

Lesson 7 - Drink Early and Often.

There are 2 reasons to drink fluids: (1) to stay hydrated, and (2) to provide the body with fuel.

During Workout - Regardless of age or length of workout, all swimmers need fluids during practice to stay hydrated. Easily accomplished with a couple of sips from the water bottle every 15-20 minutes. As swimmers progress, workouts get longer and tougher. It's well established that exercise beyond 90 minutes benefits from a supplemental fuel source. The sports drink can provide it. But we still have hydration to think about. Drinks that are too strong, or "concentrated," can provide the fuel but also inhibit fluid absorption and often lead to cramping.

Years of research tells us that drinks that are 6-8% carbohydrate by weight provide the perfect balance. Enough carbohydrate to provide a fuel source during long exercise, but not so much that will inhibit fluid absorption. A couple of sips every 15-20 minutes keeps the body fueled, helps prevent unnecessary tissue breakdown, and maintains hydration. Today, only Gatorade and Powerade meet the 6-8% criteria. Most other drinks are too strong to be effective *during* workout.

After Workout – Water is an excellent choice to replenish fluids after practice. It's always wise to drink at least one cup. But after a *tough* workout, replenishing fuel stores is equally important. Competitive swimmers need a little over 1 gram of carbohydrate for every kilogram they weigh (lbs/2.2) each hour after workout. And they need it **within the first hour**.

Oftentimes, a sports drink that is easily digested and quickly absorbed, such as Gatorade or Powerade can provide a convenient way to get some of this fuel within the first 20 minutes. Accelerade, a newer drink on the market may also do the trick. Endurox, perhaps, but beware of the high protein drinks, as they often forgo the carbohydrate, and carbohydrate is what you are trying to replenish within that first hour after workout. A little protein won't hurt, in fact a little bit of protein may actually help by supporting tissue repair and re-building processes. But too much protein, especially when it comes *in place of* carbohydrate, may actually be detrimental to the post-workout recovery process.

****Remember...**

1. Carbohydrate is the primary fuel source during tough workouts. Protein is used as a fuel source during exercise only when carbohydrate and fat are not present in sufficient quantities. This can happen during long/tough workouts when the body uses much of its stored carbohydrate, and it must find an additional source. If an additional carbohydrate source (ex. Gatorade, Powerade) is not supplied, the body taps into *stored* protein, aka your muscles. This is why we drink carbohydrate-electrolyte solutions during workout...to **spare muscle protein**. And this is also why it is important to replace carbohydrate stores lost during a workout...so you start the next workout with a full tank of gas!

2. Following exercise, the body is very sensitive to the hormone *insulin*. Insulin is that hormone that rises every time blood sugar rises. In other words, every time a swimmer eats carbohydrate, which causes blood sugar to rise, insulin goes up. Well, it's insulin's job to remove sugar from the bloodstream, and it does so by facilitating its storage as **glycogen**. Glycogen, the storage form for carbohydrate, is what the body taps into for fuel when exercise is very intense. This can happen quite a bit during a tough workout, which is why it's important to see that glycogen is replenished before the next practice.

During the Day – Staying hydrated during the day is just as critical as hydrating during and after workouts. Most swimmers can do this by incorporating a variety of fluids into their daily diet. Water, fruit juice, milk, soups, etc, etc. Water is always an excellent choice, but other drinks,

including sports drinks (defined as 6-8% carbohydrate by weight) are okay too. Just remember that variety is the key to a healthy diet. If you use a sports drink during and after practice, it may be better to drink water and juice during the day to stay hydrated. Juices are often healthier than sports drinks in that their sugars are natural. Always keep in mind that juices and sports drinks contribute to total caloric intake.

For the purpose of this article, a sports drink is defined as a 6-8% carbohydrate-electrolyte solution. Do NOT include “energy drinks,” such as Red Bull, 180o, Sobe, etc. These dietary supplements fall into the Yellow Light category of the [Dietary Supplements Health & Contamination Risk Chart](#). (pdf file...requires AdobeAcrobat)
