

Editorial**Foods Act as Medicine for Release of Cramps****Mohsin Masud Jan**

Editor

Cramps are sudden, painful muscle contractions that can happen in any part of the body. They can be caused by various reasons such as dehydration, overuse of muscles, or mineral deficiencies. For example, if you do not drink enough water, your muscles may cramp up during exercise. Cramps can be very uncomfortable and may last for a few seconds to several minutes. Stretching and staying hydrated can help prevent cramps from happening.

Leg cramps are involuntary, localised, and usually painful skeletal muscle contractions, which commonly affect calf muscles but can occur anywhere in the leg from foot up to the thigh. Leg cramps typically occur at night and usually last only seconds to minutes. Leg cramps may be idiopathic (of unknown cause) or may be associated with a definable process or condition such as pregnancy, renal dialysis, or venous insufficiency. This review does not currently cover leg cramps associated with renal dialysis or venous insufficiency.

Leg cramps are common and their incidence increases with age. About half of people attending a general medicine clinic have had leg cramps within 1 month of their visit, and more than two-thirds of people aged over 50 years have experienced leg cramps.¹

Little is known about the causes of leg cramps. Risk factors include pregnancy, exercise, electrolyte imbalances, salt depletion, renal dialysis, peripheral vascular disease (both venous and arterial), peripheral nerve injury, polyneuropathies, motor neurone disease, and certain drugs (including beta agonists and potassium-sparing diuretics). Other causes of acute calf pain include trauma, DVT (see review on Thromboembolism), and ruptured Baker's cyst.²

Cramps may occur in patients with lower motor neuron disorders, neuropathies, metabolic disorders, and acute extracellular volume depletion. However, they also often occur in healthy subjects with no history of nervous or metabolic disorders, such as during sleep, pregnancy, and strenuous physical exercise. The latter cramps have been defined as "benign cramps" or "idiopathic cramps" or "cramps with no apparent cause"³.

Some muscles are more susceptible to electrically elicited cramps than others, independent of the side dominance. For example, we found that leg muscles are more resistant to cramp induction than foot muscles⁴.

Generally accepted that cramps have a neurogenic nature, their origin has been long discussed³.

Muscle cramps are caused by ectopic discharges from nerves or nerve terminals; therefore, a variety of neuropathic conditions such as amyotrophic lateral sclerosis (ALS), peripheral neuropathies, and cramp-fasciculation syndrome are commonly associated with cramps.³

Cramps are also frequent during the last trimester of pregnancy and in athletes such as marathon runners.⁵

When you have been blessed with a case of cramps that

feel like a knife is being twisted in your body, your game plan for pain relief might include popping a pain killer and binge-watching your favourite series with a heating pad. While those tried-and-true tactics will likely alleviate some of the pain, noshing on certain foods that help with cramps may also save you from your agony.

Here, we break down the best foods that help with cramps and explain the magical powers driving these pain-relief effects.

Dark leafy greens: Mixing some dark leafy greens into your diet is an easy way to get your fill of magnesium. One cup of raw spinach, for example, provides about eight per cent of the Recommended Dietary Allowances (RDA) for the mineral per cup, while a cup of turnip greens offers roughly five per cent of the RDA. Add them to your morning smoothie or lunchtime stir fry, whip up a quick sauté with eggs or chicken, or use them as a base for your favourite salad toppings.

Pumpkin seeds: Pumpkin seeds are one of the best sources of magnesium, according to the National Institutes of Health, packing 41 per cent of the RDA per half-cup. To get your fill of the food that helps with cramps, blend the seeds in a food processor to create a homemade pumpkin seed butter that's the perfect dip for apples. You can also mix them into your salads or coleslaw for a crunchy addition, use them in place of pine nuts in pesto, or incorporate the seeds or butter into no-bake energy bites.

Peppermint: This potent-smelling herb is packed with two of the aforementioned polyphenols: diosmin and hesperidin. When it comes to peppermint, often the easiest way to bring that into your diet is through peppermint tea, which is a really popular way to sip on it and consume it. Not a fan of the beverage? Get your fill of the food that helps with cramps by finely chopping the leaves and adding them to a salad or stirring them into Greek yogurt with berries.

Ginger: Ginger has a reputation for being an anti-inflammatory all-star, and one systematic review found that consuming the root orally (via capsules containing ginger powder) may be a potentially effective pain relief treatment for cramps. While there's no guarantee eating ginger straight-up will have the same effects as those found in studies, it's easy enough to incorporate into your diet and, thus, worth a shot. Consider brewing a cup of ginger tea or blending it into your green smoothie. A ginger-based smoothie with some berries would be a fabulous cramp drink in the morning.

Turmeric: A single golden spice can help you score that anti-inflammatory, prostaglandin-inhibiting curcumin. We really love adding turmeric into stews, or you can even use that as a seasoning onto the fish, like the salmon or mackerel. Turmeric lattes, as well, are excellent, like a golden milk latte you can do before bed. That warm, soothing beverage can also help reduce some of that cramping and that pain, too.

Tofu: While dairy is typically what first comes to mind when you think of calcium, you can also get your fill from tofu, which provides 12.5 per cent of the RDA per three ounces. Transform the plant-based protein into a crispy taco filling, mix it into soups or curries, or use it to create an animal-free take on scrambled eggs.

