

Beat Fatigue and Heal Your Body Through Optimum Hydration

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✓ Fact Checked

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STORY AT-A-GLANCE

- › Water exists as liquid, ice, vapor and gel, the latter of which is known as structured water. This is the kind of water found inside your body's cells
- › A key component of proper hydration is getting the water into the cell, and one of the most effective ways of doing that is to eat your water in the form of plant foods. Chia seeds, aloe vera and cactus gels are also excellent hydrators
- › You can also structure the water already inside your body by exposing your bare skin to infrared and ultraviolet radiation such as sunlight on a regular basis. This is a superior strategy to drinking structured water
- › Your hydration status can be loosely ascertained by looking at the color of your urine, your frequency of urination and the amount. Two of the first signs of dehydration, however, are brain fog and afternoon fatigue
- › One way to avoid nighttime bathroom trips is to "frontload," meaning drinking a majority of your water in the morning, and then avoiding drinking anything for a few hours before bed

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Dr. Dana Cohen has been an internist (a doctor of internal medicine) for the past 20 years, with a focus on integrative or functional medicine. She had the distinction of

working with low-carb pioneer Dr. Robert Atkins right out of residency, which completely changed her way of thinking about medicine.

In this interview, we discuss the importance of hydration, the topic of her book, "[Quench: Beat Fatigue, Drop Weight, and Heal Your Body Through the New Science of Optimum Hydration](#)."

"I have been searching for my book for 20 years," she says. "My coauthor, Gina Bria, came in to see me one day. She started the Hydration Foundation. She's a cultural anthropologist. She did her research on how desert communities hydrate. They certainly don't drink eight glasses of water a day! ...

She blew my mind. She started to tell me about the work [professor of bioengineering] Gerald Pollack was doing on the fourth phase of water ... and how desert communities hydrate. They hydrate via gel. Even desert plants, that's how they hydrate.

We had so much in common. Her mother was in a nursing home, suffering from dehydration. My mother was in a nursing home with Alzheimer's. I looked at her and said, 'Do you want to write this book?'

I know, as a clinician, this is something that all of my patients can benefit from – from my athletes to my really sick patients. I think it affects everybody. We're not talking about overhydration, where you need intravenous fluids.

We're talking about this low-grade, subclinical dehydration that affects almost all of us at some point, almost every day. That was three and a half years ago. We dove into the research and came up with 'Quench.'"

The Importance of Structured Water

A key component of proper hydration is getting the water into the cell. This is an area where understanding Pollack's fourth phase of water becomes key. We've always known water exists as liquid, ice and vapor. But there's also a gel phase, known as structured

water. A more technical term is exclusion zone (EZ) water. This is the kind of water found inside your body's cells.

"It also happens to be the phase of water that's in plants and found in nature," Cohen says. By getting more of this gel-like water into your body, you're able to hydrate better overall. In this gel phase, water also holds energy, like a battery. Pollack refers to it as H3O2, as it holds extra electrons.

One of the simplest ways of getting this type of water into your body is to eat more leafy green plant foods. "It's actually very simple. There's a lot in the book that's very intuitive," she says. "However, now, the research is really backing up why we should eat our water."

You can also structure the water already inside your body by exposing your bare skin to near-infrared and ultraviolet (UV) radiation, i.e., sunlight, on a regular basis. I believe that's actually a superior strategy to drinking structured water. Cohen agrees, adding:

"The other really interesting thing we're discovering is the idea that we need greens, we need light, and we need water in order to produce energy. What else does that? It's very similar to plants and photosynthesis. We're way more like plants than we ever imagined. UV light is absolutely an important component."

How Can You Tell if You're Dehydrated?

Conventional wisdom says you need to drink eight glasses of water a day. Another, more quantitative way, is to look at the color of your urine, assuming you're not taking vitamin B supplements, specifically riboflavin, which turns your urine a fluorescent yellow.

If your urine is light yellow, you're probably not dehydrated. Dark urine is a sign you need more water. However, just because you have light-colored urine doesn't mean you have necessarily optimized your intracellular water. A third way to assess your hydration status is to keep tabs on how often you urinate.

According to Cohen, you should be urinating about every three hours during the daytime. (At night, your body produces an antidiuretic hormone that suppresses urination.) Your

volume of urine can also offer clues. If scant, you may be dehydrated to some degree, especially if your frequency is also low. Thirst is not a good way to determine your hydration, as most of us have learned to ignore our thirst.

