



Paul D. Cosman, n.d. Naturopathic Consultant
Chief Clinical Researcher, Glycocalyx Rejuvenation Centers Inc.

“In a clinical setting the first thing we do in the facilitation of new clients health is to move the body from a state of acidosis to alkaline using hydrogen enriched water from clinical water ionizers. We call this hydrogen water therapy!”

Anti-Aging

Hydrogen is a powerful antioxidant, that helps to defend cells and genes from damage and death caused by harmful free radicals. These properties, in combination with its anti-inflammatory properties help enhance longevity because aging is caused by tissue degeneration, oxidative stress and inflammation.

Disease Prevention

There are currently 150 different diseases in which molecular hydrogen appears to exert a beneficial effect. Some of the most common include: cardiovascular disease, Parkinson’s disease, Alzheimer’s disease,

dementia, diabetes, allergies, osteoporosis, atherosclerosis, heart disease, and cancer.

Water Ionizer Produces Hydrogen Water

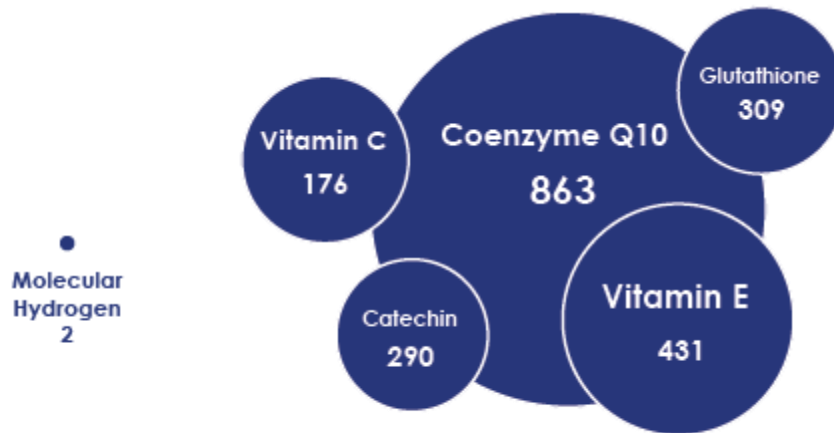
Dr. Cos “It is very revealing that it is **not the high pH alkaline water that provides health benefits** but the molecular hydrogen – but only if the ionizer electrodes are brand new or perfectly free of scale and you drink the water right away. The hydrogen gas concentration from water ionizers varies significantly from less than 0.05 ppm to over 2.5 ppm depending on source water, flow rate, design, and cleanliness of the electrodes. Importantly alkaline water ionizers were developed decades before it was known of the therapeutic importance of molecular hydrogen, thus these units were optimized for alkaline pH not high dissolved hydrogen concentration. Typically, at normal flow and normal source water the concentration of H₂ from an alkaline water ionizer is around 0.1 ppm to 0.7 ppm. By running the water very slowly, machines may increase the molecular hydrogen concentration.”

Scientific researchers tell us, Hydrogen is extremely unique since it has the capability to act at the cellular level. **Hydrogen is qualified to cross the blood brain barrier, to enter the mitochondria, and even has the ability to translocate to the nucleus under certain conditions.** Once in these ideal locations of the cell, previous studies have shown that hydrogen exerts antioxidant, anti-apoptotic, anti-inflammatory, and cytoprotective properties that are beneficial to the cell. In terms of medicine small is good, as Nano science has tended

to show. In the case of hydrogen, we are talking about the ultimate in smallness proving to be the biggest medical breakthrough of the 21st century. Hydrogen appears in the top left corner of the periodic table, and is denoted as number one. Hydrogen is the smallest, simplest, and most fundamental element with molecular hydrogen (H_2) the smallest molecule.

Interestingly, water, which is essential to life, is formed by the combination of oxygen (a powerful oxidizer) and hydrogen (a powerful reducer). It tends to make sense that molecular hydrogen has high-powered therapeutic potential as does water itself. Hydrogen is a novel and innovative therapeutic tool and can be used like intravenous vitamin C therapy except it is vastly less expensive, and can be used every day around the clock—with every sip of water.

Each drink of hydrogen water will flush our bodies with trillions of hydrogen molecules. H_2 is an effective molecule to scavenge or pair up with toxic hydroxyl radicals in the body that need to be neutralized. Hydrogen therapy is safe as there is no upper limit of use. The more water you drink infused with hydrogen the better, especially if you have late stage cancer and need to turn things around quickly. There is no toxicity to H_2 because the by-product of the free-radical neutralizing reaction is water. Each molecule of H_2 will neutralize 2 hydroxyl radicals into two molecules of H_2O hydrating your cells in the process. Hydrogen water at a concentration of 1.6 mg/L would have more “antioxidant” molecules than 100 mg of vitamin C, as there are more total molecules in 1.6 mg of hydrogen compared 100 mg of vitamin C.



