

October 19, 2013

## **PLAGUED BY MUSCLE CRAMPS?**

**BY JILL CASTLE, MS, RDN**

Josh was a devoted swimmer and never missed a practice, morning or night. But he was having problems with muscle cramps. His calf muscle would tighten up during laps, and it was painful. Sometimes it was his feet or a hamstring, or a side stitch in his abdomen.



Like Josh, up to 95% of the general population are affected by exercise-associated muscle cramps (EAMC). When muscles are in the shortened, contracted state, cramps are more likely to occur. Muscle cramping in humans occur more frequently after exercise or competition.

Traditionally, most people think muscle cramps are caused by sweating too much, causing dehydration and loss of important electrolytes like sodium and potassium. Defining “sweating too much” in the swimmer can be tricky, as many swimmers don’t feel sweat in the water. The common advice to prevent cramps has been to load up on potassium-rich foods such as banana or potato, or guzzle large amounts of sports drinks.

But research has been slim in proving dehydration and electrolyte abnormalities are the root cause of muscle cramps. This is partly due to the difficulties in re-enacting similar exercise conditions causing muscle cramping in the lab setting, and because they tend to be **spontaneous and unpredictable**. Researcher Kevin C. Miller has found that cramps in mildly dehydrated athletes who were minimally fatigued “were not likely caused by dehydration.”

Neuromuscular fatigue (muscle exhaustion), which stems from overuse and inadequate rest, is another theory for muscle cramps. Muscle exhaustion is on a continuum, so each athlete has his own point at which muscle exhaustion occurs. Researchers believe the muscle exhaustion theory is the reason some athletes cramp up and others don’t. When a muscle is extremely tired, mechanisms within the muscle start to misfire. Small nerves that should keep the muscle from over-contracting malfunction, causing the muscle to bunch up rather than relax.

What are the best solutions for preventing muscle cramps?

### **Adequate Fluids**

Make sure you get enough fluids throughout the day; before practice, during and after it’s over.

### **Foods rich in potassium and sodium**

If you don’t eat a diet full of fruits, vegetables and dairy products (or non-dairy substitutes), you may need to revamp your diet. Foods with high potassium content are banana, potato, tomato, white beans, sweet potato, chocolate milk and OJ.

Nearly all foods have sodium, but good sources are anything salty like pretzels or crackers (but watch the chips!). Just beware that immediate relief is unlikely to occur—it takes time to digest food!

***Coach Moon's Recommendation: 12 oz. low fat chocolate milk within 30 minutes after training for improved muscle recovery... for more info on the benefits of Chocolate Milk for athletes go to <http://gotchocolatemilk.com/science>***

### **Pickle juice**

Kevin C. Miller has studied the effects of pickle juice on athletes. He suspects the vinegar in pickle juice, not sodium, activates the nerve receptors in muscle tissue and disrupts the reflex commotion in the muscles. More research is needed to prove this an effective course of action, but those who have had success with it, swear by it.

### **Training adjustments**

Out-of-shape swimmers who dive into intense exercise may struggle with muscle cramps. Build up your mileage slowly, adding strength training focused on muscles that have cramped in the past.

### **Stretching**

Stretching is the most common advice and most effective for relieving muscle cramping, but this might not be effective for heat-related cramping. Develop a stretching routine as part of your workout to minimize cramps.

### **Sources:**

Miller KC et al. Exercise-associated muscle cramps. Causes, treatment and prevention. Sports Health. 2010; 2(4): 279-283.

<http://www.momsteam.com/muscle-cramps/exercise-associated-muscle-cramps-debunking-five-myths>

Jill Castle, MS, RDN is a childhood nutrition expert and co-author of Fearless Feeding: How to Raise Healthy Eaters from High Chair to High School. She is the creator of Just The Right Byte, a childhood nutrition blog. She lives with her husband and four children in New Canaan, CT. Questions? Contact her at [Jill@JillCastle.com](mailto:Jill@JillCastle.com).