"The truth is if you're thirsty, it's already too late," Cohen says. "You're already way more dehydrated than I would like for you to be. Some other things you'd want to look at are fatigue and brain fog. [They're] probably better signs of chronic, low-grade dehydration than anything.

I think it's a first sign, this afternoon fatigue. Instead of thinking, 'Well, maybe it's my blood sugar,' it's more likely you're probably a little dehydrated. Go for fluids first in the form of green juices or even water with a little sea salt, versus grabbing a candy bar or something. You could also pinch the top of your hand and see if [your skin] falls back nicely."

Frontload Your Water

While antidiuretic hormone levels tend to go down with age, it's still an achievable goal to be fully hydrated and not have your sleep disrupted by frequent bathroom trips. If you're older and have to urinate more than once a night, you would do well to discuss the issue with your doctor.

One way to avoid nighttime bathroom trips is to "frontload," meaning drinking a majority of your water in the morning, and then avoiding drinking anything for a few hours before bed.

"This is how desert people hydrate. They drink most of their water in the morning," Cohen says. "Frontload your water. Add minerals to it in the form of a little pinch of sea salt, maybe a little lemon. Easy stuff you can do in the morning. Stop drinking at a certain time at night. You should be fine and hydrated."

Foods High in Structured Water

We already mentioned plant foods such as leafy greens are a major source of structured water. Another excellent source is [chia seeds](#). When placed in any kind of liquid, they form a gel around them.

"There's this tribe of runners, the Tarahumara tribe from Mexico, that run marathons using chia seeds rather than water to sustain their hydration throughout," Cohen says. Other plants that provide excellent hydration are aloe and cactus gels such as prickly pear. You could add the gel to your smoothie, or swallow it straight.

"The first time I learned about them was when I was staying at a hotel in Arizona. They had infused water with prickly pear. It hydrates you longer. You notice it. I noticed it, because I was in lectures all day at a conference. I felt so much better than when I was in Las Vegas and drinking water all day."

To use chia seeds for hydration, start by grinding them in a coffee grinder. By breaking them up, you create a larger surface area that is then able to create more gel. Cohen suggests adding 1 tablespoon to a smoothie or other beverage, or on top of salad.

"If you grind them, you don't have to let them soak as long. Even just five minutes of soaking, you'll start to see that gel form," she says. "There are also recipes all over the internet for delicious chia puddings that you can mix with coconut water and maybe throw a few blueberries in there. It's a really hydrating dessert."

I typically have 1 tablespoon of chia seeds and flax seeds in my smoothie every day, which have soaked overnight. In addition to making them more palatable and bioavailable, the soaking also helps diminish lectins, which can be inflammatory. When soaking overnight, you also don't need to grind them.

The Benefits of Electrolyte Concentrates

There are also a number of [electrolyte concentrates](#) on the market, which may be valuable. Cohen, however, does not address any products in her book, as it is solely focused on how to get your electrolytes through whole food. That said, a high-quality

concentrate can be useful in some situations, and many rehydration protocols will use them.

I personally alternate between using an electrolyte concentrate and drinking plain water, and my phase angle has improved as a result. The phase angle is a measurement of the bioimpedance of your body and reflects cellular membrane integrity. It's a great measure of overall health.

The device itself is a powerful tool to help you determine your objective hydration status, because when you improve intracellular hydration, you improve your body's ability to conduct and generate electricity.

One of the benefits of electrolytes is that they help draw water inside the cells, so they increase intracellular hydration. It's not something you should be drinking all the time, but alternating it in a few days a month can be beneficial. Just don't reach for the sports drinks sold in your local grocery, as they're loaded with sugar.

For optimal hydration you also need natural salt in your diet. In his book, "The Salt Fix," James DiNicolantonio, who holds a doctorate of pharmacy, goes into the details of why you need salt. Provided it's healthy unprocessed salt such as [Himalayan salt](#) or sea salt, having 6 to 8 grams a day is likely to be beneficial for most, and will help maintain a healthy electrolyte balance.

The Importance of Filtering Your Water

In general, it's difficult to find really pure water unless you're filtering your tap water. I requested a water analysis from my local water authority. First, they sent a five-page PDF with measurements of four contaminants, one of which was fluoride.

I then asked for the full analysis, which resulted in my receiving a 60-page report that included literally hundreds of chemicals, including 2,4-D, dioxin and glyphosate at 4,200 parts per trillion. Unfortunately, there's no guarantee bottled water will be much better.

