

## **Nutrition for Endurance Athletes**

Event nutrition is always a key factor for many endurance athletes, but do you pay attention to general nutrition as well?

The breakdown of muscles is inevitable, but what do you do to facilitate recovery and repair? What about taking special supplements? Should we eat mainly carbohydrates? Or avoid them? What about protein? And how many calories? are you getting enough?

Unfortunately, as with all things in nutrition, there is not one true method for every person, just general guidelines and a lot of trial and error!

As an endurance athlete you need to fuel your body to meet performance demands. Remember, for every mile you run, you expend roughly 100 calories. On your training days, you want to make sure you supplement your diet with foods rich in carbohydrates and protein (and low in fat).

For example, after a hard training run, you need to replace your fuel sources with some protein and carbohydrates (i.e. a protein shake). Research has shown that a ratio of 4 grams of carbohydrate to one gram of protein eaten within the first half-hour of recovery provides optimal means of refueling.

The carbohydrate will replenish your muscle and liver glycogen whereas the protein will be used to rebuild and repair the muscle damage you incurred.

During the day, you should supplement your daily food intake with fruit, veggies, and high quality protein (organic yogurt/ cottage cheese, eggs, lean meat, poultry, fish, legumes) this will help with hydration and supply your system with the fuel it needs.

For example, instead of coffee and cookies, have some fruit with yogurt and water. If you are hard pressed to get adequate calories, you may want to consider sipping on an electrolyte beverage or a good quality protein powder shaken into almond or rice milk.

Another key factor athletes often neglect is staying hydrated through the day. It is well known that humans need minimum of 2.5 L of water at day. But an athlete needs between 5 – 6L! Just a small amount of dehydration can affect your performance greatly! Make it a point to sip water throughout the day.

Decaffeinated/herbal teas are great too, if you want something other than water. Alternative you can fill a large water bottle with water and add chopped lemons, strawberries, cucumbers or other fruit for a fruit-infused water drink. If you find you wake in the night with thirst, keep a water bottle by your bed and sip in the night

Here's an example of a daily meal intake:

### **Breakfast:**

- 1-½ cups homemade museli, or oatmeal
- ½ cup almond milk with 1 serving protein powder
- 1 banana
- ½ cup fruit juice

water

**Midmorning:**

Fruit bar or raw food bar (commercial or homemade)

Herbal or green tea

Water

**Lunch:**

Protein and veggie salad or wrap

Yogurt

Fruit or veggies (i.e baby carrots, snow peas)

Water or herbal tea

**Midafternoon:**

Organic cheese and rice crackers or organic cottage cheese with fruit

Water or tea

**Dinner:**

Rice pasta in tomato based sauce with  $\frac{3}{4}$  cup mixed veggies

$\frac{1}{2}$  chopped cooked chicken breast or cook ground chicken or ground turkey into the sauce

Mixed green salad with olive oil and balsamic vinegar

Water or other noncaffeinated beverage

**Night:** (if needed)

Small ( $\frac{1}{4}$  cup) bowl of oatmeal or homemade high-fiber cookie

Water or herbal tea

Most endurance athletes put an emphasis on Carbohydrates. This is a very important macronutrient for endurance but with all the training we do, we also need protein for muscle recovery and repair. We also need fat to keep us going (essential fat is 12% in a woman, and around 5% in a guy—meaning this is the amount of body fat required for normal cellular function).

When we tend to leave fat out of our diets, primarily women are guilty of this, we lose out on essential fatty acids necessary for immune and nerve cell function! It also protects your inner organs and allows estrogen to function properly (regular menstrual cycles are very important---it means your body's hormones are in balance) and in the long run, this will protect your bones. Keeping your fat intake to 30-50 grams/day with saturated fat >10% of daily fat intake will keep your body functioning at its best.

General Dietary/Daily Guidelines WITHOUT training.

