

# Is Alkaline Water Beneficial?

## Water Is Water

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It's bad enough that some people are paying a premium price for bottled water that isn't required to be any better than tap water, but the latest fads appear to be things like "alkaline" water and "ionized" water. And these "super" waters come with a really hefty price tag.

If you believed the hype behind these products, you would think that they are revolutionary advances that will cure all sorts of ills. But the truth is these enticing claims are completely bogus. They contradict the basic laws of chemistry and biochemistry.

More importantly, there are no good quality clinical studies showing that they work!

### What Is Alkaline Water?

Let's start with alkaline water - but first a bit of background information.

Pure water has a pH of around 7, which is neutral. However, if the water is exposed to air for any length of time it picks up CO<sub>2</sub> from the atmosphere. The CO<sub>2</sub> dissolves in the water and is converted to carbonic acid making most sources of pure water slightly acidic.

On the other hand, if metal salts are dissolved in the water it generally becomes slightly alkaline.

### Is Alkaline Water Beneficial?

The questions that we might ask are:

**1) Does alkalizing the body have any health benefits?**

In the 1930s Otto Warburg, one of the founders of modern biochemistry, showed that cancer cells were much more dependent on glucose (blood sugar) as an energy source than were most other cells in the body and that cancer cells metabolized glucose in a way that made the cancer cells very acidic.

That information languished for many years, but interest in the "Warburg Hypothesis" has been revived in recent years by studies showing that cancer cells can be selectively killed by limiting their source of glucose.

In theory, making the body more alkaline would also slow the growth of the cancer cells. There is some evidence to support that hypothesis, but the evidence is still relatively weak.

It is the same with the other proposed health benefits of alkalizing the body. There is some evidence in the literature, but it is not yet convincing. As a scientist I'm keeping an open mind, but I'm not ready to "bet the farm" on it.

## 2) Can alkaline water alkalize the body?



Here the answer is a clear cut **NO!** In fact, this hypothesis wins my "Flying Pig" award for the month!

The body has a very strong buffer system and some elaborate metabolic controls to maintain a near-constant neutral pH. More importantly, water is such a weak buffer that it has almost no effect on body pH!

If you really want to alkalize your body you can do that by eating more of the alkaline foods (most fruits, including citrus fruits, and most vegetables, peas, beans, lentils, seeds & nuts) and less of the acidic foods (grains, especially refined grains, meat, especially red meat, fish, poultry and eggs).

I've seen some experts recommend 60% alkaline foods and 40% acidic foods. I can't vouch for the validity of that recommendation in terms of the benefits of alkalinizing the body, but there are lots of other good reasons to eat more fresh fruits and vegetables and less red meat and refined carbohydrates.

### **Is Ionized Water Beneficial?**

Ionized water is an even sillier concept from a chemical point of view.

It is very difficult to ionize pure water and the ions that you do create quickly recombine to give you pure water again without any change in pH or physical properties.

If you add sodium chloride (table salt) to the water you can get electrolysis that creates a slightly alkaline pH at one electrode and a slightly acidic pH at the other electrode.

However, as soon as you turn off the current, these pH changes rapidly disappear. Even if you were somehow able to capture some of the alkaline or acidic water remember that water alone has almost no effect on body pH.

### **Never Underestimate The Placebo Effect**

But, what about all of those glowing testimonials that you have heard?

You need to remember that the placebo effect is near 50% when it comes to pain or a feeling of well being.

You can't repeal the laws of chemistry and biochemistry. Water is, after all, just water!  
Good science trumps good testimonials any day.

### **The Bottom Line:**

1) Don't waste your money on alkaline water or ionized water. Water is a very poor buffer and has almost no effect on the pH of our bodies.

2) There may be some health benefits to keeping our bodies in a more alkaline state, but the best way to do that is to eat more alkaline foods and less acid foods (<http://www.webmd.com/diet/alkaline-diets>).

*These statements have not been evaluated by the Food and Drug Administration. This information is not intended to diagnose, treat, cure or prevent any disease.*

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