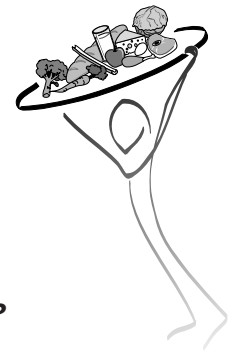


TRAINING DIET

Protein – Grow Food



Question: (Answer at the bottom of page 2)

Protein is made up of many units called amino acids.

- TRUE FALSE

Protein is a basic substance of all body cells. It is important in the structure of many tissues such as muscle, connective tissue, skin and hair. It is needed for growth and repair of body tissues. It is also a necessary component of hormones, enzymes, the immune system and fluid balance.

There are about 20 common amino acids. Nine of these are called essential amino acids because they cannot be made in the body – they must be obtained from food.

Question: (Answer at the bottom of page 2)

Protein is only found in food from animal sources.

- TRUE FALSE

Each protein in food has a different pattern of amino acids. Animal proteins have all the essential amino acids in a combination that is most useable by your body; thus they are called “complete proteins”. Plant proteins have one or more essential amino acids present in a limited amount and thus are called “incomplete proteins”. If animal proteins are not part of the diet, a variety of foods containing plant proteins (refer to “**Vegetarian Ways of Eating: Finding the Nutrients**”) can provide all the essential amino acids in sufficient amounts. Protein sources include meat (such as beef, pork, poultry, and fish), eggs, milk products, legumes (soy products, dried peas, beans, and lentils), grain products, seeds, and nuts. A registered dietitian with expertise in sport can teach you how to select food to be sure you are obtaining the nutrients you need.

Question: (Answer at the bottom of page 2)

Extra protein in the diet helps increase the amount of muscle you have.

- TRUE FALSE

Protein is no more essential than other nutrients. Protein is a poor source of energy and too much does not help performance. A balanced diet supplies enough protein for any athlete, providing adequate energy is consumed.

If you don't eat enough carbohydrate for energy, your body uses the glycogen stored in your liver to maintain your blood sugar level. When the liver glycogen is used, your liver uses protein and other by-products to make the necessary glucose. The long-term result is a loss of your muscle mass and poorer performance.

How much protein do you need?

The general recommendation for protein intake for Canadians is 0.8–1.0 grams (g) of protein per kilogram (kg) body weight. Athletes need a little more protein. Athletes who participate in endurance type sports need 1.2–1.4 g of protein per kg body weight. Athletes whose sports require strength need 1.6–1.7 g per kg of body weight. This is close to the maximum amount of protein anyone can use to build and repair tissues.

During times of growth, protein needs are higher. A child athlete must consume adequate energy and protein for both growth and training. While these amounts will vary with the sport and level of competition, some growing teen aged athletes need 1.8–2.0 g protein per kg of body weight.

Calculating Protein Needs

You need to know your weight in kilograms (kg) for these calculations. To convert from pounds to kilograms, divide your weight in pounds by 2.2. For example, a person who weighs 150 pounds (divided by 2.2) weighs 68 kilograms.

If you participate in an endurance sport, multiply your weight in kilograms by 1.2 and then by 1.4 to find the amount of protein you need each day.

For example, $68 \text{ kg} \times 1.2 = 81.6$ or 82 grams

$68 \text{ kg} \times 1.4 = 95.2$ or 96 grams

Thus, a 150 pound (68 kg) endurance athlete needs 82–96 grams of protein daily.

If you participate in a strength sport, multiply your weight in kilograms by 1.6 and then by 1.7 to find the amount of protein you need each day.

For example, $68 \text{ k} \times 1.6 = 108.8$ or 109 grams

$68 \text{ k} \times 1.7 = 115.6$ or 116 grams

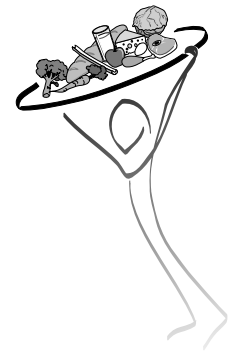
A 150 pound (68 kg) strength athlete needs 109–116 grams of protein daily.

SNAC Sport Nutrition Advisory Committee
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TRAINING DIET

Protein – Grow Food, page 2



How does your protein intake look?

Question: (Answer at the bottom of the page)

Most athletes eat enough protein.

TRUE FALSE

It is possible to calculate the grams of protein you eat each day. Here is a simple menu listing the protein content for each food.

	grams protein
Breakfast:	
250 mL orange juice	2
625 mL (60 g) Cheerios™	7.5
250 mL milk (2 % M.F.)	8
2 slices whole grain toast	6
30 mL peanut butter	8
Snack:	
Banana	1
Water to drink	
Lunch:	
2 slices whole grain bread	6
2 eggs for sandwich filling	12
250 mL lettuce for salad	1
1 tomato	1
175 g fruit yogurt	7
Water to drink	
Snack:	
Granola bar (28 g)	2
60 mL dried apricots	1
Water to drink	
Dinner:	
250 mL cooked pasta	7
125 mL tomato sauce	2
½ chicken breast (100 g)	32
1 medium raw carrot	1
250 mL milk (1%)	8
Total	112.5 grams protein

Are you surprised to see that a modest amount of food supplies enough protein for the 150 pound strength athlete?

A balanced diet with enough energy to meet training needs can easily supply adequate protein. On the other hand, athletes who attempt to maintain a very low body weight may be eating less food than their body needs. They may have both inadequate energy and insufficient protein. The “Protein Pointer” can help you choose foods to meet your needs.

Are you trying to gain lean muscle mass? Check the nutritional tip sheet “Gaining Weight for Athletes” for food suggestions that provide the necessary energy, protein, and other nutrients.

If you are eating more than three times your requirement for protein, check with a registered dietitian with expertise in sport for a plan to balance your eating pattern. You can contact the dietitian at your Canadian Sport Centre or someone listed under the Sport Nutrition Registry on the CAC website. If there is no dietitian with expertise in sport listed in your area, Dietitians of Canada may list a dietitian near where you live.

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ANSWERS

1. TRUE – Each protein is made up of its own unique combination of amino acids.

2. FALSE – Protein is found in food from both plant and animal sources.

3. FALSE – The way to increase your muscle is with resistance training exercise and adequate energy intake. Your body can use only a small amount of protein every day, although athletes will use more protein than inactive people. If you eat more protein than your body needs, the extra is used as energy or converted to fat.

4. TRUE – Almost all food contains some protein. Most Canadians eat about twice as much protein as they need.

