

Cramping - What a Pain! (But one that can be avoided)

by Steve Born, Fueling Expert – Hammer Nutrition - May 4, 2011

Science has a number of theories as to why muscle cramps occur; however, no definitive answers have been given. That's a real drag because, of the potential performance-inhibiting issues involved in swimming, arguably nothing can stop you in your tracks quicker than a full-fledged muscle cramp.

Cramping, of course, can affect all athletes in all sports but I'm convinced that swimmers may have an even greater potential for this unpleasant malady to occur. Why? Because like a handful of other athletes (Nordic skiers, triathletes), swimmers tend to use a much wider range of muscles than other athletes (such as cyclists, for example), thus putting yourself in a position where cramping is a very realistic possibility.

Potential Causes

Dr. Bill Misner writes: "The general origin of muscle cramps as defined by sport scientists in human performance laboratories is not well investigated and is therefore not well understood.

Clinically, Exercise-Associated-Muscle-Cramps, or EAMCs, have several theoretical causes:

- Inherited abnormalities of substrate metabolism (metabolic theory)
- Abnormalities of fluid balance (dehydration theory)
- Abnormalities of serum electrolyte concentrations (electrolyte theory)
- Extreme environmental conditions from heat or cold (environmental theory)

Or, they simply (and without plausible explanation) 'just happened.'"

Personal Observations and Solutions

In my experience, both as an athlete and in working with thousands of athletes, I have noticed that of all the possibilities as to why cramping can occur, three main culprits stand out:

Too much, too strenuous, too soon

Simply put, if the muscles are not ready to take on the workload being asked of them, cramping is oftentimes one of the by-products.

SOLUTION: Gradually increase the duration and intensity of your workouts intelligently. If you overload the muscles via too much duration and/or intensity, not only can cramping occur, so too can injuries. Build up your workload and intensity gradually and you'll minimize or eliminate the potential for cramping.

Improper fluid intake

If you don't drink enough water/fluid throughout your workout and throughout the day you will find yourself in a state of dehydration, with one of the unpleasant side effects being cramping. Conversely, if you over-hydrate you will most likely suffer the same fate due to overly diluting your blood level of electrolytes (aka dilutional hyponatremia).

Cramping - What a Pain! (But one that can be avoided)

by Steve Born, Fueling Expert – Hammer Nutrition - May 4, 2011

SOLUTION: During your swim workouts we suggest a fluid intake of 20-25 ounces/hour, plus or minus 3-4 ounces based on your body weight. Throughout the day, in addition to what you consume during the training session, we suggest a fluid intake that is equivalent to 0.5 to 0.6 of your body weight in pounds. For example, a 160-lb swimmer should aim to consume 80-96 ounces of fluids daily, in addition to what he/she is consuming during the workout.

Following this equation is more precise and individualized than the generic “drink 8 glasses of water daily” recommendation. It’s the best way to maintain optimal hydration status but without running the risk of dilutional hyponatremia. One caveat: If you have not been consuming this much fluid consistently, don’t start “cold turkey” but rather increase gradually, similar to your training.

Insufficient or improper electrolyte intake

Swimmers who don’t bother with electrolyte replenishment or who think that salt tablets or salty foods resolve the problem will almost always suffer from cramping. Electrolytes are analogous to the motor oil in your car – they don’t make the engine run, but they’re absolutely necessary to keep everything running smoothly. Proper functioning of the digestive, nervous, cardiac, and muscular systems depends on adequate electrolyte levels. No one wants to cramp, of course, but remember, cramping is a place far down the road of electrolyte depletion. Cramping is your body’s painful way of saying “Hey! I’m on empty! Re-supply me now or I’m going to stop!” It’s like the oil light on the dash of your motor vehicle; you never want it to get that low.

Additionally, salt tablets/salty foods are an unacceptable choice for electrolyte replenishment for two reasons:

1. They provide only two of the electrolytes your body requires - sodium and chloride.
2. They can oversupply sodium, thereby overwhelming the body’s complex mechanism for regulating sodium.

Dr. Bill Misner writes, “When a balance of electrolytes of cations (positively charged ions) to anions (negatively charged ions) are managed in the energy producing cell—assuming the cell has adequate fuel and fluid—such a cell will produce energy at a higher rate than one overdosed by a single cation mixed with an irrational list of anions.” In other words, electrolytes perform numerous functions synergistically, which is why it’s important to use a blend of electrolytes versus just one.

SOLUTION: Replenishment of electrolytes—prior to, during (if possible), and after your training session are as important a part of your fueling as anything you’re drinking (to maintain hydration) or eating (to maintain energy production). Make sure you don’t neglect this all-important component of athletic fueling!

Summary

Making sure your training is appropriate for your fitness level is vital to help stave off cramping. So too is consuming proper amounts of fluid and electrolytes, both during your workouts and throughout the day.