

Why I Don't Recommend Alkaline Water for Dogs and Cats

This H2O expert answers all your burning questions about the best drinking water for both you and your pet.

Analysis by Dr. Karen Shaw Becker

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STORY AT-A-GLANCE

- Water is essential for life, but many people don't realize just how many impurities and contaminants are in the tap water they give their pets to drink
- Some of the contaminants in the public water supply include pharmaceuticals, pesticides, metals, chlorine, fluoride, chromium-6 and glyphosate
- Carbon water filters (e.g., Brita filters) improve the taste of the water, but don't remove lots of impurities; reverse osmosis produces clean water, but wastes 50% to 75% of the water put into the system
- Long-term use of distilled water can leach important minerals from a pet's body; alkaline water is a bad idea for most dogs and cats, whose urine pH should be slightly acidic
- A good alternative is to put hydrogen in your pet's purified water

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Today, I have a water expert with me, Paul Barattiero. I asked Paul to give us a little background on how he became so passionate and knowledgeable about water.

"That's a good question," he replies. "It all started with my wife many years ago. We've been married 24 years and all during our marriage, she has struggled and suffered with gynecological and thyroid problems, anemia and a number of different things.

So in my journey — I'm a pedorthist [a footwear specialist] by trade, and soon to finish my ND [naturopathic doctor] degree — I treated diabetic foot and ankle problems, and my entire focus was preventing decubitus ulcers [pressure sores] and what-have-you.

During her cycle every month, my wife would be in bed for a week and it was horrible for me as a husband to not be able to do anything, and not understand what was going on. So I was asking everyone, I was doing research; I was trying to understand how to help her. In the process, I read studies about certain types of water, and how they could potentially help. So my journey of understanding water was really to help my wife."

Why Water Is Crucial to Life

"Three quarters of our body is water," Paul explains. "So just like taking poison, if you were to take a rat poison into your body, no one would be surprised if you developed serious issues from that chemical going into your body."

People think of water as what you wash your car with, what you take a shower with, they don't really think about the chemical composition. They don't really think of the true purpose of water in our bodies, and they don't realize that if three quarters of our body is made up of water, there are some pretty critical roles water plays in the body.

I don't think people get it, what the true role of water is in the body. Every system in the body needs water, for example, digestion. Blood is 93% water. Bone is 13% water.

When we start looking at the entire body from an energy perspective — from a chemical and nutritional perspective — water plays a role in every single one of these systems from digestion to elimination. Effectively, if we don't have hydration, we'll have respiratory issues, we'll have digestion issues, we'll have elimination issues.

Chronic dehydration can cause joint issues, and simply drinking water can be therapeutic. People don't understand the importance of water. They've forgotten."

Contaminants in Public Water Sources

Animals have acute olfactory senses, and in the wild they're able to pick up contaminants in water and know what water sources to avoid. However, in our homes, we fill our pets' water bowls with tap water and they either have to drink what we put down or risk becoming **dehydrated**. I asked Paul to talk about some of the contaminants present in public water sources.

"There are drugs," he answers. "People foolishly dump expired drugs into their toilet, because they were taught that that's the magic place, that whatever you put in there magically disappears and goes away to nowhere. And then there are also the medications the body doesn't utilize, which are eliminated through urination and defecation, and goes into the water system as well."

In a recent study, 27 water municipalities found pharmaceuticals in the water supply, typically blood pressure medication, because that's the number one used in America. So the drugs people are taking are going into the water supply, and the municipalities aren't doing anything to remove them, because the EPA does not demand that they do so.

And we can say the drugs are present in tiny amounts, but isn't that how homeopathics work? We know there's some effect on the body. I don't want drugs in my water, and I don't want them in my dog Xander's water.

The other thing I'd be very concerned about is metals and pesticides," Paul continues. "Pesticides are very damaging to gut function, and that can be very harmful to animals. Typically, animals need glandular meats. They need bacteria from other animals so they have appropriate microbiomes. If we destroy their microbiome, they're going to have the same issues as I would have if I destroyed my microbiome.

There's chlorine, fluoride, and chromium-6. There's glyphosate — that's a big one. All of these things and more are why I would never consume water that was not filtered, especially municipal water. And you have to filter it with an appropriate filter, not just a little Brita pitcher or something like that. It has carbon, that's good for taste, but we've got to get deeper than taste, and actually get these things out of the water."

