

## **Perform Better, Recover Faster**

### **A look at post workout nutrition**

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Whether you are training for athletic competition or for a better quality of life, you may have heard about the value of post workout nutrition. Yet it has been my experience that many athletes aren't practicing proper post workout nutrition. As a result, they put themselves at risk of not reaching their full potential. What and when you eat after a workout plays a key role in how quickly you recover. The quicker you recover the more energy you'll have, both for daily life and your workouts.

### **The Glycogen Window**

To get a better understanding of why post workout nutrition is so important let's take a look at what is known as the "glycogen window". The glycogen window is the 30 minutes to two hours immediately following a workout. During this period the body can more easily store sugars as glycogen in the muscle cells, as well as in the liver.

Glycogen is the body's most efficient energy source and is easily depleted with two hours of moderate exercise. It's depleted even more quickly with intense exercise. Therefore, it's important to replenish our supply to ensure maximum energy levels. Studies have shown that glycogen is replenished up to 50% faster in athletes who eat immediately after exercise; as opposed to those who wait two hours or more to eat.

While the glycogen window generally lasts up to two hours, replenishment is at its peak within the first 30 minutes after exercise. Therefore, the sooner the post workout meal is consumed the better.

The body is such an amazingly efficient machine. Immediately after exercise is complete the muscles and liver are, in a sense, preparing should exercise be resumed. After two hours it's as if the body accepts that the workout is done and a lot of fuel is no longer needed. As a result it slows down the process of glycogen storage.

Since appetite is often suppressed immediately after exercise, consuming carbohydrates in liquid form is a great way to quickly replenish glycogen. Sports drinks are an easy and efficient way to replenish as they typically contain a variety of simple sugars as well as electrolytes. A variety of sugars is beneficial due to the fact that fructose effectively replenishes liver glycogen, while sucrose and glucose are better at replacing muscle glycogen.

As you likely know, under normal circumstances it's best to minimize consumption of simple sugars. Simple sugars cause insulin levels to rise and fall, thereby causing energy levels to rise and fall. However, immediately after a workout simple sugars are essential for fast glycogen replenishment. One of the many benefits of exercise is that it trains the body to store more glycogen. Muscle adapts to constant demand for replacing glycogen by allowing sugars to enter the cells more quickly. This is a

result of less insulin being needed for sugar to enter the cells. It is still advisable though that you consume the appropriate amount for your body weight.

### **What is the appropriate amount?**

Ideally your post workout carbohydrate intake should consist of .5 grams per pound of body weight. Using the example of a 160 pound person;  $160\text{lbs} \times .5 \text{ grams} = 80$ . Therefore, for maximum glycogen storage to take place this person should consume 80 grams of carbohydrates (ideally a variety of sugars as previously discussed) within the 2 hour glycogen window.

Protein is also an essential component of post workout nutrition. While carbohydrates replenish energy, protein helps repair muscle breakdown which occurs during exercise. Ideally the post workout meal should include 1 gram of protein for every 4 grams of carbohydrates.

Using the previous example, a 160lb person should have 20 grams of protein along with their 80 grams of carbohydrates. Getting this optimal ratio can take some planning, but the benefits are well worth the effort. To make the process easier there are several excellent sports drinks on the market specifically for recovery which provide this exact ratio.

If your workout routine involves light to moderate intensity activity, and is one hour or less in duration; refueling within the glycogen window takes on less of an importance. However, if you find yourself recovering slowly or are low on energy, you may find these strategies beneficial. You likely won't need the full amount of carbohydrates and protein previously mentioned. Just be sure to have a snack or meal consisting of both carbohydrates and protein within the two hours following your workout.

If you have diabetes, or other insulin related conditions, you should of course consult with your doctor about appropriate nutritional strategies.

### **My Perspective**

Speaking from personal experience, I have found that practicing these strategies have been invaluable to my training and performance. As a Masters endurance athlete (that's a polite way of saying over 40) I can still train hard and perform at a high level. However, I have found that I need a greater amount of recovery time than I did when I was in my 20's, or even my 30's.

Practicing these nutritional strategies has allowed me to bounce back from hard workouts far quicker than I would have otherwise. As a result, I have been able to feel stronger and have more endurance during my training. Thus, allowing me to record times in distances ranging from 5K to marathon which are close to those I ran in my late 20's and early 30's. As a coach I have all of my athletes practice these same strategies, also with great success.

### **Conclusion**

I am still amazed at how many athletes of all skill levels aren't aware of the full role nutrition plays in performance. Even when proper nutritional strategies are practiced prior to and during the workout,

many athletes are not utilizing the glycogen window. As a result they run the risk of not achieving peak performance. There is basically a domino effect. Proper post workout nutrition leads to quicker recovery; which results in more energy for training; which leads to higher quality training; which in turn leads to a better performance on competition day.

Regardless of what you are training for, how you are fueling yourself is just as important as how you train. Giving your body what it needs to recover and the fuel it needs to perform, sets the stage for you to perform at your personal best.