

## Protein Q & A

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Q: Why would a chiropractor recommend a protein supplement?

A: 1) Injured patients who may require a transient protein increase while recovering.

2) For athletes under very heavy training regimens.

Q: How much protein do most Americans get?

A: Generally, more than enough. Before you recommend a patient to increase his or her protein intake, you must find out how much they are consuming. The Health and Human Services Nutrition Monitor of the United States in 1989 published the following chart, which also appeared in the June 1993 edition of the Nutrition Action Health Letter.

Ages	RDA Recommendations For Protein (gm)	Average Protein Consumptions (gm)
Females 11-14	46	66
15-18	44	46
19-24	46	65
25-49	50	65
50-69	50	55
over 70	50	49
Males 11-14	45	92
15-18	59	122
19-24	58	105
25-29	63	105
30-59	63	93
60-69	63	79
over 70	63	69

Q: What is the best way to rate the quality of protein?

A: There are at least six ways to rate protein quality. Of these, the three most common are protein efficiency ratio (PER), net protein utilization (NPU), and biological value (BV).

- Protein efficiency ratio is calculated by the amount of weight gained per gram of protein ingested. These calculations are generally performed on laboratory animals.
- Net protein utilization measures how well the body uses nitrogen in protein that is

consumed.

- Biological value measures how well the body utilizes nitrogen that is absorbed.

This leads us to the next question:

Q: What is the best measurement of protein quality and what types of proteins score the highest?

A: I think biological value is the most accurate way to calculate protein quality.

1	PER	NPU	BV
Casein	2.5	76	71
Egg	3.9	94	100
Whey	3.0	92	104
Soy	2.2	61	74

Q: Explain the difference between whey and casein.

A: Whey and casein are both milk proteins. Mother's milk contains approximately 70 percent whey and 30 percent casein. In contrast, cow's milk contains 30 percent whey and 70 percent casein. Whey is also known as lactalbumin. It is high in the branch chain amino acids.

Q: You said earlier that athletes or injured patients may need more protein. How much do they need?

A: The RDA for protein in an adult is approximately 0.8 gm/kg body weight. Based on the RDA, endurance athletes in heavy training may require 1.2 to 1.3 gm of protein per kilogram of body weight. Athletes involved in heavy weightlifting programs may require 1.7 to two gm per kilogram of body weight. Injured patients should be consuming over 1 gm of protein per kilogram of body weight. This can increase, depending on the nature and extent of their injury. The key point to remember is when a patient is injured, that is not the time to have inadequate protein intake.

Q: Is a high protein diet hard on the kidneys?

A: Diabetics definitely should stay away from a high protein diet. However, for the nondiabetic patient, there is no conclusive evidence that high intakes of protein over a long period of time will cause kidney damage. This is due to an observation that, in the United States, many people consume amounts of protein way over the RDA and yet our rate of kidney disease is not that high, as opposed to heart disease. Which leads us to the next question:

Q: Can a high protein diet cause heart disease?

A: I do not feel high protein diet is the sole cause of heart disease; however, studies in the Annals of Nutrition and Metabolism and the American Journal of Clinical Nutrition show that when adults with high cholesterol converted from a diet with low fat animal protein to vegetable protein, there were significant cholesterol drops. In both studies, the vegetable protein utilized was soy, which is a complete vegetable protein, but is also high in fat. People are not sure why the vegetable protein has this affect, but some scientists theorize it may be due to vegetable protein's high arginine to lysine ratio as opposed to animal protein, which has a high lysine to arginine ratio.

Q: When you eat vegetable protein, isn't it important to combine certain types?

A: Most vegetable proteins have rate-limiting amino acids, meaning they may not be complete proteins. Although the individual protein species varies, a good rule of thumb is that grains tend to be low in lysine and legumes tend to be low in the sulfur-containing amino acids cystine and methionine. For many years, people thought that if you were on a vegetarian diet you must have your complementary proteins at the same meal. Researchers now believe that you don't need them at the same meal, as long as you have them in the same day.

Q: If a patient is on a high protein diet, are there certain supplements that should also be given?

A: Anyone who eats a lot of protein also has to convert large amounts of ammonia to urea. The trace mineral zinc is important to activate enzymes in this conversion. A high protein diet may increase one's need for calcium and definitely increases the requirements for water.

Q: What about supplementing amino acids?

A: I do not recommend amino acids as a source of protein. They are simply not cost-effective for this purpose. I reserve the use of amino acids for specific conditions.

### *Reference*

1. Leibovitz B: Muscular Development, Vol. 26, No. 9, 1989.

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