

ACTIVE P.T. SOLUTIONS
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SHOULD BE ACTIVE

APTS Monthly



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What Causes Muscle Cramps?

Muscle cramps are a common complaint in any healthcare practice. Providers of all types field questions about "cramps" everyday. Muscle cramps are sudden, involuntary contractions that occur in a variety of muscles throughout the body. These contractions can be spontaneous and painful to the point of being incapacitating. Commonly affected muscles include the calf muscles in the back of your lower leg, hamstring muscles in the back of your thigh, and quadriceps muscles in the front of your thigh. It is also common to experience cramps in your abdominal wall, arms, hands, and the bottom of the feet.

The intense pain of a muscle cramp can wake you at night from a sound sleep or make it difficult to walk. A sudden, sharp pain lasting from a few seconds to minutes, is the most common symptom of a muscle cramp. However, in some cases, the cramp can result in muscle soreness for hours or days.

There are several reasons that patients may experience muscle cramps. Cramps can result from intense bouts of exercise. This type of cramping is easier to make an association between cause and effect: *I ran 10 miles and my legs cramped at the 9th mile.* Dehydration is also a cause of cramps, but it does not need to be exercise induced. Dehydration is not only the excessive loss of fluids in the body; it is also the lack of fluid replenishment. If you are not an exercise person but drink large quantities of beverages that have a diuretic effect (such as coffee, tea, alcohol, or carbonated drinks) you are dehydrated. This type of self-induced dehydration can cause cramping of skeletal muscles. The majority of the population is walking around relatively dehydrated and doesn't realize it.

Low levels of minerals in the diet can

also result in muscle cramps. While sodium and potassium appear to get all the press when it comes to cramps, calcium is just as important and, in the general population, may actually be a more common cause of muscle cramps. Calcium, potassium, and sodium contribute to healthy muscle function and, when depleted, result in muscle cramps.

Poor blood supply to your legs and feet can cause cramping in those areas when you exercise, walk, or participate in physical activities. If the blood flow has been low for a long period of time, the cramps may occur at rest as well. While this can be common in patients with diabetes, there are several medical conditions that can also restrict peripheral blood flow.

Other medical conditions that can cause muscle cramps include:

1) Compression of spinal nerves, seen in conditions such as degenerative spinal stenosis, which can cause muscle cramps in your legs when walking or standing for long periods of time, 2) hypothyroidism (low thyroid gland function), which has direct effect on calcium metabolism and will result in generalized muscle cramps, 3) alcoholism, 4) pregnancy, and 5) various kidney disorders. There are other medical conditions that can cause muscle cramps.

Prescription medications are perhaps one of the most common causes of muscle cramps in the American population. Medications used for blood pressure, cholesterol, congestive heart failure, or respiratory disorders can cause cramping for different reasons. For instance, statin drugs commonly used to treat high cholesterol can cause a condition known as *rhabdomyolysis* (rab-doe-my-lysis), or a breakdown of skeletal muscle causing muscle fibers to be released into the blood stream. This is usually the cause of statin-related

cramping. Various blood pressure medications increase the excretion of electrolytes such as calcium, potassium, and sodium. Low levels of these electrolytes and minerals can result in muscle cramps.

Muscle cramps are very common in the elderly population. Unfortunately, muscle cramps in this population can be multi-factorial. For instance, an elderly patient may be taking a combination of statin drugs for high cholesterol, and a blood pressure medication, be sedentary, and have advanced degenerative changes in the lower back. Therefore, leg cramps in this example may be caused from muscle breakdown (rhabdomyolysis), low electrolytes, nerve compression, and/or *sarcopenia*, or age-related atrophy and wasting of skeletal muscle. As simple a symptom that muscle cramps seem to be, there are many causes and depending on the patient's medical history, may be very complicated and difficult to diagnose.

When should you see a healthcare provider about your muscle cramps? Benign muscle cramps generally resolve without treatment in a short period of time. You should consult with a medical professional about your muscle cramps if they cause severe pain that does not resolve in a few minutes; are associated with swelling, redness, or skin changes (erythema); result in prolonged muscle weakness; are frequent; don't improve with self treatment of ice and stretching exercises; and are not associated with an obvious cause such as intense exercise.

