

# Hydrogenated Water Helps Reduce Oxidative Stress

Hydrogenated water helps reduce the oxidative stress that accelerates aging. If you are interested in slowing aging, reducing inflammation, and protecting yourself from many diseases and medical conditions, hydrogen water may be the key to your success.

Free radicals and other reactive oxygen species (ROS) are the result of normal enzymatic and nonenzymatic reactions in the human body. For example, stress, inflammation and exercise can create free radicals.

Free radicals can also be generated because of external influences such as

- Radiation
- X-rays
- Ozone
- tobacco smoke
- Exposure to ultraviolet rays
- Air pollutants
- Industrial chemicals

Oxidative stress due to excess free radicals progressively damage lipids, proteins, carbohydrates, RNA and DNA. This causes damage to cells and homeostatic disruption. The damage accumulates over time throughout the body.

Free radical damage is important because it manifests itself as disease and sickness. Free radical damage is associated with a number of conditions including premature aging, cancer, hypertension, heart diseases, stroke, arthritis, atherosclerosis, metabolic syndrome and diabetes.

## **Balance Between Reactive Oxygen Species and Antioxidants**

The body experiences oxidative stress when the the production of reactive oxygen species exceeds the activity of the antioxidant defense system.

So, a lot of activity has been expended to find safe, effective, natural ways to increase antioxidants in the body.

Most people know that foods containing beta-carotene, vitamin C, and vitamin E have proven antioxidant properties. The trace mineral selenium is often included in this group. In addition, the body itself produces antioxidants such as glutathione, ubiquinol, and uric acid as part of its normal activities.

## Hydrogen as an Antioxidant

But, hydrogen is even more basic than complex molecules such as vitamins and selenium in neutralizing a reactive oxygen species. Hydrogen can combine with reactive oxygen species to prevent DNA damage. But, how do we introduce hydrogen into the body? Hydrogen is present in the atmosphere in minute quantities, only about one part per million.

There are a number of ways to introduce hydrogen into the body. Some of these techniques include:

- Inhaling hydrogen gas
- Drinking hydrogen dissolved water (hydrogen water)
- Taking a bath in hydrogen water
- Injections of hydrogen-dissolved saline
- Dripping hydrogen saline into the eyes
- Modifying intestinal bacteria to produce more hydrogen

While introducing hydrogen into the body may seem new or trendy, it has been used for many years in gas mixtures used for deep diving and for prevention of decompression sickness.

Inhaling hydrogen gas has a rapid effect and is good for acute oxidative stress. But hydrogen in the air is flammable. This limits its use for therapeutic effects mainly to medical facilities. Outside of controlled environments in medical institutions, hydrogen is normally delivered by dissolving hydrogen in water, usually through bubbling or other direct contact with hydrogen.

Water with dissolved hydrogen (but low in dissolved oxygen) has a high pH. It has the ability to scavenge reactive oxygen species and protects the body from oxidative damage.

Mouse studies of dissolved hydrogen indicate, among other benefits, that it reduces atherosclerosis, improved kidney function, and improves brain injuries.

Antioxidants such as vitamins C and E help with glycemic control in both humans and animals. So, if dissolved hydrogen can act as an antioxidant, it may also help with glycemic control.

## Clinical Studies of Hydrogenated Water

While many studies have been done on mice and rats, here are a couple of studies on humans.

In one study 30 patients (24 who had type 2 diabetes which was controlled with diet and exercise and 6 who were insulin resistant) were enrolled in a randomized, double-blind, placebo-controlled, crossover study to determine the effects of hydrogen-rich water. Half these patients consumed 900 mL of hydrogen-rich water and the other half were provided 900 mL of placebo water daily for 8 weeks. After a twelve week "wash-out" period the crossover period

began were the groups switched water types.

Various biomarkers of oxidative stress, insulin resistance, and glucose metabolism were measured before and after the 8 week trial.

Patients receiving hydrogenated water showed significantly lower levels overall of LDL cholesterol and specifically the dangerous small dense LDL as well as significantly lower urinary 8-isoprostanes (an indicator of oxidative stress).