Pros and Cons of Carbon Filters

I tell people to buy the best water filtration they can afford, and for many people, that means going to their local Wal-Mart or big box store and buying a Brita pitcher and filters. So I asked Paul to talk about carbon filter pitchers and what impurities they remove.

"They remove the chlorine taste," he explains. "They convert chlorine into chloride, so you're not really removing chlorine. You're just turning it into something beneficial to the body. Carbon actually is quite an efficient media, and it's very good. You can remove things like paint thinners, you can remove VOCs, you can remove some metals depending on the type of carbon.

There's a carbon block and a granular activated carbon (GAC). There are also carbons specifically engineered for metal removal and pesticide removal. You can have activated carbons. There are all kinds of carbon. So when we say carbon, we really need to educate people properly on what type of carbons there are.

Carbon sourced from coconut husks is the most effective. Also, in our filtration system we put KDF 55 in combination with carbon, because it increases the life of the carbon by six times. It gives the carbon the ability to work much longer than it would naturally.

So all of these things have to be taken into consideration, but basically carbon in a Brita pitcher would be used for taste, turbidity, and things like that. Very basic, and yeah on their box they're going to tell you, these are the things it is designed for and it's basically taste."

Paul goes on to explain that carbon filters like the ones used with Brita pitchers don't remove fluoride and few if any pesticides or heavy metals. They also don't remove chloramines, which are what you get when you add ammonia to chlorine to make it last longer. Carbon filters are used primarily to improve the taste of water.

Reverse Osmosis Filtration Systems

Next I asked Paul about reverse osmosis water filtration systems and what they take care of above and beyond carbon filters.

"That's a far more robust filtration system," he explains. "Reverse osmosis basically has a tiny membrane, and the water is forced through this membrane. There are positives and negatives. Reverse osmosis is a very robust filter, you're going to get down to 0.0001 micron, and so you've removed all metals, pesticides, and fluoride — not 100%, but most of it. You've removed the minerals in the water.

The downside to reverse osmosis is you lose anywhere from 50% to 75% of the original water amount, and so you're only keeping 25% to 50% of the water after filtration. There's a lot of water wasted, and in places like California and other areas where there are water supply issues, some people have a moral objection to it. But reverse osmosis water is clean water.

It's going to filter out anywhere from 85% to 90% of the minerals, so you're left with about 10% to 15% of the minerals that were in the water. It also takes a long time for typical reverse osmosis systems to fill.

The systems have tanks that are typically anywhere from 3 to 5 gallons, and when you cut that in half, your usable water is about 1.5 to 2.5 gallons. This should be fine for most households, but if you have guests and need more water, you'll be waiting for hours, so that's the downside.

Another option is a whole house filtration system, or a water softener. A lot of people use water softeners, other people use whole house filtration systems. Whole house filtration systems should use multiple medias to remove toxins from the water. They don't go deep enough to remove minerals, but the better systems remove fluoride, pesticides, pharmaceuticals, and metals. You do have to do your research, because these systems vary in quality."

Distilled Water

Next, I asked Paul about the specifics of distilled water.

"Distilling is interesting because it was thought for many years to be the most pure water," he replies. "You're heating water to a boil, evaporating the moisture, and then it comes back down mimicking rain, which of course sounds wonderful. That's what the earth does, that's how the earth cycles water, so you end up with pure water coming over the other side.

You've left 100% of the minerals and the particulates or what we call TDS, total dissolved solids, on one side and you have to clean that pretty often. It was believed the water coming across the other side was pure, but what we're finding is that a lot of organic volatile chemicals actually go with the steam right over.

So when we start testing that distilled water, it's not quite as clean as we think from a chemical perspective, because there are VOCs that follow the air and the steam right back over into the water. Distilled water is even more difficult than reverse osmosis, because you're making it in small batches, and you have to clean the heating mechanism of all the calcium and minerals that build up."

I like to use distilled water with pets as a means of periodic detoxification. What I have seen longer term, though, is it seems to have a profound mineral leaching effect that could be detrimental over time. Many animals are already mineral deficient, and I've seen some negative consequences with animals' ability to replenish their minerals when

they're on distilled water longer than let's say, a year. I asked Paul if this also happens with people.

