

# The Benefits of Fermented Beets

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## STORY AT-A-GLANCE

- › Raw beet juice has been shown to lower blood pressure thanks to naturally occurring nitrates that are converted into nitric oxide in your body. Nitric oxide relaxes and dilates blood vessels, improving blood flow
- › Beet juice can also boost stamina during exercise by as much as 16%, and has been shown to improve muscle capacity in people with heart failure by 13%
- › Fermenting your beets gives you all the health-boosting benefits of raw beets – which are made even more bioavailable through fermentation – plus the beneficial bacteria and enzymes that result from fermentation

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**Beets** and raw beet juice are typically recommended in limited amounts due to high sugar content. However, when fermented, beets are among the healthiest vegetables out there, as most of the sugar is then gobbled up by beneficial bacteria during the fermentation process while leaving other health-boosting ingredients intact.

**Fermented foods** are also chock-full of **probiotics** or good bacteria. A large number of studies have demonstrated how the ideal balance and diversity of bacteria in your gut forms the foundation for physical, mental and emotional well-being, and fermented beet juice has many additional benefits beyond probiotics.

## Raw Beets Boost Heart Health

For example, raw beets have been shown to lower blood pressure by an average of four to five points in a matter of hours.<sup>1</sup> This effect is due to the naturally occurring nitrates in beets, which are converted into **nitric oxide** in your body.<sup>2</sup>

Nitric oxide, in turn, relaxes and dilates your blood vessels, improving blood flow and **lowering blood pressure**. In fact, medicinally, nitrates are used to treat angina and congestive heart failure, and research shows a glass of beetroot juice has the same effect as prescription nitrates.<sup>3</sup>

Competitive athletes also use beet juice for its nitric oxide-boosting benefits. Research shows raw beets can boost stamina during exercise by as much as 16%,<sup>4</sup> an effect attributed to increased nitric oxide.

In another study,<sup>5</sup> nine patients diagnosed with heart failure who experienced loss of muscle strength and reduced ability to exercise were found to benefit from beet juice.

The patients were given 140 milliliters (mL) – about two-thirds of a cup – of concentrated beet juice, followed by testing, which found an almost instantaneous increase in their muscle capacity by an average of 13%.

One important caveat – Avoid using mouthwashes or chewing gum, as this prevents the nitric oxide conversion from occurring.<sup>6</sup> The reason for this is that the nitrate is converted into nitrite in your saliva by friendly bacteria. That nitrite is then converted into nitric oxide in other places of your body.

Naturally occurring betaine in beets also **reduces inflammation** and protects against environmental stressors that can play a role in heart disease.

## **Beets Have Powerful Immune-Boosting and Anticancer Properties**

The phytonutrients that give beets their deep crimson color also have powerful anticancer properties. Research<sup>7</sup> has shown that beetroot extract reduced multiorgan tumor formations in various animal models when administered in drinking water.

Beetroot extract is also being studied for use in treating human pancreatic, breast and [prostate cancers](#).<sup>8</sup>

In addition, raw beets can boost immune function thanks to high vitamin C, fiber, potassium and manganese, while the betalain pigments and sulfur-containing amino acids in beets support your body's Phase 2 detoxification process. Traditionally, beets have been valued for their ability to purify your blood and liver.

High in the B vitamin folate, beets also lower your stroke risk and are an excellent food for pregnant women. Folate is essential for many bodily processes, and deficiency during pregnancy raises the risk of [birth defects](#). The blood-cleansing properties of beet kvass can also alleviate morning sickness.

## Why Ferment Your Beets?

Fermenting your beets rather than eating them raw gives you all the health-boosting benefits of raw beets – which are made even more bioavailable through fermentation – plus the beneficial bacteria and enzymes that result from fermentation.

Besides pickled beets and beet-infused [sauerkraut](#),<sup>9</sup> fermented beet juice, known as beet kvass,<sup>10</sup> is rising in popularity in the West. Beet kvass has a long tradition of use in Russia, Ukraine and other eastern European countries, where it's consumed therapeutically as a general health tonic. It's also commonly added to soups, sauces and vinaigrettes.

Traditionally, beet kvass has been used to boost immune function, cleanse blood, combat fatigue and treat kidney stones, chemical sensitivities, allergies and digestive problems. Anecdotal reports suggest beet kvass can even improve the appearance of age spots, thicken hair and minimize graying of hair.

A 2015 animal study confirms the gastrointestinal benefits of lacto-fermented beetroot juice, showing it improves [gut microbiota](#) and metabolic activity.<sup>11</sup>

Because of its detoxifying properties, avoid drinking too much when first starting out. Doing so could result in an overload of released toxins, producing bloating, constipation and/or cold or flu symptoms.