Patients on hydrogenated water also showed increased plasma levels of adiponectin (indicating enhanced insulin sensitivity) and extracellular-superoxide dismutase (important for antioxidant defense). In addition, in 4 of the 6 patients with insulin resistance, the final glucose tolerance test showed normal.

In another study of 20 patients with potential metabolic syndrome (displaying one or more of the metabolic syndrome characteristics). Subject consumed 300-400 mL of hydrogenated water 5 times per day resulting in a total of 1.5 L to 2.0 L of hydrogenated water.

Various measures were made at the start, after 4 weeks and after the 8 week trial period.

After 4 and 8 weeks, the concentration of urinary TBARS (a measure of oxidative stress) decreased significantly from the start of the trial. There was an increase of SOD (superoxide dismutase) indicating increased antioxidant defense. There was a significant increase in good HDL cholesterol as well as a decrease in the ratio of total cholesterol to HDL cholesterol. This study showed no statistically significant difference in fasting glucose levels.

## **Considerations in Purchasing a Hydrogen Water Generator**

You will find hydrogen water generators priced from about \$40 on up. Some expensive versions cost several thousand dollars.

They all work by electrolysis of water. When positive and negative electrodes are placed in water, the water molecule ( $H_2O$ ) is broken up with hydrogen bubbling up from the negative electrode and oxygen bubbling up from the positive electrode.

Cheaper hydrogen water generators place both electrodes at the bottom of the water container so both hydrogen and oxygen bubble up into your water. Because water normally contains some salts, you will also get chlorine bubbling up into your water.

Models costing over \$100 often use Proton Exchange Membrane or PEM technology. Here the positive (oxygen) and negative (hydrogen) electrodes are separated by a membrane that allows hydrogen to bubble up into your water container, but oxygen and chlorine bubbles into another chamber where it is

discharged into the air.

This video explains this concept.

**Hydrogen water may NOT be safe to drink! Find out WHY**

## **Conclusions About Hydrogen Water You Can Use**

Many studies have shown the potential for hydrogen to act as an antioxidant and defend against oxidative stress.

You probably already take vitamins C and E to help combat oxidative stress, slow aging, and help prevent many of the common diseases of aging. And now you can add hydrogen water to your tool box.

More oxygen generators are appearing on the market. Be sure to choose on with PEM technology to get the cleanest, purest hydrogen water for you and your loved ones.

## **Hydrogen Water References**

[Free radicals, antioxidants and functional foods: Impact on human health](#) as published in *Pharmacognosy Review*

[Molecular hydrogen is a novel antioxidant to efficiently reduce oxidative stress with potential for the improvement of mitochondrial diseases](#) as published in *Biochimica et Biophysica Acta*

[Supplementation of hydrogen-rich water improves lipid and glucose metabolism in patients with type 2 diabetes or impaired glucose tolerance](#) as published in *Nutrition Research*

[Effectiveness of Hydrogen Rich Water on Antioxidant Status of Subjects with Potential Metabolic Syndrome—An Open Label Pilot Study](#) as published in *Journal of Clinical Biochemistry and Nutrition*

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## **Stop Cancer Before it Starts**

There are many organizations dedicated to finding the causes of and cures for cancer. You probably know recognize many of these such as:

- The American Cancer Society
- Cancer Research Institute
- The Lance Armstrong Foundation
- Lungevity Foundation
- Susan G. Koman for the Cure

- Leukaemia Research Fund

Yet, none of these organizations will be of much benefit to you if you do not practice good cancer prevention strategies.

## Stop Cancer Before it Starts

You probably already know how to prevent most cancers. We don't need more research to discover these simple cancer stopping techniques.



Photo by

[simone.brunozzi](#) 

- Don't smoke or use tobacco.
- Eat healthy foods. This means plenty of fruits and vegetables, avoid processed meats and, if you must drink alcohol, drink in moderation.
- Avoid obesity. Maintain a healthy weight and get plenty of exercise.
- Avoid overexposure to the sun. Skin cancer is a common form of cancer.
- Avoid carcinogens. These include viruses, bacteria, and parasites as well as air, water and soil pollution.
- Avoid a compromised immune system.

