilogram. The protein requirement of a 220-lb male adult would be about 88 grams of protein each day to stay healthy. One cup of skim milk furnishes 8 grams of protein, while 3-oz of pork furnishes 22 grams. Three ounces of protein in oatmeal furnishes about 13 grams and the same amount of black beans furnishes 22. Three ounces of tofu furnish 36 grams of protein.

Other studies have shown that in non-affluent societies, the protein intake is about 10-12% in the diet, but much of this (usually around 70-80%) is plant protein. In affluent societies, there is about the same average intake, but more of this comes from animal protein. Interestingly, the rates of heart disease and cancer seem to be elevated in the people who eat more animal protein.

It has been postulated in the past that workers produced better if they had a high meat intake. It appears that workers who eat an adequate diet without excessive protein function well.

Menarche (onset of menstruation) and sexual maturation is a function of nutrition in general. It has also been stated that a high protein diet tends to cause earlier overall development sexually. It was noted in the German concentration camps and in other studies that menarche may come later or not at all.

There is a higher incidence of heart disease in countries with high levels of milk consumption, due to the milk protein. These countries would be Finland, Ireland, New Zealand, and the Scandinavian countries.

I recently reviewed “The China Study” by Dr. Colin Campbell, which is the largest nutritional study ever undertaken. This involved 2,400 counties and 880 million people in China. Many diseases were studied, and it was noted that the rate of cancer and heart disease could vary as much as 100 times more in some counties. Interestingly, rural China eats mostly a plant-based diet and gets most of their protein from plants while the US eats animal-based protein.

In China, it was noted that the diseases of affluence including cancer, diabetes, and heart disease could be predicted on the basis of percentage of animal protein in a diet. In the US, the coronary heart disease rate is 17 times higher than the rural Chinese.

The Atkins Diet has a high protein and a high fat content and very little carbohydrate. Interestingly, calcium excretion is increased with a high protein diet, and in one study there was a 53% increase calcium excretion over the normal population, which can help increase the risk of osteoporosis in patients on a high protein diet.

Regarding weight gain, etc., it is interesting that the caloric intake was 30% higher in the Chinese, while the protein intake was less and the body weight was less. It was postulated by Dr. Campbell that animal protein helps generate fat and weight gain, while plant-based protein seems to generate more energy. Laboratory animals on a low protein diet ate more total calories but gained less weight.

What does this tell us in regards to how much protein to eat? Also, are you vegetarian or a meat-eater? In my opinion, the amount of protein eaten per person in this country is too much and likely contributes to heart disease and cancer. Animal-based proteins seem to be less healthy than plant-based proteins, but the animal proteins are more “complete” and require less processing by the body for utilization. A good compromise is to eat some plant protein and some animal protein. Learn to calculate the amount of protein in certain foods and learn how to keep your protein intake in grams somewhere between 0.89-gms to 1.5-gms per kilogram of body weight. Balance your food intake, and remember that you need protein, carbs, and fat every meal and every snack to control your insulin level.