



MISSISSIPPI STATE UNIVERSITY™  
MS AGRICULTURAL AND FORESTRY  
EXPERIMENT STATION

# MAFES DAWG TRACKS

To be awoken in the middle of the night with your leg's calf muscle feeling like an accordion at a Louisiana zydeco festival is not pleasant. Muscle cramps commonly happen during or after strenuous activity such working hard or exercising. While pickle juice does often give quick relief, it will not solve the real issue.

Muscle cramps can be caused by a multitude of medical factors such as diabetes, liver or thyroid issues, overweight or age. However, it is more commonly associated with heat stress, overuse, or temporary mineral imbalance.

Heat stress is a real risk when doing any activity in this Mississippi summer. A known sign that your body is in heat stress is muscle cramps. These occur because a person's core body temperature rises, and their heart starts beating faster (also a heat stress sign) to increase blood flow to cool the body down. As this is happening organs start competing for oxygen found in blood. Thankfully, our body was wonderfully made to prioritize our brain's need over muscles. Therefore, the depletion of blood flow to muscles, in an effort to keep the brain functioning, causes muscle cramps. That is also the *WHY* behind mental confusion & depletion of brain function, being a critical sign of heat stroke leading to death. To prevent a journey along that pathway, take plenty of breaks in a cool area & stay hydrated.

Muscle overuse occurs because they are simply not conditioned for the activity and tire more easily. Stretching gently before and after strenuous activities can help combat soreness and cramping. Stretching before bedtime can help getting leg cramps at night.

The cause of muscle cramps from mineral imbalance is common in people who become dehydrated or take certain medicines; often leading to a lack of potassium, calcium, magnesium or sodium. A well-balanced diet, plenty of water, and a timely sports drink can help prevent muscle cramps in these situations.

Often, some self-care will sooth muscle cramps.

- Stretch and massage that muscle.
- Apply heat, and when the pain subsides some apply cold.
- Take an over-the-counter pain reliever like ibuprofen or acetaminophen.

But what about the pickle juice?

Experience from taking a drink after a nighttime stumbling to the refrigerator tells us this magical green potion really does work, almost instantly, to stop a muscle cramp. "The theory is that it activates nerve receptors in the throat and mouth that send a signal to the brain, helping calm the muscle cramp and release it through a neuromuscular reflex—and it's thought that it's specifically the vinegar content in the pickle juice that does this," said Yasi Ansari a spokesperson for the Academy of Nutrition and Dietetics.

If you have muscle cramps that happen often, have swelling, redness or skin changes, occur all over your body, or don't get better with self-care, you should see a doctor. Otherwise, make efforts to prevent heat stress, overuse & mineral imbalances while performing self-care. And yes, if you do get a cramp drink the pickle juice for a temporary but quick relief.

## Sources:

<https://www.verywellhealth.com/does-pickle-juice-help-with-cramps-11719471>

<https://www.mayoclinic.org/diseases-conditions/muscle-cramp/symptoms-causes/syc-20350820>

Survival Med, Extreme Heat Emergencies & First Aid webinar

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