



Family Chiropractic
and Athlete Care

Exercise Associated Muscle Cramps

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Tips & Tricks to Relieving Muscle Cramps

Background:

Muscle cramping associated with exercise or competition has been a problem for athletes for millennia. The specific cramping that happens during exercise is referred to as Exercise Associated Muscle Cramps (EAMC). What is a cramp? A muscle cramp is a sudden, involuntary, painful contraction of a muscle; often accompanied by a palpable knotting of the muscle. Cramping occurs in certain muscles such as the calves, hamstrings and quadriceps. These are all muscles that cross 2 joints. There have been many theories to why muscle cramps occur during exercise. Some common ones include: tight or inflexible muscles, poor physical condition, inadequate diet, physical overexertion, hot and humid conditions, heavy sweating, and dehydration. However, most scientists now agree *the primary cause* of EAMC is altered neuromuscular function (i.e. a physiological process involving both the nerves and muscle) as a result of fatigue in the exercised muscle. Basically the body's normal ability to 'turn off' a contraction malfunctions, causing it to remain 'turned on' causing discomfort felt by the athlete. This information makes it hard for individuals to actively prevent EAMC however there are some things that can be done to reduce the risk.

Tips to Prevent Muscle Cramps

1. Conditioning

- Cramps are less common in athletes who are well trained and appropriately conditioned for the event they are competing in.
- Athletes should focus on endurance and muscle imbalances.
- Training should decrease in frequency and intensity leading up to competition to reduce fatigued muscles.
- Warm up prior to the start of any activities

2. Proper Hydration

- People who are more susceptible to heat illness should drink more water as their muscles are more likely to fatigue quicker.
- To stay well-hydrated for exercise, the American College of Sports Medicine recommends that you:
 - Drink roughly **2 to 3 cups** (473 to 710 milliliters) of water during the two to three hours **before** your workout.
 - Drink about **1/2 to 1 cup** (118 to 237 milliliters) of water every 15 to 20 minutes **during** your workout. Adjust amounts related to your body size and the weather.
 - Drink roughly **2 to 3 cups** (473 to 710 milliliters) of water **after** your workout for every pound (0.5 kilogram) of weight you lose during the workout.
- If you're exercising for **more than 60 minutes**, use a sports drink.
 - Sports drinks can help maintain your body's electrolyte balance and give you a bit more energy because they contain carbohydrates.

3. Diet

Size Matters

- Be careful not to overdo it when it comes to how much you eat before exercise. The general guidelines suggest:
 - **Large meals:** Eat these at least three to four hours before exercising.
 - **Small meals or snacks:** Eat these about one to three hours before exercising.

Before Workout

- Eating too much before you exercise can leave you feeling sluggish. Eating too little might not give you the energy to keep you feeling strong throughout your workout.
- If your workout is longer than 60 minutes, you may benefit by including a carbohydrate-rich food or beverage during the workout.
- Good snack options include:
 - An energy bar
 - A banana, apple or other fresh fruit
 - Yogurt
 - Fruit smoothie
 - A whole-grain bagel or crackers
 - A low-fat granola bar
 - Peanut butter sandwich
 - Sports drink or diluted juice
- A healthy snack is especially important if you plan a workout several hours after a meal.

After Workout

- To help your muscles recover and to replace their glycogen stores, eat a meal that contains both carbohydrates and protein within two hours of your exercise session if possible.
- Good post-workout food choices include:
 - Yogurt and fruit
 - Peanut butter sandwich
 - Low-fat chocolate milk and pretzels
 - Post-workout recovery smoothie
 - Turkey on whole-grain bread with vegetables

Tricks to Relieve Muscle Cramps

1. Stretching
 - The most common treatment for acute cramping is to stretch the involved muscle.
 - The theory here is that the nerve receptors are stimulated to shut down the cramp signals
2. Pickle Juice
 - Drinking pickle juice can stop cramps in 35 seconds
 - A packet of mustard has also found to stop cramps

References:

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