Hydrogen Water Explained: What Your Kidneys Need to Know Transcript

(Transcripts are generated by AI and may contain errors)

Introduction to Hydrogen Water

Did you know that the smallest molecule in the universe might have the power to travel everywhere in your body, even past the blood brain barrier and potentially protect your kidneys from oxidative damage?

This is Doctor Talks. Today we are diving into the science of hydrogen water, what it actually does in your body and whether it's worth considering for your kidney health.

I'm Dr. Basmarifan and if you've been hearing about hydrogen water lately, you're not alone. It's becoming increasingly popular with bottles and machines showing up everywhere from health food stores to social media feeds.

But as someone who's spent years treating kidney disease at the Holistic Kidney Institute, I want to help you understand that the actual science says, not just the marketing claims.

So let's start with the basics. What exactly is hydrogen water? It is simple, regular water that's been infused with molecular hydrogen gas. Now this isn't upon changing the chemical structure of water itself.

We are not talking about H3O or anything like that. We are talking about dissolving extra hydrogen molecules into the water similar to how carbonated water has carbon dioxide dissolved in it.

What Hydrogen Water Is

Here's what makes hydrogen unique and why researchers are interested in it. Molecular hydrogen is the smallest and lightest molecule in the universe. We are talking about a diameter of only 0.24 nanometer that's incredibly tiny.

To put this in perspective, it's much smaller than oxygen molecules or even most antioxidants we typically consume. And this tiny size has some fascinating implications for how it moves through your body.

Because hydrogen is so small and has a neutral charge, it can do something that most other molecules cannot. It can cross barriers that are normally very selective.

It can pass through cell membranes easily, even those made of fatty layers. It can penetrate deep into your mitochondria, which are the powerhouses of your cells where a lot of oxidative stress is generated.

And perhaps most remarkably, it can cross the blood brain barrier, which is typically very protective and prevents most compounds from entering the brain.

This ability to reach virtually every compartment of your bone is one of the main reasons scientists are exploring hydrogen as a therapeutic tool. But here's where we need to be careful.

Just because something can travel everywhere doesn't automatically mean it's doing something beneficial everywhere. But we need to look at the actual research.

How Hydrogen Travels Through the Body

Let's talk about what happens when hydrogen enters your cells. The proposed mechanism is something called selective antioxidant activity. Now, you've probably heard about antioxidants before.

These are compounds that neutralize free radicals, which are unstable molecules that can damage cells. But here's what makes hydrogen interesting. Unlike many antioxidants that neutralize all types of free radicals

indiscriminately, hydrogen is selective.

Research suggests that hydrogen specifically targets the most harmful free radicals, particularly the hydroxyl radical and peroxynitrite, while leaving alone the free radicals that your body actually needs for normal cell signaling.

This is crucial because your body uses certain reactive oxygen species for important functions like fighting infections or regulating cell growth. So hydrogen acts like a smart antioxidant rather than a blunt instrument that wipes out everything.

Beyond its antioxidant effects, studies have shown that hydrogen can influence cellular signaling pathways. It appears to modulate pathways like NFB and NRF2, which regulate inflammation and your body's own antioxidant defense system.

It may also help reduce the release of inflammatory cytokines and protect mitochondria from dysfunction, both of which are major factors in chronic inflammation, aging, kidney disease and degenerative diseases.

Now let's get specific about kidney health because that's what many of you are probably most interested in.

Selective Antioxidant Effects and Cell Signaling

Your kidneys are particularly vulnerable to oxidative stress and inflammation. They process about 200 quarts of blood every single day, filtering waste and excess fluid.

This constant work generates a lot of reactive oxygen species and when the balance dips towards too much oxidative stress, kidney cells can become damaged.

Several preclinical studies, meaning animal and cell culture studies, have shown that hydrogen can protect kidney tissue from various types of injury.

This includes protection against toxin-induced damage, ischemia reperfusion injury, which happens when blood flow to the kidney is temporarily blocked and then restored, and damage from certain medications.

The proposed mechanisms include reducing inflammation, protecting mitochondria function, and scavenging those harmful free radicals we talked about. But, and this is most important, is that the research is preliminary.

We are mostly looking at animal studies, small human trials for studying healthy individuals rather than people with advanced kidney disease. The evidence is promising, but not yet definitive.

Let me share what a recent systemic review from 2024 found. They looked at multiple studies on hydrogen-rich water and concluded that while it has emerged as a novel approach with therapeutic antioxidant properties, they emphasized that further research with larger sample size and rigorous methods is needed.

In other words, we are in early stages of understanding this. Some of the human studies have shown interesting findings. For instance, research on athletes drinking hydrogen water found improvement in markers of oxidative stress and inflammation, better recovery after exercise, and reduced muscle fatigue.

A study on people with metabolic syndrome, which includes impaired kidney function, showed improvement in cholesterol levels and markers of oxidative stress.

Hydrogen Water and Kidney Health Research

And one small study found that drinking about 2 litres of hydrogen water daily for 14 days increased blood pH slightly and raised bicarbonate levels in healthy young men, suggesting a mild alkalising effect.

That actually reminds me of a patient I worked a few months back and she was in her late 50s, stage 3 kidney disease. She came to us because her kidney function had been declining and she was experiencing fatigue and some swelling.

During our comprehensive assessment, we discovered several root causes contributing to heart kidney disease including significant oxidative stress markers, gut dysbiosis and chronic inflammation.