1. At least **3** servings of whole grain products (rice, oatmeal, buckwheat, millet, quinoa, whole grain wrap, muesli cereal)
2. At least **2** servings of fruits and **3** servings of vegetables
3. At least **3** servings of fats (avocado, flax oil, raw walnuts/ almonds, nut butter, tahini)
4. At least **3** servings of protein (lean meat, chicken, legumes, organic yogurt/ cottage cheese)
5. At least **8** eight ounce servings of noncaffeinated fluid

Make sure you are eating at regular intervals:  
(i.e. something every 3 hours.) This will keep your blood sugars from fluctuating and help stave off fatigue as well as preserving that well needed muscle glycogen!

### Carbohydrates

Did you know that:

- a. When muscle glycogen stores are used up, exhaustion occurs?
- b. Muscle glycogen depletion occurs after 2-3 hours of continuous LOW INTENSITY training? But occurs within 15-30 mins of HIGH INTENSITY training?!
- c. When liver glycogen is depleted, you cannot keep blood glucose levels normal-you hit the wall and cannot continue!
- d. With low blood glucose levels, you're body will have to rely on fat for fuel, however this is a very SLOW process, bringing you down to a speed of 2km/hr..... Signs and symptoms of low blood glucose: lightheadedness, feelings of uncoordination, weak, unable to concentrate, blurry vision, and feeling "spacey".

How many Carbohydrates do I need in a day?

The general rules of thumb:

- For **moderate to high intensity** training lasting **60-120 minutes**, you need **7-8grams of CHO/kg./d**
- For endurance training involving **2-5 hours** of intense training per day (distance running, cycling, swimming) you need **8-10 grams of CHO/kg/d.**
- For extreme training involving **>5 hours** of intense training per day (i.e. Ironman or multisport events) you need **10grams of CHO/kg/d.**

My activity per day is: \_\_\_\_\_

My weight (in kg) is: \_\_\_\_\_

**My CHO need is:  $(\text{kg}) \times (\text{gms of CHO for activity level}) =$  \_\_\_\_\_**

### Protein

We have all heard the buzz of high protein/low carbohydrate diets in the fitness realm. But, does it hold for endurance athletes? In some ways, yes. Protein is VITAL for muscle recovery and repair and in activities lasting 2 hrs or more amino acids (the building blocks of protein) can lend from 5-10% of the fuel necessary to keep going.

The other aspect of protein is that you need protein to facilitate fat loss. Although the PRIMARY and MOST IMPORANT fuel for endurance events is CARBOHYDRATES, if you consistently eat carbohydrates, you run the risk of not allowing your body to optimally repair. The body will use carbohydrates for refueling muscle and liver glycogen as it is supposed to, however, without adequate Protein, the carbs you ingest will go to assist in the repairing of muscles. This will not allow for optimal refueling of the muscle and liver glycogen. As for facilitating fat loss—you need protein to keep the muscles repairing and rebuilding, and allow Carbohydrates to refuel the muscles and liver—thus allowing fat stores to stay empty. There is a half an hour window post event/training in which you need to get protein back into your system for optimal repair and metabolism. (The window for CARBOHYDRATE refueling is 2 hours post event/training - though eating the immediate post-race offerings of bananas and oranges is the best idea, as these directly go to replenishing your muscle glycogen and they also provide you with essential electrolytes and fluids. So don't wait for 2 hours just because you "can").

Why do you, as an endurance athlete need protein? For muscle growth, repair, and strength adaptations, the key for successes! And immune system function. Endurance events can deplete the immune system and protein provides the building blocks necessary for antibody production.

Did you know that:

- a. Hydration is key with endurance activity especially in view of the fact that PRO is a dehydrator?
- b. An endurance athlete needs on the upward of 2 grams of PRO/kg a day for optimal muscle repair, growth, recovery and fat mobilization.
- c. Whey isolate and vegan (rice, hemp, pea) protein powders are two very simple means of increasing your protein intake without increasing your fat intake.

How much Protein do I need in a day?

The general rules of thumb:

- For **strength/power phases** of training you need **1.7-2.0 grams of PRO/kg/d**
- For endurance phases of training you need **1.2-1.4 grams of PRO/kg/d.**
- For optimal recovery, try to ingest **15 grams of PRO** within the first half an hour post-event/training session.

My activity per day is: \_\_\_\_\_

My weight (in kg) is: \_\_\_\_\_

**My PRO need is: (kg) x (gms of PRO for activity level) = \_\_\_\_\_**