Protein Needs

Protein needs for athletes vary depending upon their body weight and the frequency, intensity, duration and types of their activities. Adequate daily protein intake is essential for muscle and tissue repair, muscle growth, and regulation of metabolism. Most athletes eat enough protein and some even eat more than they need, believing it will help increase their muscle mass. Protein intake in excess of daily need is either used for energy when carbohydrate and calorie intake is low or the extra protein is stored as fat. A gram of protein contains 4 calories.

Estimating Protein Needs

Use the guidelines below to see how much protein you need daily. Record your protein needs in the WORKSPACE provided on page 2.

*4-5 times/week for 30 min at <55% VO_2 max; **4-5 times/week for 40-60 minutes

Activity Level	Protein Needs grams/pound body weight
Sedentary	0.36
Recreational endurance*	0.36
Recreational resistance (strength training)	0.36
Moderate intensity endurance**	0.54
Elite female endurance athletes	0.53 – 0.63
Elite male endurance athletes	0.72
Resistance (strength) training athletes (consistent training, mid-season, for maintenance of muscle mass)	0.53 – 0.63
Cross-training or intermittent, high-intensity training athletes (basketball, soccer, hockey)	0.63 - 0.77
Resistance (strength) trained athletes (early training and/or promotion of muscle mass growth)	0.68 – 0.81

Adapted from: Tarnapolsky 1999, Lemon 2000.

This is an example of how a female endurance athlete who weighs 120 pounds can meet her protein needs or 64 – 76 grams per day using the Sports Food Swap.

Step 1: Calculate Protein Needs

EXAMPLE

Activity Level	Protein Needs (grams)	X	Body weight (pound)	=	Recommended Daily Protein Needs (grams)
Elite Female Endurance Athlete	0.53 - 0.63	**X**	120	**=**	**64 - 76**

WORKSPACE – Calculate your protein needs

Fill in your activity level, the corresponding protein requirement for this activity level, and your own weight (in pounds) in the blank and calculate your protein needs.

Your Activity Level	Protein Needs (grams)	X	Your Body weight (pounds)	=	Recommended Daily Protein Needs (grams)
		X		**=**	

Step 2 - Planning Your Daily Protein Intake

The Sports Food Swap© is a guide for selecting foods from all six Food Types in the Athletes Food Guide Pyramid to supply the recommended intake levels of carbohydrate, **protein**, and fat.

In the Sports Food Swap© plan, a serving size is listed for each Food Type category. This plan is called a Food Swap because each Food Type in the plan includes foods that contain similar amounts of calories, carbohydrate, fat, and **protein** per listed serving size. Because of the similar nutrient content for each listed serving size of food, one food can be traded or **swapped** for another food within a food type category without changing the nutrient content of the diet.

The calorie, carbohydrate, fat, and **protein**, content of the listed serving size for each Food Type is listed in the Sports Food Swap©. Page 3 has an example of how an elite female endurance athlete who weighs 120 pounds can meet her protein needs, 64-76 grams per day, by using the Sports Food Swap©. Use the Sports Food Swap© to find out how many servings from each Food Type to eat to meet your recommended grams of protein intake.

Example: Female endurance athlete – choices to meet protein needs 64 – 76 g/day

Food Type	Serving Size	Grams of protein per serving	X	Number of Servings Per Day	=	Grams of Protein
Grains & Starchy Vegetables	1 oz or ½ cup ½ cup (cooked)	3	x	8	=	24
Vegetables	½ cup (cooked), 1 cup raw	2	x	3	=	6
Fruits	1 fruit or ½ cup	0	x	4	=	0
Milk Products	1 cup	8	x	2	=	16
Meats & Meat Alternatives	1 oz	7	x	4	=	28
Fats & Sweets						
Fats	1 tsp	0	x	3	=	0
Nuts & Seeds	1 Tbsp	1	x	1	=	1
Sugars	1 Tbsp	0	x	2	=	0
				Total	**=**	**75**

Use the *WORKSPACE* to choose how many servings from each of the Food Types you can eat to meet your daily protein requirements.

Vegetarians, or those on special diets, may not include all the food types.

Your WORKSPACE – Plan your food choices to meet your protein needs

Food Type	Serving Size	Grams of protein per serving	X	Number of Servings Per Day	=	Grams of Protein
Grains & Starchy Vegetables	1 oz or ½ cup ½ up (cooked)	3	x		=	
Vegetables	½ cup (cooked), 1 cup raw	2	x		=	
Fruits	1 fruit or ½ cup	0	x		=	
Milk Products	1 cup	8	x		=	
Meats & Meat Alternatives	1 oz	7	x		=	
Fats & Sweets						
Fats	1 tsp	0	x		=	
Nuts & Seeds	1 Tbsp	1	x		=	
Sugars	1 Tbsp	0	x		=	
				Total	=	