"Well, I wouldn't say the water is depleting minerals," he replies. "I think minerals are depleted in most people, because the body is harvesting calcium out of the bones to regulate pH internally."

That's the way the body does it — it will harvest calcium to buffer itself, so that it can maintain pH. The problem is if there's no calcium in the water you're drinking, you don't have a supply of calcium back, and so there is a depleting process. It's not necessarily that the water is taking it, but the water is not giving any back."

The Interesting History of Alkaline Water

Several years ago, clients started asking me about alkaline water for their dogs and cats. They were drinking it themselves and wondered if it would benefit their pets. I asked Paul for his thoughts on the alkaline water trend.

"This I'm very passionate about," he answers, "because this is my world. Fifteen years ago, I got into alkaline water and began marketing machines, because even though I did not agree from a chemistry perspective that the pH was helping, something was going on and I needed to figure out what it was."

So when I talked earlier about helping my wife with her health issues, that was the first technology I tried, and it did initially help her. But people promote these systems as a miracle cure — just drink this and all your problems will go away. That's not true based on pH."

Really what happened, if we go back to 1800 when Anthony Carlisle, Dr. Carlisle in London developed electrolysis of water, what he was doing was creating a hydrogen generator because he had learned that hydrogen had antioxidant properties in the body and it was very profound."

But we shouldn't say that hydrogen is a powerful antioxidant. Everyone wants to use those words, but it's actually a weakened oxidant. What it does very well is it reacts with reactive oxygen species in the body, which are the free radicals that destroy cell function."

Getting back to Dr. Carlisle, he developed electrolysis of water so that he could harvest hydrogen gas and put it in water so it could help people. He did a great thing and did nothing else with it once he did that. I'm sure he used it for himself and so many people, but nothing else happened with it in society."

Then in 1930 a doctor in Japan wondered, 'Hey, if I use this technology of electrolysis, what will it do for rice cultivation?' So he began a process in 1930 to look at rice cultivation, and the result was more rice, better grains, better quality, less irrigation, and so the water did more for the rice fields. That was great. After that, he went into plant studies and had success as well."

Then in 1950, he began human trials to see what would this water would do for people. The human trials lasted 15 years, and they proved that these waters out of an electrolysis machine stopped improper digestion, improper fermentation in the gut, and basically restored gut function."

That's why the country of Japan in 1965 made these machines a medical device, and they flooded the market. Everyone went crazy — hospitals, doctors, everyone started drinking alkaline water.

The problem was, they had not discovered what the mechanism of healing was. They made an assumption that it was the pH of the water, and they began teaching it as such, but that was because they didn't understand the hydrogen gas was dissolved in the water. In those early days, they were using what's called a batch ionizer, which basically has one cathode and one anode.

They would run the water and let it sit there for half an hour. So you're creating hydrogen and because you're doing it for half an hour, you definitely have hydrogen gas dissolved because you have contact time, you have surface area, and you're putting hydrogen gas in there.

For the sake of convenience, years later they started making flow-through machines. There are very different principles that govern whether or not you can actually dissolve hydrogen gas in the water when it's flowing through at half a gallon a minute.

So this was where the problem developed. They used the electrodes, and they would use multiple electrodes, but within a couple of weeks, you would get calcium buildup on the cathode. So when you get calcium buildup, you're no longer going to dissolve hydrogen.

You would at that point have alkaline water because you have hydroxides OH^- because you've moved an H^+ over to make acid water, and you have the OH^- on the other side to make what they're calling alkaline.

There's no real benefit to the body to consume water that's just a higher pH, because the stomach will buffer it, and it will go right into the duodenum, because the pyloric valve will dump it quickly in there. So there's really not many benefits, but people received benefits with the early machines, the batch ionizers.

People were receiving benefits when they bought the brand new machines that were flow-through, because for [two] or [three] weeks they'd have hydrogen that would restore gut function, help with blood sugars, and help with blood pressure.

But after [two] or [three] weeks they were no longer getting the same benefits. When I got into the industry, I kept hearing people say, 'I had tremendous benefits at the beginning, but I don't feel anything now and it's not helping me and my issues have come back.'

