Salt Your Way To Health - Dr. David Brownstein

STORY AT-A-GLANCE

- Most in the wellness industry will tell you to drink lots of water and limit your salt intake, but that is the opposite of what you want to do
- Not only do these strategies not improve your hydration, but they may also cause many of the issues they're intended to prevent, including headaches, skin problems, detox problems, decreased immune function and lower metabolism
- By limiting salt, you may initially lower your blood pressure, but it comes at a cost. In the long run, it worsens dehydration and ultimately results in higher blood pressure
- Drinking excess water can mimic having insufficient sodium, ultimately aggravating dehydration and high blood pressure
- On a cellular level, hydration allows the cells to maintain their proper structure. But water is not the only factor in hydration. The ratios of electrolytes inside and outside the cell also play a role, as does the protein structure of the cell, and the amount of energy the cell has available
- The same strategies that optimize your metabolism and cellular energy production will also ameliorate high blood pressure by relaxing blood vessels and calming the stress response drinking water is not by itself a strategy that will guarantee hydration.

There's More to Hydration Than Water

On a cellular level, hydration allows the cells to maintain their proper structure. But water is not the only factor in hydration. The ratios of electrolytes inside and outside the cell also play a role, as does the protein structure of the cell, and the amount of energy the cell has available. All these factors interact to maintain hydration of the cell.

Electrolytes are positive or negative ions of specific minerals. The primary intracellular electrolyte is potassium, and the main extracellular electrolyte is sodium.

Other important electrolytes include magnesium and calcium. These four interact with each other in various ways. Calcium and magnesium, for example, are antagonistic toward each other, as are sodium and potassium, so they need to be properly balanced.

"The interaction of water with the electrolytes and proteins [in the cell membrane] gives the water structure, [it] creates a gel state [editors note: structured water or EZ water, which stores energy and strengthen mitochondria2],"

Fave explains.

"So ... you need not only water, you need electrolytes and proteins as well. And then ... you need energy to maintain the proper concentration gradients or maintain the proper ratios of electrolytes inside and outside the cell.

In the plasma membrane theory, you need a proper amount of ATP, which is produced by oxidative phosphorylation, mostly, in order to run the membrane-based pumps that control the gradients inside and outside the cell.

In the gel state theory, or the gel water theory, you need proper energy production of the cell to maintain a specific charge of the protein structure and the water in general, so that they interact appropriately and maintain the proper shape.

In both theories, when you have a breakdown of energy production, you get swelling of the cell, and that's because the cell has been unable to maintain the proper gradients between electrolytes from the inside to the outside, or in the gel state theory, just the proper electrolyte interaction with the water and structure.

So now we have a much bigger picture, where to maintain proper tissue and cellular hydration you need electrolytes. You need your water first of all but you also need electrolytes, and you need the proper proteins and amino acids, and the proper cellular energy metabolism ... Just dumping water into the system doesn't solve the problem if you have dehydration.

You have a whole bunch of other requirements, and when you start taking in an excess amount of water relative to what your body actually needs, the process of eliminating that water is a bit wasteful to some of those other requirements."

Structured Water Is Not Plain Water

EZ water or structured water is a gel-like type of negatively charged water that forms inside your cells. It's not the same as the water you drink. EZ water acts like a charged battery in that it both stores and delivers energy.

But for EZ water to form, energy is also required. So, you may have enough water in the cell, but if there's not enough energy, it won't be structured properly and will cause the cell to swell.

Basically, the severe swelling (edema) you sometimes see in cardiac patients or patients receiving intravenous fluids for an infection is likely due to a severe energy deficit, an electrolyte deficit, or both. Other contributors to edema and dehydration include eating high amounts of polyunsaturated fats (PUFAs) and having a high endotoxin load in your gut.

An important point that Feldman and Fave do not discuss is that EZ water also forms when you expose water to infrared light, so an easy way to encourage the formation of EZ water in your body is to get regular sun exposure.

Salt Deficit Promotes Dehydration and High Blood Pressure

Water and salt go together. Salt will attract water, so having an appropriate amount of salt in your blood allows you to maintain an appropriate blood volume, which in turn allows for proper circulation. When you don't have enough salt (sodium) in your blood, your blood volume is reduced, which impedes your ability to transport waste.

As explained in the podcast, the idea behind low-sodium recommendations is that if you take in more salt, the sodium level in your blood will go up, which will increase your blood volume, thereby causing your blood pressure to rise. However, this isn't how things work, because your body has an adaptation system.

By limiting salt, you may initially lower your blood pressure, but it comes at a cost. In the long run, it worsens dehydration and ultimately results in higher blood pressure.

So, when your salt intake is very low, your body responds to the decrease in blood volume by preventing your kidneys from excreting sodium. By retaining sodium, it helps increase your blood volume. It also increases vasoconstriction (narrowing of the blood vessels) to bring the blood pressure back up.

In short, by limiting salt, you may initially lower your blood pressure, but it comes at a cost. In the long run, it worsens dehydration and ultimately results in higher blood pressure, which is what you were trying to address in the first place.

And, by forcing your kidneys to retain sodium, they will excrete potassium and magnesium instead. Again, these are the primary intracellular electrolytes and are required for hydration. They're also important for relaxation.

Low magnesium and potassium also leads to further vasoconstriction and increased sympathetic nervous system activity. Your sympathetic nervous system is the gas pedal that speeds up the systems involved in the fight or flight response, so it causes stress.

Norepinephrine is also released when sodium levels are low, which also fuels the stress response. The stress response, in turn, ratchets up blood pressure. So, in the long run, too little salt promotes both dehydration and high blood pressure.