Article by Dale Buchberger, DC,
PT, CSCS

Exercise of the Month: Calf Stretches



Calf stretch vs. wall (top), runner's calf stretch (bottom), calf stretch with strap/towel (right)

When cramping starts in your calf muscle, it can be quite uncomfortable. Here are three different ways to stretch the calf at various levels of difficulty, depending on your symptoms and flexibility.

The first, and most difficult stretch, is what we call a calf stretch vs. wall. To perform, stand facing a wall and lean back to get as much of the ball of your foot of the affected side on the wall. Keep your knee straight and hips square to the wall. You may feel a stretch in this position, but, if able, bring your hips toward the wall until you feel a strong but tolerable stretch in your calf. Be sure not to push into the wall with your foot; this should be a passive stretch.

If this stretch is too difficult for you, the next easier stretch still involves the wall, but the positioning is slightly different. We call this a runner's calf stretch. This time, you will place your symptomatic leg behind you with your knee straight and heel flat on the floor. Keeping this position, lunge forward by bending the opposite knee to feel a stretch in your calf muscle.

If both of these stretches are still too much, the last stretch is the easiest to perform. The only equipment you will need is a strap/belt or towel/sheet. To perform this stretch, place the strap/towel around the ball of your foot. Keeping your knee straight, pull back on the strap/towel until you feel a strong but tolerable stretch in the

calf.

With all 3 of these stretches, you want to maintain an "uncomfortable but not painful" stretch. Hold each stretch for 20-30 seconds (or even up to 1 minute as tolerated as symptoms improve). Perform one stretch three different times per day. You could even perform one of each of these stretches once per day. Do whatever feels most comfortable for you at the time.

As always, if you experience pain with this stretch, seek the help of a health care professional!



What's Going on at APTS?

Tom Zirilli did a presentation at the YMCA about the Aging Spine as part of Senior Health and Fitness Day on May 31. There were 8 people in attendance, and they want him to come back to demonstrate an exercise program!

James Martin, PT Assistant student from Onondaga Community College, joined our team on May 15 for his 6-week clinical internship. He will be with us until June 23. Help us help him learn about the "real world" of physical therapy while he is here!

APTS now offers cupping therapy! It is an ancient form of alternative medicine in which the therapist puts special cups on your skin for a few minutes to create suction. The therapist uses a pump as a vacuum to draw skin into the cup. This causes your skin to rise and redden as the blood vessels expand. Patients get it for many purposes including to help with pain, inflammation, and blood flow, as well as relaxation and well-being. It draws the skin away from the muscle tissue, increasing the

flow of fluid in the space between the two, thus improving the healing process, promoting healthy tissue, and decreasing pain levels. Those that have had the infamous "tools" here at APTS will be glad to know that it is not as uncomfortable as the tools!



APTS Participates in YMCA Bowl-a-Thon

On Friday, April 28, the Active PT Solutions family participated in the 10th Annual YMCA Bowl-a-Thon at Starlite Lanes in Auburn. At the Y, strengthening the community is their cause. Proceeds from this event directly supported the Y's cause by making sure no one is turned away due to their inability to pay, and directly benefitted YMCA Youth

Programming. APTS reserved 3 lanes for 10 adults (employees and spouses) and 9 of our children! We all had a great time, and even won some great raffle and trivia prizes!



How To Manage Muscle Cramps

Most people think that they need to eat a banana or take a potassium supplement to treat cramps. Others may drink tonic water for the quinine (though the Food and Drug Administration has cautioned against this practice). Then there's the old wives' tale of putting a bar of Ivory soap between the bed sheets as another option. Nonetheless, the first thing that patients need to do in the treatment of cramps is to elicit the primary cause of the muscle cramps. Merely "treating the cramps" is not the same as "treating the cause of the cramps". If it turns out that the cramps are a result of statin medications for high cholesterol, and you are eating bananas and drinking water, the cramps will not get better. Treatment needs to be directed at the cause whenever possible. See your doctor and have a detailed conversation about your medical history to detect the underlying cause of the muscle cramps.