I didn't agree with the pH part of this, so what are we missing? It wasn't until 2007 or 2008 that I asked a PhD chemist who worked for me, 'What do you think about this mess? Here are all the reports and studies the alkaline water industry is giving people to prove it helps. Can you read all this? You have a PhD in water chemistry, so can you tell me if this is all hogwash, which I believe it is?'

He came back the next day and said, 'I read everything you gave me and you're right. Everything is nonsense, all the chemistry is completely opposite of what happens in real life.' He said the only thing I could find that really explains is this one study, and it talks about dissolved hydrogen having ROS scavenging capability.

I'm telling you as soon as he said that, it just resonated through my whole body. Immediately I knew it was truth, I knew that hydrogen was the answer, and that started my entire shift. Once I understood that hydrogen gas was the answer, I started selling it.

I'm extremely passionate now about getting water into people that has hydrogen gas in it, regardless of the pH, because that's unimportant to the body and actually in some cases can harm people. It's all about neutral pH and hydrogen."

Alkaline Water Is Typically NOT a Good Idea for Dogs and Cats

Years ago when people started asking me about alkaline water for pets, I would explain that I couldn't predict what would happen, but that they needed to monitor the **urine pH of their animals**. I have had experiences where it wasn't necessarily beneficial to alkalize a dog or a cat. Kitties are obligate carnivores, and dogs are scavenging or opportunistic carnivores, and their urine and saliva pH are naturally slightly acidic, not alkaline.

I saw cats drinking alkaline water whose urine pH crept up and they developed struvite crystals, magnesium ammonium phosphate stones, bladder stones, kidney stones and so on.

I was seeing a whole lot more kidney stones in dogs and cats drinking alkaline water, so I started telling people that if you're going to give your pet alkaline water, you should have pH test strips at home, and the minute that pH goes up to seven, you need to discontinue alkaline water. That was my standard advice. I tried to do my due diligence in preventing kidney and bladder issues.

"Now that's perfect advice," says Paul, "because humans, and I'm assuming it's the same for pets, should have a urine pH of around 6.4. That's effectively what's considered healthy. You can have a range of 6.3 to 6.6, but the reality is 6.4 is your ideal.

That's just telling you that your body is going to assimilate minerals, you're going to have proper kidney function, and your lymphatic system can convert foods into energy. Blood pH we don't need to worry about, but when it comes to urine and saliva, those are indicators of our internal organ function.

There's too much talking about alkaline, alkaline, alkaline, and it has become a craze. I think it can be harmful for a lot of people, and there's Herxheimer effects in some people, about 15% of the population who can start having issues, and they're told it's a detox symptom, but it's not. The body is thrown out of balance.

I think we should focus on neutral pH roughly in that range. The hydrogen gas is always what has benefitted people, and now today we have over 700 studies showing all of these things people were saying was happening, it's all from hydrogen gas, not the pH water. So it's a totally different science."

Getting Hydrogen Into Your Pet's Water Bowl

I asked Paul how pet parents can get hydrogen into their dog's and cat's water.

"There's several ways," he replies. "We have tablets that you can drop in the water, but what I recommend is a machine I developed that makes neutral pH water with dissolved hydrogen in it. The only thing we need to make sure we tell pet owners is, they're putting it in a bowl. It's not like you and I, where we get a glass, and we're going to drink a 16[-] to 20-ounce glass in the next 30 minutes, and then get a fresh glass the next time we're thirsty.

So every time you get a fresh glass, here comes hydrogen into the body. Here comes hydrogen that goes right into the gut and puts anaerobic microflora in the gut, which starts getting rid of hydroxyl radicals. You've got ghrelin secretions that go to the brain for cognitive improvement. There are many things that begin to happen immediately.

With a pet, you typically put down a bowl of water for them, and it sits there, often until it's finally empty. It's horrible because you have bacteria on the bottom of the bowl. The number one thing I have to say is, keep the water fresh. Cats like running water. But dogs, if you're going to give them a bowl, freshen it often."

Twice a day is what I tell dog parents.

"Here's the thing," Paul continues. "What we do for our dog is we give him the healthiest meat that doesn't have a bunch of junk in it. I'll tell you, he's a healthy animal at [9] years old. What we do for water, and what we need to understand, the reason I'm going into this is hydrogen gas is number one on the periodic table because it is so tiny. Being tiny allows it to go out of dissolved state very easily, very quickly.

