

# Training Table

Debra Wein, MS, RD, LDN, NSCA-CPT

## Protein Proportioned Properly... *Finally!*

The effect of exercise on dietary protein requirements has been a controversial topic for years. Despite the debate, many athletes have routinely consumed extremely high protein diets with the hope of increasing size, getting cut, and gaining muscle mass. Indeed, protein performs extremely important functions in the body as part of enzymes, hormones, antibodies (in the immune system), and components of tissue, especially muscle tissue. However, more protein in the diet does not necessarily mean more muscle on the body.

Over the last 30 years, the protein debate has fueled quite a bit of research, and it has now become clear that regular exercise does in fact increase protein needs—good news for athletes who thought this was the case all along. On the other hand, the interpretation of what the increase should be is extremely variable. In fact, what a lot of athletes fail to realize is that the typical American diet contains excess protein, so that most exercising individuals obtain sufficient protein without any extra effort.

### How much protein is enough?

Although muscle is indeed made of protein, eating excess amounts will not cause muscle hypertrophy or growth. Muscle stimulation and contraction, through strength training, causes muscle hypertrophy and eating extra carbohydrate—stored as glycogen—fuels intense strength training workouts. Without adequate glycogen, you cannot contract optimally and hypertrophy will be limited, whereas, consuming carbohydrates supports both glycogen and protein synthesis through the insulin response (insulin, an anabolic hormone, is produced in response to carbohydrate intake).

Scientific studies suggest that the protein intake for those who engage in regular, intense strength building exercise should be 0.4 – 0.8 grams per pound of body weight (212 – 225% of the current RDA, or Recommended Dietary Allowances). To determine your protein needs, multiply your body weight by the conversion factor found in Table 1, this will give you the grams of protein you need per day.

### So what should you eat?

When eating, read food labels and use Table 2 to track the number of grams of protein you eat each day. Do this for a few days to figure out your typical protein intake and make adjustments in your diet accordingly.

### Bottom line

The best plan to build muscle, increase strength, and bolster performance is to work your muscles hard and fuel them optimally with a diet adequate in protein, high in carbohydrate, and low in fat.

**Table 1 - Protein recommendation based on activity**

Activity Level	Conversion Factor
Sedentary individuals/ Sporadic exercisers	0.4 grams per lb. body weight
Active exercisers	0.5 – 0.6 grams per lb. body weight
Very active exercisers	0.7 – 0.8 grams per lb. body weight

**Table 2 - Protein content of food groups**

<b>Food Group</b>	<b>Protein (g)</b>	<b>Calories</b>
<b>Dairy – nonfat and low fat</b> 1 cup milk; 1/3 cup dry milk; 1/2 cup evaporated milk; 3/4 cup yogurt	8	90 – 120
<b>Meat and Meat substitutes</b> 1 oz. lean meat, poultry, fish, shellfish; 2 egg whites; 1/2 cup cooked beans; 1 oz. low fat cheese	7	35 – 55
<b>Starch</b> 1 slice bread; 1/2 cup pasta; 1/3 cup rice; 1 small potato	3	80
<b>Vegetables</b> 1/2 cup cooked or 1 cup raw	2	25
<b>Fruit</b> 1/2 cup juice or 1 piece raw	0	60

## Suggested Reading

Lemon PWR. (1998). Effects of exercise on dietary protein requirements. *International Journal of Sport Nutrition*, 8, 426–447.

Manore M et al. (2000). Nutrition and athletic performance, Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine. *Journal of the American Dietetic Association*, 100:1543 – 1556.

Rosenbloom C. (2000). *Sports Nutrition, A Guide for the Professional Working with Active People, Third Edition*. The American Dietetic Association: Chicago.

## About the Author

*Debra Wein, MS, RD, LDN, NSCA-CPT, is an adjunct faculty member at the University of Massachusetts, Simmons College and The Boston Conservatory, and chairs the Women's Subcommittee of the Massachusetts' Governor's Committee on Physical Fitness and Sports. She is the President of The Sensible Nutrition Connection, Inc.*