

# Alkaline Water Nonsense

[Office for Science and Society](#)

Separating Sense from Nonsense

The words absurd, ridiculous, ludicrous, preposterous, comical, and farcical come to mind, but they still don't quite seem to capture the extent of the mind-numbing nonsense. And what nonsense is that? "Ionized Alkaline Water!"



20 Mar 2017

It is not often that I'm left speechless. But sometimes you run into a situation where words just fail you. Absurd, ridiculous, ludicrous, preposterous, comical, and farcical come to mind, but they still don't quite seem to capture the extent of the mind-numbing nonsense. And what nonsense is that? "Ionized Alkaline Water!" People, seduced by the outlandish promotional drivel, are spending thousands of dollars for a device that produces this liquid malarkey.

Some promoters just blather mindlessly about increasing energy, reducing weight, reversing aging, boosting immunity, controlling blood pressure, cleansing the colon or eliminating body odour. More disturbing are the ones who speak of preventing cancer and increasing life expectancy. And how is alkalized water supposed to accomplish these miracles?

Well, you see, “all electrons in water either spin to the left or the right and high speed of the left spin of electrons is considered to substantiate that the water is vital and alive. Only ionized water has this quality.” Uh huh. There’s more. “Ionized water oxygenates the body via an increase in the oxygen-hydrogen angle. All other water is void of this benefit.” Yeah, sure. “Ionized water has positive polarity. Almost all other waters are negative in their polarity. Only positive polarity can efficiently flush out toxins and poisons in the body at the cellular level.” There’s still more. The amazing water ionizer produces “smaller water molecule clusters which enables every nook and cranny of your body to be super-hydrated”. Makes your head swim.

All this rubbish does have an effect. It makes anyone with a chemistry background want to tear their hair out. Of course, the promoters of ionized alkalized water have an answer to that too. They claim the water has a calming effect and can even grow hair. Not only is there not an iota of scientific evidence for any of the claims, the notion of “ionized alkaline water” having any therapeutic effect is beyond absurd. In fact, the term “ionized alkaline water” is scientifically meaningless.

What then does an “ionizer” actually do? The same thing that high school students do in chemistry labs when they stick a couple of electrodes in water and pass a current between them in a classic “electrolysis” experiment. Some of the water molecules break down, forming hydrogen gas at the negative electrode and oxygen at the positive electrode. Electrolysis, however, cannot be carried out with pure water since water cannot conduct an electric current. For electrolysis to proceed, some sort of charged species must be dissolved in the water. Atoms, or groups of atoms that bear a charge are called ions. Tap water contains a variety of dissolved ions such as calcium, magnesium, sodium, bicarbonate or chloride, so it is amenable to electrolysis.

As water molecules break down at the negative electrode to release hydrogen gas, they leave behind negative hydroxide ions. This is what makes a solution “alkaline.” Basically, what this means is that as electrolysis proceeds, a dilute solution of sodium hydroxide (negative ions are always paired with positive ones) is produced around the negative electrode and can be drawn off as “alkaline” or “ionized” water. But you don’t need an exorbitantly expensive device to produce a dilute sodium hydroxide solution. A couple of pellets of

drain cleaner in a liter of water will do the job. So will a spoonful of baking soda. Of course, these solutions will not produce any medical miracles. But neither will the posh alkaline water.

What this expensive water does produce is a bevy of daft claims. Here is the most popular one: “It is well known in the medical community that an overly acidic body is the root of many common diseases, such as obesity, osteoporosis, diabetes, high blood pressure and more.” Popycock! There is no such thing as an “acidic body.” That, though, doesn’t stop the hucksters from treating it. How? By neutralizing the acidity with their alkaline water. “The alkaline water will restore your body to a healthy alkaline state,” they say. “It counteracts the acidic food you eat and the effects of the harsh elements in your environment in order to bring about the natural balance your body needs. Change your water and change your life.” The only thing you’ll change is your bank balance.

Now, even if there were such a thing as an acidic body, and even if this signaled illness, it could not be countered by drinking alkaline water. To “alkalize the body” one would have to alkalize the blood. But our body maintains the pH of the blood between 7.35-7.45, which is already alkaline. If you were to alkalize it further, you would not have to worry about illness because you would be dead. Don’t worry, though, about alkaline water killing you. Our stomach is strongly acidic and any base that enters is immediately neutralized. The still acidic contents of the stomach then pass into the intestine where they are neutralized by alkaline secretions from the pancreas. So, all of the water we drink ends up being alkaline anyway!

Another seductive claim is that alkaline ionized water is an antioxidant and neutralizes free radicals. This is often demonstrated by immersing an Oxidation-Reduction Potential (ORP) probe into the water and pointing out that the needle moves into the negative millivolt region, while ordinary water shows a positive reading. An ORP probe is useful in determining water quality in a swimming pool but is meaningless for drinking water. The slightest amount of dissolved hydrogen, as you have in alkalized water, will result in a negative reading. This has absolutely no relevance to any effect on the body. Oil may not mix with water, but it seems snake oil surely does.