In a glass of water we have about [five] hours in which to drink it before the hydrogen is gone. In a pet's water bowl, you have about an inch and a half, [2] inches of water typically, and you have a large surface area and shallow water. So the hydrogen escapes faster — I would say within [two] hours. If they want to give their beautiful pet water, give the hydrogen water and then the animal is going to drink. Then within a couple hours, you could change it or you don't have to.

What we need to understand is as long as we're getting intermittent exposure to hydrogen even twice a day — and I love your idea of changing the water twice a day — if they change the water twice a day, that's two times a day the pet is going to get hydrogen. That's perfect.

You don't need a constant supply, you don't have to have it every [five] minutes, but if we have intermittent exposure at least [two] or [three] times a day, that's where the body is going to use that hydrogen and it's a perfect solution.

It's very inexpensive because when people have the machine, it's going to cost them 15 cents a gallon to process the water, and obviously you're not putting a gallon of water down for your pets. This is how simple it is, the whole family can experience the benefits not buying some precious water bottle or some tablets, it's just much more efficient in cost and it's a much better choice.

Also, the filtration that's in there is going to remove the pesticides, and the pharmaceuticals, and the VOCs, the chromium, all these things will be removed so that your pet is not ingesting all those toxins."

Are There Contraindications?

This is great information, and what's interesting is that when you offer dogs and cats a bowl of water, they instinctively know to drink it while it's fresh. So what's great is if you put down hydrogen-enriched water, they're going to want to drink it at that time, and meet their water requirements for the day.

It's a beneficial way to detoxify their systems, which is also wonderful. I asked Paul if there are any downsides, medical conditions or other concerns with drinking too much hydrogen water.

"No, there are no contraindications," he answered. "What we really need to understand is that our bodies and our pets' bodies were designed to produce hydrogen. We all have hydrogen generators built into us in our gut.

So when we process fiber, when we process [short-chain] fatty acids, [medium-chain] fatty acids, when we have the right E-coli strains in the gut and we're converting foods, then we end up with hydrogen. We as humans can produce 10 to 12 liters per day of hydrogen, if our diet is correct and our gut biome is correct.

The same is true for animals, they can produce hydrogen and the hydrogen goes through the intestinal tract into the body, and reduces oxidation. This is one of the primary roles of hydrogen — to reduce hydroxyl radicals, which are in the mitochondrial respiratory chain.

Anytime any animal is producing energy, then you have hydroxyl radicals that are a byproduct of converting oxygen into fuel. So what happens is that the HO, which is the hydroxyl radical, when we put additional H, it converts to water.

So we're taking a hydroxyl radical that is the most cytotoxic or cell damaging free radical in the body, and we're converting it into a water molecule in the cells of the body, and then it just goes out through normal elimination. The other thing that we need to understand is when you drink hydrogen enriched water, it's only going to be in your body for an hour to two, and whatever your body doesn't use, you breathe out when you exhale.

That hydrogen doesn't just sit in there, what is not used is gone. That's why two times a day, once a day is plenty and fine because you're going to get rid of it within that hour or two, after all the scavenging occurs. The hydrogen is so tiny, it goes through the blood-brain barrier, it goes to joints, it goes everywhere in the body very rapidly because it's so tiny.

Some people get crazy when they learn about new technologies, and they think more is better. This isn't always true — sometimes balance is better. We don't need to get crazy. We just need to supply it to the body so that the body can do what it's designed to do.

There is nothing toxic, and we know that from deep-sea divers. How many years have divers used hydrogen to stop the bends? So we know that breathing hydrogen is not going to harm us, and neither will it harm us in drinking water. We haven't had a case of contraindication."

This is very helpful information for all of us to have, because there have been some negative aspects to alkaline water, but what Paul has done today is really help clarify and explain that it's not the alkalinity. It's not the pH issue in water that is the "magic" that people have seen, it really is the hydrogen.

I think it's really important for people to think about cleaning up their pet's water supply, but alkalizing is not where the magic comes in. It comes from adding additional hydrogen. If you're looking for a natural way to help your pet's body scavenge free radicals, it would be hydrogen.

I appreciate Paul taking time from his day to help clarify the alkaline myth. It's an important topic because it's one that a lot of pet parents have questions about, and those who've jumped on the bandwagon may have inadvertently caused some medical issues in their dog or cat.