Dehydration can be caused by either excessive loss of fluids in the body during rigorous activity or the lack of fluid replenishment on a daily basis. If you drink large quantities of beverages that have a diuretic effect (such as coffee, tea, alcohol, or carbonated drinks), you can be dehydrated and suffer from muscle cramps. As a general rule, if you are not drinking at least half your body weight in ounces of water then you are "relatively dehydrated". Drink fluids that are non-carbonated, caffeine free, and alcohol free. Limit fruit juices, as they are high in simple sugars. Sports drinks should be diluted 50-50 with water. Diluting sports drinks improves absorption, reduces calories, and helps your budget! This formula from the

International Sports Medicine Institute will help calculate your daily water intake: 1/2 ounce per pound of body weight if you're not active (i.e. 80 ounces a day if you weigh 160 pounds), and 2/3 ounce per pound if you're athletic (106 ounces a day at 160 pounds).

Teenage endurance athletes should examine their diet for proper mineral intake. After age 15, most endurance athletes should be supplementing their diet with a multivitamin and/or a calcium, magnesium, and zinc supplement. Women over the age of 25 should supplement with calcium, magnesium, and zinc as well. Men and women over the age of 50 should also be supplementing their diet with a multivitamin and additional calcium, magnesium, and zinc. Along with adequate daily hydration, these minerals will reduce muscle cramps associated with poor dietary mineral supply.

Patients that experience muscle cramps secondary to type-2 diabetes need to manage the diabetes and take an active role in treating and reversing the diabetic trend through proper diet and increased activity. An anti-inflammatory diet (high antioxidant foods that are low in sugar and contain healthy fats) with adequate hydration and daily supplementation will assist your medical management and help resolve your muscle cramps as well.

Compression of spinal nerves, seen in conditions such as degenerative spinal stenosis, can cause muscle cramps in your legs when walking or standing for long periods of time. Treatment should be directed towards the spinal stenosis.

Reducing irritation at the nerve level through physical therapy, anti-inflammatories, injections, or even spinal decompression surgery will give you the best chance to resolve muscle cramps associated with this particular condition.

Hypothyroidism (low thyroid gland function) has a direct effect on calcium metabolism and will result in generalized muscle cramps. As with diabetes, a combination of medical and dietary management is the best method to treat the disorder and its side effects, including muscle cramps.

Prescription medications continue to be one of the most common causes of muscle cramps in the American population. Medications used for blood pressure, cholesterol, congestive heart failure, or respiratory disorders can cause cramping for different reasons. Statin drugs used to treat high cholesterol can cause a condition known as *rhabdomyolysis* (rab-doe-myo-lysis), or a breakdown of skeletal muscle causing muscle fibers to be released into the blood stream. This is usually the cause of statin-related cramping. Blood pressure medications increase the excretion of electrolytes such as calcium, potassium, and sodium. Low levels of these electrolytes and minerals can result in muscle cramps. Patients taking these medications should discuss electrolyte loss and muscle breakdown with their prescribing doctor BEFORE self-treating or taking any vitamin supplements.

Article by Dale Buchberger, DC, PT, CSCS

The first thing that you need to do in the treatment of cramps is to elicit the primary cause of the muscle cramps and treat the cause.

APTS Recipe Box: Paleo Salmon Salad Power Bowl

This is known as a mega-magnesium salad! Not only does magnesium help with cramps, it also supports immunity, healthy gut flora, and the thyroid. It is also the first mineral to get depleted when we are stressed or over-training.

Foods rich in magnesium include leafy greens, pumpkin or sunflower seeds, brown rice/ quinoa, fish, squash, beans and lentils, dates, molasses, avocado, and dark chocolate.

Ingredients: 4-oz grilled or baked salmon; 2-

3 cups seasonal greens; 1/2 cup sliced zucchini and squash; 1/2 cup raspberries; 1 tbsp balsamic glaze; 2 tbsp avocado or olive oil; dash of sea salt and pepper; 2 thyme sprigs; lemon juice.