## Some Cancer Prevention Research to Keep in Mind

### Eat Your Veggies

One [study](#) published in the journal *Epidemiology* studied how fruits and vegetables affected rates of cancer of the colon, rectum, and breast. The authors indicated that carotenoids, flavonoids, phenols, isothiocyanates, fiber, and vitamins C and E could have anti-carcinogenic effects.

They found that raw carrots were the only vegetable that lowered cancer risks by 20% or more for all three types of cancer. They also found that apples, pears, and kiwi were associated with at least a 5% risk reduction for all three cancer types.

Overall high intake of raw vegetables lowered risks by 20% for colon cancer, 18% for cancer of the rectum, and 15% for breast cancer.

Cooked vegetables also reduced risks by 28% for colon cancer, 20% for cancer of the rectum, and 4% for breast cancer.

### Watch Out for Sugar

Cancer cells love glucose (blood sugar). They take in and metabolize glucose faster than normal cells.



This fact allows positron emission tomography (PET) scans to detect cancerous tumors without invasive operations. This is possible by giving the patient a glucose analogue of slightly radioactive FDG, The cancer cells suck this up and it accumulates in cancerous tumors and can easily be detected in a PET scan.

Another [study](#) published in the journal *Cancer* investigated various glucose transport mechanisms in human breast cancer.

Glucose transport across cell boundaries is performed with the help of various protein enzymes. They found that the so-called Glut-1, Glut-2 and Glut-4 protein enzymes were active in breast cancer, but Glut-3 and Glut-5 mechanisms were not as active. Glut-1 was the most active means of taking glucose into breast cancer cells. Such studies can help identify ways to slow down or inhibit the sugar feeding of cancer cells.

Another [study](#) published in the *British Journal of Cancer* looked at breast cancer rates in various countries. The researchers found that the rate of breast cancer in older women (aged 65-69) were positively correlated with sugar and fat consumption.

Yet another [study](#) published in *The American Journal of Clinical Nutrition* examined risks for pancreatic cancer and consumption of sugar sweetened foods. The study looked at 77,797 women and men.

This study found that those who consumed the most sugar were 1.95 times as likely to get pancreatic cancer as those consuming the least amount of sugar. Similarly for soft drinks, those who consumed most were 2.3 times as likely to get pancreatic cancer as those who consumed the fewest soft drinks.

The researchers thought that high levels of blood glucose created oxidative stress which resulted in free radical damage to the pancreatic cells. The idea is that the regions of the pancreas produce hormones have low concentrations of antioxidant enzymes. Thus, they are especially susceptible to glucose created free radicals.

Yet another [study](#) published in the *British Medical Journal* examined how the consumption of sugar and fat affected the risk of colorectal cancer.

They found that the overall calorie intake of those with large bowel cancer was 18% higher than their control group without cancer. Those with cancer consumed 21% more carbohydrates than those without cancer.

The cancer patients consumed 41% more sugars with little or no fiber and 19% less natural sugars with fiber. They found that the third of the study group

consuming the most refined sugars (with high energy to fiber ratios) had an 8 times greater risk of contracting large bowel cancer than those in the lower third of refined sugar consumption.

If you're not convinced already, another [study](#) published in the journal *Cancer Causes and Control* looked at the medical history of 98,030 women aged 55 to 69 years in Iowa. These women were mailed a questionnaire on known and suspected cancer risk-factors.

They found that BMI was related directly to cancer risk. Cancer risk for 60% of the women with the highest BMIs was from 40 to 70 percent higher than for those in the lowest 40% of BMIs. There was also double the risk of colon cancer in women consuming the most sucrose-containing foods.

## **You Can Stop Cancer Before it Starts**

Research tells us not only the causes of cancer, but how to prevent many cancers types.

Cancer prevention strategies include consuming healthy fruits and vegetables and avoiding processed sugars that are depleted of fiber.

Unfortunately, this requires some effort on your part. You'll need to about most of the manufactured foods that contain lots of added sugars. And, you'll need to eat more raw fruits and vegetables.

If you like fruit or vegetable juices, switch to [blended smoothies](#) that retain the [natural fiber](#).

Cancer prevention is a choice you must make. Make the right choices and stay healthy.