The Importance of Proper Sodium-to-Potassium Ratio

If you notice that your blood pressure rises when you add more salt, try increasing your salt intake more slowly. Typically, the rise in blood pressure is a temporary artifact and will decrease once your body adapts. If it doesn't, it could be that you don't have enough of the other electrolytes (calcium, potassium and magnesium). Your sodium-to-potassium ratio is particularly important.

The National Academies of Sciences, Engineering, and Medicine (formerly Institute of Medicine) recommends 4,700 mg per day for people over the age of 14,3 and it's generally recommended that you eat five times more potassium than sodium.

If you're unsure of your sodium and potassium intake, use chronometer.com/mercola. This nutrient tracker allows you to enter foods and then calculates the ratios automatically.

Potassium helps lower your blood pressure by relaxing the walls of your arteries, and according to Harvard Health,4 many people with high systolic blood pressure can successfully lower it simply by increasing their potassium intake.

In my view the best way to increase your potassium is by eating ripe fruit. I typically get around 3,000 mg from watermelon, orange juice and tangerines, and another 2,000 mg from other sources.

For a more complete list of potassium-rich foods, see DietaryGuidelines.gov's "Food Sources of Potassium" page.5 Taking potassium supplements is not a good strategy and simply will not provide you with the benefits you seek.

Too Much Water Mimics Salt Deficiency

As explained in the podcast, since water dilutes salt, drinking too much water can mimic having insufficient sodium. It causes the same stress response that results in the loss of potassium and magnesium, the same cellular swelling, inhibition of cellular energy production and, ultimately, dehydration!

On top of that, while the conventional claim is that water increases metabolism, research has shown that the energy expenditure is caused by activating your stress systems, including your sympathetic nervous system. So the increase in energy expenditure comes at a severe cost. It just increases stress.

Research has also shown that when you drink water that has the same concentration of salt as your blood (normal saline), you do not activate the stress response. This suggests the increase in energy expenditure from drinking plain water is due to the dilution of sodium, Feldman notes.

Key Take-Away

The take-away from all this is that it's important to get enough salt in your diet, and much better to drink water that contains electrolytes than plain water. How can you make sure you're getting enough salt and water without going overboard in either direction?

One of the simplest and best ways to do that is to listen to your thirst and salt cravings. Drink when you're thirsty and salt your food to taste. Don't force yourself to drink a predetermined amount of water "just because."

"There's a misconception that by the time you're thirsty, you're already too dehydrated," Feldman says, "and that's not the case. The research has shown that that our sensitivity to thirst and hydration is actually pretty spot-on, it's pretty sensitive.

So, we know that ... we get thirsty ahead of time. We're able to tell within a pretty small range ... if we're getting slightly dehydrated or if we need more liquid, which of course makes sense.

That's the whole point of thirst — to tell us that we need more liquid. It wouldn't make sense if that happens too late ... This is shown in animals as well, that they have very sensitive thirst signals that allows them to stay adequately hydrated.

The same is true for salt. Our signals that tell us how much salt we need are pretty sensitive ... so if you're craving salt ... that might mean that you need more salt."

General Recommendations to Optimize Hydration and Salt Intake

Feldman points out that while conventional recommendations say to limit salt intake to 1,500 or 2,000 milligrams or less, research has shown that this range is associated with an increased risk of cardiovascular disease and all-cause mortality compared to higher ranges of 4,000 to 6,000 mg.

"The the point being that if we were to eat a lot more salt than we're told to eat, we'd actually be much better off," Feldman says.

"And as far as thirst goes, this brings us to the best food and drink options for hydration. We don't want to just drink plain water. A lot of the other places that we could get liquid from have a lot more of the things that we would need to actually stay hydrated."

Examples offered by Fave include mineral water, tea with honey, fruit juice, coconut water, milk, fruit and vegetable smoothies, cooked vegetables and ripe fruit. These contain minerals, vitamins and sugars that aid hydration better than plain water. When you do drink plain water, make sure it's well-filtered to avoid water contaminants like fluoride, chlorine and disinfection byproducts (DBPs).

Also, in cases where you need to consume large amounts of water because you're sweating profusely, consider adding electrolytes to it. A super-simple and extremely cost-effective way to do that is to dissolve a small pinch of Himalayan salt into your water. A small amount of lemon or lime juice will improve the taste.

When it comes to salt, steer clear of iodized highly processed table salt, as it contains anticaking agents and can contain undesirable contaminants, including plastic, as well. Instead, make sure you're using a natural unprocessed salt. Mediterranean sea salt, Celtic sea salt and Himalayan pink salt are good options. Then, listen to your cravings and salt your food to taste.

Optimizing Metabolism Is Important if You Have Hypertension

Other factors that affect hydration and blood pressure, aside from water and salt intake, include making sure you're getting enough of the other three electrolytes (potassium, calcium and magnesium) and optimizing your cellular energy production.

"For people who are concerned about their blood pressure, these are definitely important things to consider," Feldman says.

"Factors that affect energy production play a pretty major role in blood pressure, so that means making sure you're getting the right types of fats — avoiding PUFAs and favoring the more saturated ones — getting enough protein, getting enough carbs, making sure you're digesting your food well and don't have a lot of endotoxin production ...

If you're having hypertensive issues, in general I would say there's a lot more going on than you're just eating too much salt. I would say you either have an endotoxin issue, some vascular damage from oxidized polyunsaturated fats, maybe some type of latent infection, maybe you have an overactive adrenergic system ... from some sort of electrolyte imbalance or some type of chronic stressful situation, or a lack of nutrients ...

Another point to consider ... Hypertension is ... an excessive amount of tension ... The blood vessels are being contracted to an excessive amount and that's what leads to the high blood pressure. Well, all of the things that support energy production work to to release that tension."