As a general recommendation, start with 1 ounce per day, gradually increasing the amount to an 8-ounce glass per day. If you're highly toxic, you need to start with as little as a tablespoon.

## Simple Beet Kvass Recipe

A number of beet kvass recipes can be found online. Here's one from [BeetsandBones.com](http://BeetsandBones.com):<sup>12</sup>

### Ingredient list

- 2 large raw organic beets, cut into 1-inch cubes. Do not grate them, as this will release too much sugar. You do not need to peel the beets if they're organic, unless you really want to, as the skin contains many bacteria that drive the fermentation. If using conventionally grown beets, peeling is advisable to avoid pesticide residues.
- 3 tablespoons of sauerkraut juice or pickle juice.
- Pure, filtered water, freshly squeezed beet juice or a combination of beet juice and pure water. Tap water tainted by chlorine or other chemicals will not work, as the chemicals will prevent fermentation and cause rotting instead. If using tap water, be sure to boil it first and let it cool before using.
- Optional: 1/2 teaspoon of natural unrefined salt, such as sea salt, or my personal favorite, [Himalayan salt](#). The salt prevents bad bacteria from forming, but too much will make the drink unpalatable.

Place the beets in a large-mouth mason jar, filling the jar about one-third of the way. Add sauerkraut or pickle juice, salt, and water or beet juice, leaving 2 inches of space between the top of the liquid and the lid. Cover tightly and shake well to dissolve the salt.

Keep at room temperature for three to five days. In winter months, the fermentation process can take up to seven days due to colder room temperatures. Keep the lid tightly closed but remember to release pressure daily.

If froth, scum or mold develops, simply skim it off the top with a spoon. Do a daily taste test, and when the kvass has developed a pleasing taste, place it in the refrigerator to stop the fermenting process. Fizzy bubbles rising to the top is a sign that it's ready.

## **Other Suggestions and Recommendations**

If you like, you can separate the kvass from the beets by straining the liquid into a clean jar. As for storage, research shows that when refrigerated, lacto-fermented beet kvass retains its antioxidant powers for as long as 30 days.<sup>13</sup> Naturally, the beets can be consumed as well, or you can reuse them to start another batch of kvass.

The beets also make an excellent addition to traditional borscht soup (beet soup) while the kvass can be used to pickle hard-boiled eggs. Some beet kvass recipes call for whey to be used,<sup>14</sup> but it's not really necessary and adds more steps and time to the process. Flavors can also be added,<sup>15</sup> such as raisins, strawberries, fresh-squeezed orange juice, apple, carrots, lavender, fresh or dried mint leaves, cinnamon or ginger.

## **Opt for Organic or Heirloom Beets and Eat the Greens, Too**

Whether you're juicing your beets, eating them raw or fermenting them, I strongly recommend buying organic beets. As with many other crops, most of the sugar beets grown in the U.S. are now genetically engineered (GE). While table beets are not currently GE, they're often grown in close proximity to sugar beets, and cross-pollination

is known to occur. So, when choosing beets to eat, opt for organic varieties whenever possible to avoid potential GE contamination.

You can also buy your own heirloom beet seeds because beets are easy to grow. The many nutrients and real health advantages they offer are worth it. Besides the beetroots, **beet greens** offer a plethora of vitamins and minerals, too. They're a great source of fiber – 1.41 grams in just one cup – as well as vitamin B6, magnesium, potassium, copper, manganese and antioxidants.<sup>16</sup>

The high amount of vitamin K in beet greens contains blood-clotting properties, fights aging, supports your DNA, reduces risk of osteoporosis, works with calcium to boost bone strength and also plays a role in fighting Alzheimer's disease. Beet greens contain more iron than spinach and a higher nutritional value than the vegetable itself.<sup>17</sup> Besides using young beet greens in salads or sautéing, juicing beet greens is another excellent way to obtain all these nutrients.

## **Raw Beets and Beet Kvass Can Benefit What Ails You**

As you can see, beets have a wide range of health benefits. If you struggle with high blood pressure or heart failure, you can experiment with raw beet juice or beet kvass and see how it impacts you. If you notice improvements in your blood pressure or stamina after drinking the juice, then it's a good fit.

If you have diabetes or are insulin resistant, carefully monitor how raw beet juice affects your overall health, and factor that into how often you choose to consume it. Typically, moderation is best.

Using beet kvass would appear to be a far better option, as much of the sugar is eliminated in the fermentation process. By supplying beneficial bacteria, the drink can also have a beneficial impact on diabetes and a whole host of other health problems, especially ailments rooted in gut dysfunction, and that list is a rather long one since it's difficult to be optimally healthy if your gut microbiome is unhealthy.

## Sources and References

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