

Can Pickle Juice Prevent Muscle Cramps?

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STORY AT-A-GLANCE

- › Pickles start as cucumbers, which are technically a fruit, related to both the melon and squash plant families
- › One cup of chopped cucumbers provides several powerful vitamins and minerals, including vitamins K and C, pantothenic acid, manganese, potassium and magnesium, which help fight inflammation, promote heart health and combat infections
- › Cucumbers are triterpenoids, meaning they are plants with natural, cancer-killing compounds. When pickled, the vinegar offers additional nutritional value, and when fermented, they offer probiotic advantages
- › Some claim there are benefits to drinking pickle juice such as easing muscle cramps, balancing the acids in your stomach and decreasing blood sugar spikes and topically soothing sunburn pain

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Pregnant women aren't the only ones with an occasional hankering for pickles. The sharp, salty and briny deliciousness of these crunchy cucumbers is a favorite worldwide.

Notably, the word "pickle" comes from the northern German word "pókel" or Dutch "pekel," both meaning "salt" or "brine." Actually, these are two of the most important elements of the pickling process.

If there's any doubt as to the age of this plant-based food, look no further than the Pickle History Timeline,¹ which details the journey and attributes of this mild-tasting garden offering.

You may be interested to know that pickles, which start as cucumbers, are technically a fruit, related to both the melon and squash plant families. Pickle history dates back to 2030 B.C., when cucumbers are said to have been preserved by people living in the India and Tigris Valley regions.

There are now probably hundreds of cultivars. Cucumbers come in two main categories – slicing cucumbers, which are generally larger and thick-skinned, and pickling cucumbers, which are smaller and thinner-skinned.

Cucumbers are actually 90% water but still manage to provide a number of valuable health benefits. The ancient process required to preserve them speaks not only of their taste and hearty crunch, but what they're able to do for you.

Cucumbers – Health Benefits Before the Pickling Process

When you pick a cucumber from the garden or purchase one at a farmers' market or supermarket, you probably give little thought to the fact that adding them to your table will impart several advantageous benefits in the form of vitamins and minerals.

In terms of the Dietary Reference Intake (DRI) needed for a day, a single cup of chopped cucumbers provides several powerful vitamins and minerals:

- 11% of the vitamin K, which fights inflammation
- 4% of the vitamin C, which combats infection
- 4% of the pantothenic acid (vitamin B5), which produces energy
- 4% of the manganese, which builds **strong bones**
- 4% each of the potassium and magnesium, both promoting heart health

People have been using cucumbers for several health remedies over centuries. Traditional health uses for the humble cucumber include **headache relief** and for soothing tired, puffy eyes. In fact, these and other benefits convinced scientists that taking a closer look at cucumbers might net more health advantages.

Cucumbers have been found in clinical studies to have antioxidant capabilities. One study notes that they also contain:

“Glycosides, steroids, carbohydrates, saponins and tannins. Therefore, the presence of flavonoids and tannins in the extract suggests that these compounds might be responsible for free radical scavenging and analgesic effects of the extract.”²

Further, cucurbitacins such as cucumbers are triterpenoids, meaning they are plants that have natural, **cancer-killing compounds** in them. They inhibit signaling pathways known to proliferate cancer, positively impacting survival rates of patients.

One study says cucumbers have well-known chemotherapeutic agents, such as doxorubicin and gemcitabine, which may be significant in future cancer research.³

Pickling Versus Fermentation

Pickling requires three or four main ingredients – cucumbers, water, salt and, usually, vinegar. Cucumbers are fermented by Lactobacillus bacteria, which normally cover the cucumber’s skin. You should know, though, that these natural, highly beneficial probiotic bacteria are generally removed during commercial processing.

Eating fermented vegetables like cucumbers promotes gut health. Fermented cucumbers contain beneficial enzymes, and the process increases mineral bioavailability and produces short-chain fatty acids, which helps upgrade your immune-system function. B vitamins, biotin and folic acid are also increased.

For good health overall, paying close attention to the health of your gut is key. While taking a high-quality probiotic supplement will be beneficial, regularly eating a variety of

fermented foods is a better option.

However, "It is important to note that pickles made with vinegar do not contain live probiotics," and therefore no probiotic benefits. As for pickled pickles, according to PBS:

"Pickles are created by immersing fresh fruits or vegetables in an acidic liquid or saltwater brine until they are no longer considered raw or vulnerable to spoilage. When we think of pickles, cucumbers commonly come to mind. Pickled cucumbers are often lacto-fermented in saltwater brine.

