

Hydrogen Water, PFAS, & BBB



The door to my office opened and a trio marched in. Each face, in its own style, proclaimed that they were on a serious errand. *Should be interesting*, I thought to myself.

The tall one spoke first. "What can you tell us about Hydrogen water?"

The shorter one said, "Do you drink Hydrogen water?"

The middle one said: "I looked it up. Everyone knows that water— H_2O —already has two hydrogen atoms. Who needs more than two? What's the deal?"

I waved them toward two chairs and a stool. They settled themselves, faces still serious. "I became interested in Hydrogen-Rich-Water (HRW) when I read studies by researchers who have been studying hydrogen water specifically since about 2007. Think back to freshman college chemistry. Hydrogen is a chemical element with the symbol H and an atomic number of 1. Their findings strongly suggest that hydrogen water can be beneficial to the human brain and body in a myriad of ways. For example, HRW is considered therapeutic for 8 of the top 10 causes of death in the US."

- ✓ Cardiovascular Disease
- ✓ Kidney disease (Nephritic / Nephrosis)
- ✓ Diabetes
- ✓ Flu / Pneumonia
- ✓ Alzheimer's disease
- ✓ Malignant tumors (e.g., moderates side effects of radiation treatments)
- ✓ Chronic respiratory diseases.
- ✓ Cardiovascular diseases."

"I remember now," said the short one. "The instructor said that in one of its forms, hydrogen is the most abundant chemical substance in the Universe. I read recently that Tyler LeBaron, founder of the Molecular Hydrogen Institute [MHI], is one of the scientists studying hydrogen water."

That's impressive," said the tall one.

"I also learned about PFAS 'forever chemicals'," I said, "which I do not want. Some top-of-the-line machines can add hydrogen to drinking-water as well as removing significant amounts of other impurities commonly found in tap water such as PFAS."

"Oh, like a two-for-one," the shorter one said.

I nodded. "Emerging studies are fascinating," I said. "They have shown dozens of benefits related to Hydrogen-Rich-Water." For example:

- Researchers found that molecular hydrogen, which is the same element added to hydrogen water, was able to reduce oxidative damage and protect cells against inflammation, which helped to alleviate symptoms of study participants who had rheumatoid arthritis. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5095341/> <https://www.sciencedirect.com/science/article/pii/S1567576914002124>]
- In another study, participants who drank between 1.5 and 2 liters of hydrogen water over a period of 8 weeks were able to dramatically decrease markers of metabolic syndrome, decrease a common precursor to metabolic syndrome known as thiobarbituric acid, and increase a powerful antioxidant enzyme known as superoxide dismutase. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831093/>]

"Any studies about Diabetes?" asked the middle one. "One of my classmates has type diabetes."

- A study with mice showed positive results with both obesity and diabetes type 2. [<https://www.ncbi.nlm.nih.gov/pubmed/19083400>]
- Studies with Parkinson's disease found that drinking hydrogen water helped protect the individuals against oxidative damage in the brain and helped prevent cognitive impairment that is associated with Parkinson's. (Some researchers are calling Parkinson's disease basically a lifestyle disorder.) [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3407490/>]
- Hydrogen functions as a powerful antioxidant, crossing cell membranes and targeting organelles such as the mitochondria, i.e., energy factories in the cell nucleus. [<https://www.ncbi.nlm.nih.gov/pubmed/17486089>]
- Young athletes who drank hydrogen water before exercise showed reduced lactic acid build-up during heavy exercise and decreased muscle fatigue. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3395574/>]

"I'm a serious tennis player," said the short one. "I could sure benefit from increased energy and reduced lactic acid build-up!"

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syndrome, decrease a common precursor to metabolic syndrome known as thiobarbituric acid, and increase a powerful antioxidant enzyme known as superoxide dismutase. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831093/>]

"Any studies about cancer?" asked the middle one. "Two girlfriends of mine were recently diagnosed with cancer. One has Triple-negative breast cancer (TNBC), the other has a Uterine cancer."

"Studies are being reported regularly," I replied. "For example,"

- Hydrogen has a potential for improving the quality of life of patients during chemotherapy by efficiently mitigating the side effects of cisplatin, a widely used anti-cancer drug. [<https://www.ncbi.nlm.nih.gov/pubmed/19148645>]
- The consumption of hydrogen-rich water is a potentially therapeutic strategy for improving quality of life in patients with liver tumors after radiation exposure. Drinking hydrogen-rich water reduces the biological reaction to radiation-induced oxidative stress without compromising anti-tumor effects.

"You probably already know that Molecular Hydrogen (H₂) is said to be the smallest molecule in existence. It is so small that it can even cross the blood-brain barrier, BBB, and enter into brain cell membranes," I said, smiling. "I want that for my brain."

"Enough already," said the tall one. "You just handed me source material for a paper I need to write for my biology class."

"Back to my question," the shorter one said, "Do you drink Hydrogen water?"

"I drink HRW exclusively when I am at home," I replied. "If am away from home for several days—and not traveling by air—I carry HRW with me in stainless-steel containers. The hydrogen levels may fall, but I have the benefit of drinking water that has filtered out most of the PFAS (forever chemicals) as well as other impurities found in tap water."

"I came here today thinking I would learn that Hydrogen water was just another money-making project," said the middle one. "Now all I want to know is where I can get a machine like yours."

I laughed out loud and said: "IMPax World in Folsom, California."