Yogurt: Along with satisfying protein, you'll nab nearly 30 per cent of the RDA for calcium per cup of plain, whole milk yogurt, which makes it one of the top foods that help with cramps (potentially, of course). Eat the dairy product by the spoonful, turn it into a creamy salad dressing, or use it as a dip for fresh veggies.

Dark chocolate: Just one ounce dark chocolate with 70 to 85 per cent cacao packs a whopping 21 per cent of the RDA for magnesium, and luckily it's pretty effortless to incorporate into your diet. Aside from eating a few chocolate squares straight-up, consider mixing cacao powder with some honey and pumpkin seed butter for a fudge-like treat.

Orange Juice: One cup of refreshing OJ has plenty of water for hydration. It's also a potassium star with nearly 500 milligrams per cup. Orange juice has 27 milligrams of calcium and magnesium. Choose a calcium-fortified brand for an extra boost.

Snack Smart With Nuts and Seeds: Like beans and lentils, nuts and seeds are a great source of magnesium. For example, 1 ounce of toasted sunflower seeds has about 37 milligrams of magnesium. And 1 ounce of roasted, salted almonds has double that. Many types of nuts and seeds have calcium and magnesium as well.

Salmon for Circulation: Sometimes muscle cramps are the result of poor blood flow. Eating oily fish like salmon can help improve it. Plus, a 3-ounce portion of cooked salmon has about 326 milligrams of potassium and 52 milligrams of sodium to help with muscle cramps. Not a salmon fan? You also could try trout or sardines.

Tap into Tomatoes, Juice and All: Tomatoes are high in potassium and water content. So if you gulp down 1 cup of tomato juice, you'll get about 15% of your daily value of potassium. You'll also give your body hydration to prevent muscle cramps from starting.

Bananas: A Time-Tested Treatment: You probably know that bananas are a good source of potassium. But they'll also give you magnesium and calcium. That's three out of four nutrients you need to ease muscle cramps tucked under that yellow peel. No wonder bananas are a popular, quick choice for cramp relief.

Sweet Relief from Sweet Potatoes: Like bananas, sweet potatoes give you potassium, calcium, and magnesium. Sweet potatoes get the win because they have about six times as much calcium as bananas. And it's not just sweet potatoes: Regular potatoes and even pumpkins are good sources of all three nutrients. Plus, potatoes and pumpkins naturally have a lot of water in them, so they can help keep you hydrated, too.

The Avocado: A Potassium Powerhouse: One creamy, green berry (yes, it's really a berry!) has about 975 milligrams of potassium, twice as much as a sweet

potato or banana. Potassium is important because it helps your muscles work and keeps your heart healthy. So swap out mayo on a sandwich with mashed avocado, or slice one onto your salad to help keep muscle cramps away. They have a lot of fat and calories, so keep that in mind.

Beans and Lentils: Legumes like beans and lentils are packed with magnesium. One cup of cooked lentils has about 71 milligrams of magnesium, and a cup of cooked black beans has almost double that with 120 milligrams. Plus, they're high in fiber, and studies show that high-fiber foods can help ease menstrual cramps as well as help control your blood sugar and lower levels of "bad" LDL cholesterol.

Melons Are the Total Package: These fruits have it all: loads of potassium, a good amount of magnesium and calcium, a little sodium, and a lot of water. Sodium and water are key because as you exercise, your body flushes sodium out with your sweat. If you lose too much water, you'll get dehydrated, and muscle cramps may happen. Eating a cup of cubed cantaloupe after a workout can help.

Watermelon for Hydration: They're about 90% water, so when you need foods that hydrate, a cup of watermelon will do it. Since it's a melon, it's also high in potassium, but not quite as high as others.

Milk: It's a natural source of electrolytes like calcium, potassium, and sodium. It's good for hydration. And it's packed with protein, which helps repair muscle tissue after workouts. All of the above can help protect against muscle cramps.

Pickle Juice: Some athletes swear by pickle juice as a fast way to stop a muscle cramp. They believe it's effective because of the high water and sodium content. But that might not be the case. While pickle juice may help relieve muscle cramps quickly, it isn't because you're dehydrated or low on sodium. It is more likely because the pickle juice sets off a reaction in your nervous system that stops the cramp, according to recent research.

REFERENCES

1. Shahraki AD. Effects of vitamin E, calcium carbonate and milk of magnesium on muscular cramps in pregnant women. *J Med Sci* 2006;6:979–983.
2. Mokhtari M, Yaghmaie M, Mohammadi M. The comparison of the therapeutic effect of vitamin E on leg cramps during pregnancy. *Obstet Gynecol Infert* 2002;5:42–46.
3. Miller TM, Layzer RB. Muscle cramps. *Muscle Nerve* 2005; 32: 431–42.
4. Minetto MA, Botter A. Elicitability of muscle cramps in different leg and foot muscles. *Muscle Nerve* 2009; 40: 535–44.
5. Schweltnus MP. Muscle cramping in the marathon: aetiology and risk factors. *Sports Med* 2007; 37:364–367.