Instructions: Cook salmon in 1 tbsp oil, lemon, pepper, and salt for 10 minutes at 400F or so. Sauté zucchini and squash in a skillet with 1/2 tbsp oil, and a little bit of salt and pepper. Once these are all cooked, it's time to build your bowl! First the greens, then add the

veggies, and then the salmon. Drizzle in balsamic glaze, thyme, and the rest of the oil. Toss all together. Add raspberries last with a touch of lemon juice on top. Feel free to add some sunflower seeds as an extra magnesium boost, and finish off your salad with a piece of dark chocolate!

Source: <http://www.cottercrunch.com/paleo-salmon-salad-veggie-bowls/>



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Get Well...Get Active...Be Active

Newsletter Edited by Carolyn B. Collier, PTA

**At Active Physical Therapy Solutions,
we utilize the most cutting edge
treatment and management
techniques available. Our goal is to
deliver the best possible healthcare in
a friendly, caring, and well-organized
environment. Our staff is here to
provide active solutions to achieving
your personal goals!**

...BECAUSE LIFE SHOULD BE

ACTIVE!

Nutrition 101: How Much Calcium Do You Need?

Calcium is a mineral that is necessary for life. It is essential to building strong, dense bones and keeping them strong and healthy as you age. It also helps our blood clot, nerves send messages, and muscles contract. About 99% of the calcium in our bodies is in our bones and teeth, and each day we lose calcium through our skin, nails, hair, sweat, urine, and feces, but our bodies cannot produce new calcium. Therefore, it is important to get calcium from the food we eat. When we don't get enough, it is taken from our bones, resulting in bone loss, low bone density, and broken bones.

How much calcium you need every day depends on your age and sex. Women age 50 and younger require 1000 mg daily, while women age 51 and older need 1200 mg daily. Men age 70 and younger require 1000 mg daily and men age 71 and older need 1200 mg daily. This amount includes the total amount you get from food as well as supplements.

The best source of calcium is from food. Dairy products are high in calcium, such as milk, yogurt, and cheese. Certain green vegetables and other foods contain calcium in smaller amounts. Some foods and beverages have calcium that has been added to it.

To determine how much calcium is in a particular food, you need to check the nutrition facts panel of the food label for the daily value (DV) of calcium. Food labels list calcium as a percentage of

the DV. This amount is based on 1000 mg of calcium per day. For example, 30% DV equals 300 mg, 15% DV equals 150 mg, etc.

The amount of calcium you need from a supplement depends on the amount of calcium you get from food. Aim to get the recommended daily amount of calcium you need from food first and supplement only if needed to make up the rest. There is no added benefit to taking more calcium than you need, and doing so may even have some risks.

Calcium supplements are available without a prescription in a wide range of options (tablets, chewables, liquid, etc.) and in different amounts. The best supplement is the one that meets your needs based on convenience, cost, and availability. Keep in mind:

- Choose brand name supplements with proven reliability. Look for labels that state "purified" or have the USP (United States Pharmacopeia) symbol, which means that the USP has tested and found the supplement to meet certain standards for purity and quality.
- Read the product label carefully to determine the amount of elemental calcium, which is the actual amount of calcium in the supplement, as well as how many doses or pills to take. Pay close attention to the "amount per serving" and "serving size".
- Calcium is absorbed best when taken in amount of 500-600 mg or less. This is the case regardless

of whether you're taking supplements or eating food. Try to get your calcium-rich foods and/or supplements in smaller amount throughout the day, preferably with a meal. While it's not recommended, taking your calcium all at once is better than not taking it at all.

- Take most calcium supplements with food, which produces stomach acid that helps your stomach absorb the supplements.
- When starting a new calcium supplement, start with a smaller amount to better tolerate it. When switching supplements, try starting with 200-300 mg every day for a week and drink an extra 6-8 ounces of water with it, then gradually add more calcium each week.
- Side effects from calcium supplements may occur, including gas and constipation. If increasing fluids in your diet doesn't solve the problem, try another type or brand of calcium. It may require trial and error to find the right supplement for you.
- Talk with your healthcare provider or pharmacist about possible interactions between prescription or over-the-counter medications and calcium supplements.

Article by Carolyn Collier, PTA

Source: <https://www.nof.org/patients/treatment/calciumvitamin-d/>