Aside from the issues of plastic pollution, [microplastic contamination](#), and the problem with plastic chemicals leaching into the water, bottled water is often just as contaminated with chemicals as your tap water. Rarely does bottled water undergo superior filtration, and bottled water regulations are actually laxer than those for municipal tap water.

"In the book, we don't even talk about filtering our water, because that's not our focus," Cohen says. "However, we recommend people to go to [EnvironmentalWorkingGroup.com](#). They have a list of filters¹ based on what you can afford. There's a really nice list there.

And then that's the other thing. If you are filtering your water, especially something like reverse osmosis, which is sort of the gold standard now of filtering our water, you do need to replace some of those minerals and electrolytes. That's also where some of those [electrolyte] replacements would fit in nicely.

FindASpring.com is also a great website. It's asking a lot of somebody to bring bottles to a spring, but I think that if you're looking for an answer, that's a great answer. Go and bottle your own water and bring it home with you and find some nice sort of good containers to do that in."

It's important to realize that reverse osmosis also destructures the water, making it necessary to restructure it again. But even more problematic is that if you have a holding tank, heterotrophic bacteria can start to grow in it, which can be problematic if you have health problems.

How Movement Affects Hydration

The second half of hydration involves physical movement. The short video above shows living fascia recorded by Dr. Jean-Claude Guimberteau, a French surgeon, by placing an electron microscope camera under the skin. Prior to that, we've only ever seen the fascia of dried, desiccated cadavers. Cohen explains:

"What we realized ... is that fascia acts as a hydraulic pump. It moves fluid through your body. We've only ever thought that fluid is moved via blood and lymph. Now we know that fascia moves fluid. It also moves electricity. The idea that you have to move your joints to lubricate them [makes sense] and now we understand why.

And also, the idea of sitting all day – you're literally squelching fluid from moving through your body by sitting. So, this is yet another reason why we need to get up and move around every so often. Movement is the second half of hydration. We need to eat our water via plants ... make more gel water in our bodies ... and then you need to move it around.

It could be done by very simple sort of micromovements that everybody can do. Basically, your head can act as a hydraulic pump to get that fluid in and out of your brain. When you stop to think about it, it's a little mind-blowing. It's instinctual.

But, wow, that's a whole new paradigm to think about – that fascia is a movement system, and that there's this new 'movement phase' of water. There are some very interesting new discoveries ... I was shocked at how complex it was when I started to look at this research. We are nowhere near where we need to be in this research of water."

Hydration Affects Your Ability to Detoxify

In my view, hydration is truly one of the foundation pillars of health. And as you can see, it's not just about drinking water. It's actually a rather complex topic. For example, we all know exercise is good for you, but very few appreciate that the movement of water around your tissues is one of the reasons why.

As noted by Cohen, hydration is also not just about the input. You need to be properly hydrated in order to detoxify and get rid of waste via sweat, stool and urine, so the

hydration cycle also involves output. In today's toxic world, it would be a rare individual that does not need to detoxify on a regular basis to protect their health.

"Once again, being properly hydrated is the first step to any kind of program that you're going to take on, whether it be a new diet or a new detoxification [protocol]. If you're not optimally hydrated, it's not going to work. It's the cornerstone of health. It's the baseline of all homeostasis in our body, all balance of our cells ...

The cornerstone of the book is green smoothies. I differentiate that smoothies are basically macerated or blended vegetables, not necessarily yogurt or protein – just blended vegetables with water, maybe a little chia if you like [and] ginger, lemon, a little sea salt."

I used to recommend juicing, and I still think juicing has its place, but I believe smoothies are indeed better, primarily because you're consuming the whole food, including the vegetable fiber, which is particularly beneficial for health. It nourishes beneficial bacteria in your gut, which in turn break the fiber down into short-chain fatty acids.

More Information

To learn more, be sure to pick up a copy of "[Quench: Beat Fatigue, Drop Weight, and Heal Your Body Through the New Science of Optimum Hydration](#)." In addition to smoothie recipes, it also details a simple five-day program that will help you achieve optimal hydration. "You'll feel it physically," Cohen says. "It's a simple five-day plan that includes micromovements, smoothies, hydrating foods. It's really for everyone, from the athlete to the very sick fibromyalgia person."

Sources and References

- ¹ [EWG.org Water Filter Guide](#)