During this process lactic microbial organisms develop, which turn the naturally occurring sugars of foods into lactic acid. In turn, the environment becomes acidic quickly, making it impossible for any spoiling bacteria to multiply.

Cucumber pickles can also be made with a salt and vinegar brine, a popular choice for home cooks. The brine (is) known as 'pickle juice.'"⁴

Pickle Juice Versus Pickle Brine

Possible enhanced athletic performance from drinking pickle juice beforehand has been a popular theory for some time. There are also those who believe it increases thirst and therefore subsequent hydration; there are studies that don't seem to back up either supposition.^{5,6}

However, pickle juice and pickle brine are not one in the same, asserts Filip Keuppens, executive vice president at the Pickle Juice Company, who wanted to get to the bottom of the pickle juice claim, especially after the underdog victors of a high stakes high school football game attributed their win and players' absence of muscle cramps to their pickle brine intake.

Certified athletic trainer Kevin Miller, Ph.D., and an independent team of scientists boiled it down to the vinegar in the brine. Artificially induced leg cramps in study participants who then were given pickle brine to drink resulted in eased cramping within 30 to 90 seconds.

Miller said the cramp relief occurred because the pickle brine “overwhelmed the neuroreceptors and caused them to reset the neurological impulse that dictated the cramp.”

Keuppens concurred and added that pickle juice from the Pickle Juice Company causes this response more effectively than pickle brine from a jar of dill spears because they contain only the needed ingredients. Your body doesn’t have to spend energy on pain relief.⁷

What Other Value Is There in Drinking Pickle Juice?

Pickle juice contains trace amounts of fat, but also contain dietary fiber, and vitamins A and K. It also high amounts of salt, according to the Cleveland Clinic.⁸ Between the nutrition contained in the actual cucumbers and the additional pickling ingredients, pickle juice is recognized for having potent health benefits, according to several studies:

- Vinegar for stomach pain or nausea is a known remedy, which is why pickle juice is often tapped for this purpose. It may help by restoring **stomach acidity** when someone suffers from unusually low production of gastric juices. These are just anecdotal, however; no clinical evidence supports this hypothesis. It should be noted that if you have an ulcer, drinking pickle juice is not recommended.
- Some people claim drinking pickle juice can fight heart disease and help cure cancer. Well, there’s only a negligible amount of antioxidants and probiotics in it. Those you’ll find in fermented pickles, not necessarily pickled cucumbers. You would have to drink a lot for any benefits in this regard.⁹

There is evidence, though, that drinking pickle juice may decrease **blood sugar spikes** after meals.¹⁰

It may be because vinegar is able to moderate “walking glucose concentrations in adults with well-controlled Type 2 diabetes,” according to a study with that title.¹¹ It may lower your blood sugar by slowing down the digestive process after eating.¹²

- While scientists say there's no evidence that blotting pickle juice onto sunburned skin will offer any relief, it's still a popular method.
- **Muscle cramps** are the bane of anyone who's ever had one and are dreaded by those who have them regularly. But some people believe drinking pickle juice might be a way to stave them off beforehand and ease them once one sets in.

One study shows that drinking 1.5 ounces of pickle juice for every 100 pounds of body weight offers relief in about a minute and a half. It was also 36% faster than drinking plain water and 45% faster than ingesting nothing.¹³ Menstrual cramps may be relieved by drinking pickle juice in a similar way to cramps that come on due to exercise. It may also serve to curtail salt cravings that may occur during "that time of the month."

When making or choosing pickles made from cucumbers, remember that other veggies added to the mix make a delicious diversity in flavors. Cauliflower, radishes, green beans, asparagus, onions and other vegetables also add nutrition.

FYI – A Few Caveats Pertaining to Cucumbers and Pickle Juice

Because of the high amount of salt in pickles, it may induce swelling, bloating and water retention. Additionally, these results may bring on gout or exacerbate the problem due to the high acidity.

Cucumbers were once in the EWG's Dirty Dozen list of plant-based foods that have a high pesticide load, so to be safe, choose organic cucumbers. If you don't grow your own highly organic garden for your cucumber fix, purchasing the organic version is always the best way to avoid toxins that are shown to be damaging to your health. The Environmental Working Group provides information on the plant-based foods most susceptible to being grown in a toxic environment.¹⁴

Additionally, cucumbers are natural ethylene generators, so they initiate the ripening process in other fruits and vegetables, such as bananas, melons and tomatoes, so it's best to store them in separate places.

Sources and References

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