

PROTEIN NEEDS FOR ENDURANCE ATHLETES

Most triathletes are well aware that the sport of triathlon involves much more than swimming, biking, and running. Proper nutrition also plays a key role in allowing our bodies to train, to compete, and to recover as efficiently as possible. Though carbohydrate is the primary fuel for endurance athletes, the correct use of protein in both your daily nutritional intake and following your training sessions may result in both improved performance during training and your ability to recover quickly for your next workout.

If you are currently increasing the intensity or duration of your training in preparation for the upcoming race season, protein intake may need to be increased.

Why do you need it?

- 1) Protein supports your physical needs by building and repairing muscles broken down during endurance workouts and weight training sessions.
- 2) Protein is an essential part of the immune system. Endurance athletes are constantly challenging the health of their immune systems as they increase their training workload.
- 3) Protein is present everywhere in the body including blood, bones, muscle and connective tissue. When protein is insufficient or restricted, the resulting intakes of nutrients such as calcium, iron and zinc may be inadequate. Athletes must get enough of these elements for cell repair and rejuvenation on a daily basis.

How to calculate your needs?

Extensive research shows adult competitive athlete needs anywhere from 1.2 – 1.8 grams of protein per kg of body weight over the course of a day. An athlete who is restricting calories (trying to lose weight) may need anywhere from 1.4 – 2.0 grams of protein per kg of body weight.

To keep it simple:

- 1) Take your weight in pounds.
- 2) Divide that number by 2.2 to determine your weight in kg.
- 3) Multiply that number by 1.2-1.8 grams to determine your daily protein needs.

An athlete example:

A 68 kg runner (150 lbs) who swims, bikes, runs, and lifts weights needs approximately 122 grams of protein per day.

The calculation:

150 lbs. divided by 2.2 = 68 kg

68 kg multiplied by 1.8 = 122 grams of protein

This equals about 500 calories of pure protein because one gram of protein equals 4 calories.

Are you getting what you need?

An easy way to know if you are getting what you need is to keep track of protein intake by keeping a record of everything eaten in a 24 hour period and then using food label nutrition information to keep a tally of total protein consumed. A cottage cheese label will tell you that ½ cup of cottage cheese has 14 grams of protein and there are 4 servings per tub. If you eat half of the tub, you get about 28 grams of protein. Another helpful tool is one of the many online free nutrient analysis websites such as www.nutrawatch.com.

Example of Protein in Foods:

Food	Serving Size	Grams of Protein
Beef ground lean	3 oz	21
Beef Top Sirloin	3 oz	25
Chicken Breast	3 oz	26.4
Pork Loin	3 oz	21
Salmon/Sockeye	3 oz	23.2
Flounder	3 oz	20.5
Tuna	3 oz	21.7
Egg, whole	1 large	6
Yogurt, low fat	1 cup	12.8
Cottage Cheese	½ cup	14
Beans/Soy	1 cup	29
Beans/pinto	1 cup	12
Spaghetti, cooked	1 cup	7
Cheese, cheddar	1 oz	7
Milk, 1%	1 cup	8
Ice cream, vanilla	½ cup	2
Almonds	12 nuts	3
Peanut butter	1 tablespoon	4.5
Hummus	1 tablespoon	1
Bread/whole wheat	1 slice	3
Baked beans	1 cup	7
Refried beans	½ cup	7

What is the role of protein in recovery?

Studies show that protein combined with carbohydrate consumed immediately after a training session helps enhance glycogen storage in the muscle tissue. However, there still remain unanswered questions within the scientific community as to which ratio of carbohydrate to protein intake is most effective in this process. Based on experience and experimentation, most endurance athletes find a ratio of 3:1 carbohydrate to protein works best; however, it is important to remember that your body is unique and a little more or a little less might work sufficiently for each individual.

To aid efficient recovery after training sessions, most athletes need to consume .5 grams of carbohydrate per pound of body weight every two hours for six to eight hours after a workout. Therefore, if you are consuming 250 to 300 calories of carbohydrate right after exercise, you will need to add 83 to 100 calories of solid protein for efficient recovery.

The calculation for a 150 pound athlete:

- 1) .5 grams of carbohydrate x 150 lbs. = 75 grams of carbohydrate needed for recovery
- 2) Multiply 75 grams x 4 (the number of calories in a gram of carbohydrate) = 300 calories of carbohydrate
- 3) If the recovery ratio of carbohydrate/protein is 3:1, then you need 100 calories of protein per 300 calories of carbohydrate

As many endurance athletes train multiple times a day, one option is to take in your recovery nutrition in the form of liquid mixes. Be sure to check the carbohydrate to protein ratio if you choose to use a pre-made mix. If you create your own recovery drink, experiment with different types of carbohydrate and protein to determine which combination works best for you.

If you prefer to refuel with solid food, here are some good options:

Medium bagel with cottage cheese or peanut butter
Yogurt smoothie with strawberries, blueberries, and a tsp protein powder
Medium sweet potato with low fat cheese or turkey bacon
Fried egg on rye toast
Small turkey sandwich on whole wheat bread
Bowl of cereal with skim milk and a few nuts

In preparation for your race season, you will spend countless hours training. By taking advantage of the nutrition information that is available, you can ensure that you are providing your body with well balanced nutrition so that you will stay healthy during your season as well as properly refuel after each training to facilitate your recovery.

When it comes to protein intake...

Know your Needs – Figure out how much protein you need on a daily basis as well as for your recovery fuel.

Be Prepared – Have the right foods and recovery mixes available to you when and where you need them, especially after each training session.

Practice for Recovery – Practice your nutrition just as diligently as you train for your sport. By creating and practicing strategic nutritional habits during the season, you will ensure that you get the most out of each training session and be better prepared for your next workout.

Good luck in the upcoming season!

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