We created a personalized protocol that addressed these root causes through dietary changes, targeted supplements based on her specific deficiencies, gut healing strategies and stress management.

She was also interested in hydrogen water after reading about it online. So, we discussed incorporating it as part of our overall approach not as a primary treatment but as a complementary tool.

Over the next several months, her kidney function stabilized, energy improved significantly and her inflammatory markers decreased substantially. Now I want to be clear here that hydrogen water specifically helped her.

We can't say that for certain. She made multiple changes simultaneously which is how we approach care at Kidney Institute. We address root causes comprehensively rather than relying on any single intervention.

Of course, everyone's body is different and what worked for one person might not be the right solution for the other, which is why personalized assessment is crucial.

So where does this leave us practically? Should you consider hydrogen water for kidney health? Here's my perspective. Based on the current evidence, if you are interested in hydrogen water as part of a comprehensive approach to supporting your kidney health, it appears to be safe with no reported serious side effects in the studies so far.

The potential mechanisms make biological sense and the preliminary evidence is cautiously optimistic. However, expectations should be modest. This is not a magic bullet or a replacement for addressing the underlying causes of kidney disease.

If you have kidney disease, you need to work with someone who can identify and address the root causes, whether that's blood sugar dysregulation, inflammatory triggers, toxin exposure, gut health issues, or other factors specific to your situation.

If you're considering hydrogen water, here are some practical points. First, there is no established optimal dosage yet. Studies have used anywhere from 500 ml to 2 litres daily.

Second, the concentration of hydrogen in the water matters.

Human Studies and a Patient Example

It dissipates relatively quickly, so hydrogen water should be consumed soon after it's prepared. Third, and this is important, quality matters. If you're getting hydrogen water machine or purchasing bottled hydrogen water, you want to ensure it's actually delivering dissolved hydrogen at meaningful concentrations.

But let's also keep perspective. Many of the benefits seen in studies could potentially come from simply staying well hydrated with regular water. Good hydration is fundamental to kidney health period.

The extra hydrogen may provide additional benefit but we can't ignore the baseline importance of adequate water intake. One area where hydrogen shows particular promise is in reducing oxidative stress.

For people with kidney disease, oxidative stress is often elevated and contributes to disease progression. If hydrogen water can help mitigate this, even modestly, while you are addressing other root causes, it could be a useful tool in your toolkit.

There's also some preliminary evidence that hydrogen might help with alkalizing effect on blood pH, which could be relevant for people with kidney disease who often struggle with metabolic acidosis.

However, this evidence is mostly from healthy individuals, not people with clinical metabolic acidosis. Standard medical treatment for acidosis remains necessary and shouldn't be replaced by hydrogen water.

Let me also address cost because this is a real consideration. Hydrogen water machines can be expensive ranging from couple of hundred to over a thousand dollars Bottled hydrogen water can also add up quickly, so you need to weigh whether the potential modest benefits justify the cost for you, especially when there are other evidence-based interventions for kidney health that we know work like optimizing nutrition, managing blood pressure, blood sugar reducing, inflammatory triggers, and healing the gut.

At the Holistic Kidney Institute, when patients ask me about hydrogen water, I tell them it is something we can consider as part of a comprehensive plan, but it's not where we start.

Practical Considerations and Limitations

We start by identifying your specific root causes through detailed assessment, addressing nutritional deficiencies, optimizing gut health, reducing toxic exposures and managing inflammation through diet and lifestyle.

These foundational approaches have much stronger evidence behind them. Here's what I want you to take away from today's discussion. Hydrogen water represents an interesting area of research with plausible biological mechanisms and promising preliminary evidence.

For kidney health specifically, its antioxidant and anti-inflammatory properties could theoretically be beneficial, though we need more rigorous human studies to confirm this.

If you're dealing with kidney disease, please don't view hydrogen water as a standalone solution. What your kidney needs is a comprehensive approach that addresses why they're struggling in the first place.

That means identifying and treating root causes, whether that's chronic inflammation, oxidative stress, metabolic dysfunction, gut dysbiosis, toxic overload, or other factors.

Remember, even though I'm sharing this information, I'm not your doctor and I don't know what's specifically going on with your health. The most important thing is not to get caught up in crazing the latest trend while ignoring the fundamentals.

Make sure you're drinking adequate clean water, whether it's hydrogen infused or not. Focus on anti-inflammatory nutrition, manage your blood sugar, reduce stress, optimize sleep, support your gut health and work with a physician who can identify and address your specific root causes.

If after addressing those foundations, you want to add hydrogen water as a complementary tool, that's a conversation worth having with your physician.

Just don't let it distract you from the more fundamental work of truly healing your kidneys. The science of hydrogen water is evolving and I'll continue watching this research closely.

As we get more robust human studies, especially in people with chronic kidney disease, we will have clear answers about its role in kidney health.

Final Takeaways and Closing Remarks

Until then, we work with what we know while remaining open to emerging evidence. I hope this gives you a clear science-based perspective on hydrogen water.

My goal is always to help you make informed decisions about your health, understanding the peeling possibilities. I hope this helps you. Bye now. Thank you for tuning in to Doctor Talks.

We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices that empower your well-being.

For more insights and strategies, subscribe to our podcast and visit our website, www.doctortalks.com. Stay connected, stay healthy, and join us next time on Doctor Talks.

Real talks from real doctors on the issues that matter to you most.