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## **[Discover the Health Benefits of Turmeric](#)**

### **What is Turmeric?**

Turmeric is an inexpensive, tasty, yellow spice used extensively in Asian food. It is also used as a dye for saris and Buddhist monk's robes. Turmeric is a perennial plant that is native to South and Southeast Asia. It requires warm temperatures (68-86 degrees Fahrenheit) and a rainy environment.



Photo by [bungasirait](#) 

It has a long history of use spanning thousands of years in both India and China as a cure for many ailments. Turmeric has played a part in Ayurveda, Siddha medicine, Unani, and traditional Chinese medicine for centuries. More recently western researchers have investigated turmeric and have discovered evidence of many health benefits. One active ingredient in turmeric, curcumin, has shown its power for its antioxidant and anti-inflammatory properties. More than a billion people regularly consume curcumin in their diet.

### **Health Benefits of Turmeric**

One key to health involves preventing free radical damage throughout your body. Free radicals are atoms or molecules with unpaired electrons that cause chemical reactions (oxidative damage) with cells in your body. They can damage lipids, proteins, DNA, or cell membranes. Free radical damage prevents the body from functioning normally and often causes inflammation or even cell death.

Unfortunately, there are many things in our environment that can create free radicals. Free radicals can be generated by the foods we eat, various drugs and medicines, air and water pollutants, pesticides and exercise to name a few. Oxidative damage caused by free radicals has been associated with various chronic diseases such as cancer, atherosclerosis, and neurodegenerative diseases as well as aging.

To the rescue come antioxidants. These free radical scavengers either prevent free radicals from forming or react with existing free radicals to neutralize them and make them safe. By reducing damage, any inflammation to aid in repairing cell damage is less necessary.

Curcumin has a "[potent anti-inflammatory property](#)" that helps keep free radical contained. Its antioxidant property is 5 to 10 times stronger than vitamins C and E.

But, you should not consider curcumin as a medicine to be taken when you become ill. It is best used daily to help contain free radicals and reduce inflammation. It is a key nutrient that you should take every day.

### **What Free Radical Damage Diseases Can Turmeric and Curcumin Help Prevent?**



Oxidative stress has been a [known factor in many diseases](#) such as:

- cancer
- autoimmune disorders
- aging
- cataract
- rheumatoid arthritis
- cardiovascular disease
- neurodegenerative diseases

Subash C. Gupta, Sridevi Patchva, and Bharat B. Aggarwal in their article [Therapeutic Roles of Curcumin: Lessons Learned from Clinical Trials](#) in *American Association of Pharmaceutical Scientists Journal* citing half a century of research on curcumin indicated:

Some promising effects have been observed in patients with various pro-inflammatory diseases including cancer, cardiovascular disease, arthritis, uveitis, ulcerative proctitis, Crohn's disease, ulcerative colitis, irritable bowel disease, tropical pancreatitis, peptic ulcer, gastric ulcer, idiopathic orbital inflammatory pseudotumor, oral lichen planus, gastric inflammation, vitiligo, psoriasis, acute coronary syndrome, atherosclerosis, diabetes, diabetic nephropathy, diabetic microangiopathy, lupus nephritis, renal conditions, acquired immunodeficiency syndrome,  $\beta$ -thalassemia, biliary dyskinesia, Dejerine-Sottas disease, cholecystitis, and chronic bacterial prostatitis.

Clinical trials of turmeric and curcumin are ongoing. Some clinical trials are looking various types of cancers (breast, prostate, pancreatic, lung and colorectal), type 2 diabetes, rheumatoid arthritis, ulcerative colitis, dermatitis, cognitive impairments and depression.

### **Bio-Availability Problem**

Clinical trials show that when consumed, the bioavailability of curcumin is relatively low. The liver rapidly clenses the bloodstream of curcumin, quickly making it ineffective.

Several studies has shown that both black pepper and fats greatly help the absorption and retention of curcumin. So, it's best not to take curcumin on an empty stomach, but rather with a meal including some fats and black pepper.

How to get the most of Curcumin. Should you take pills or whole turmeric? How do you increase the bioavailability of curcumin? What other foods should you eat with turmeric? These questions and much more are answered in this video!

**Video Rating: / 5**