Relative Sizes of Antioxidants

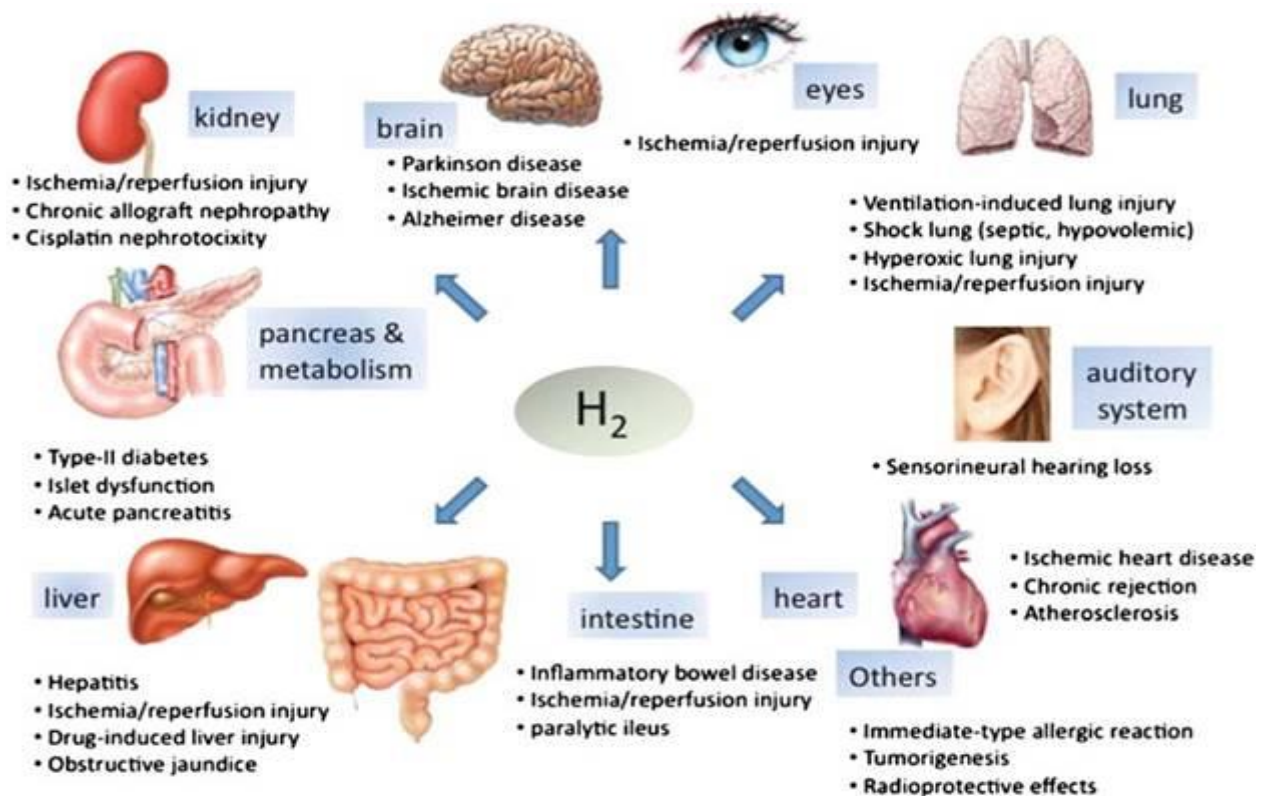
You have the power to open the door for a better health and understanding of your body!

Molecular hydrogen is a medical leap that is going to help many people. It elevates oral medicine to the level of intravenous medicine because of the ultra-quick absorption and dispersion deep into the cells. Now water can become the ultimate medicine especially if some of some of my other health solutions (magnesium, bicarbonate, iodine and liquid selenium) are used, when appropriate.

Medical/therapeutic water high in hydrogen will ride to the rescue of doctors and patients who are battling with chronic diseases. Studies have confirmed that consumption of hydrogen reduces oxidative stress in a diverse range of disorders and organ systems including the digestive, cardiovascular and respiratory systems. There are hundreds of scientific publications that show molecular hydrogen to be therapeutic. Even NASA is researching hydrogen water to protect their astronauts from radiation during space travel.

The most important and basic thing to know about molecular hydrogen is that it negates the toxicity of oxygen.

Hydrogen in the body is mostly bound to carbon, oxygen and nitrogen. It is part of almost every molecule in your body: DNA, proteins, sugars, fats. The hydrogen bond – which forms between atoms that “share” a hydrogen atom, is one of the most important interactions that makes biological molecules behave as they do. Thus, hydrogen is an important factor in the regulation of physiology.



Molecular Hydrogen is an ideal antioxidant molecule for oxidative stress in the mitochondria due to its small size. It is one of the very

few, if not only antioxidant molecules that can reach the inside of the mitochondria. H₂ directly protects mitochondria that are exposed to reactive oxygen species. Preliminary clinical trials show that drinking hydrogen-dissolved water seems to improve the pathology of mitochondrial disorders. Drinking H₂-water stimulates energy metabolism as measured by O₂ consumption and CO₂ production.

Today's vaccine/flu shots contain graphene oxide which creates coagulation within the cellular network, which deprives the network of oxygen, which creates oxidative stress (rusting) on vital organs, including brain function.



Actual photo of blood coagulation – graphene oxide

Hydrogen, Inflammation and Pain

The cells that are repeatedly exposed to inflammatory mediators will have the genes that code for inflammatory response proteins switched on, and thus be in a constant state of inflammation. This leads to diseases and health conditions that are strongly linked to inflammation, including asthma and cardiovascular diseases. Some of the molecules in the body that can instigate a change in gene expression are: Nf-kB, TNFa, and reactive nitrogen species such as nitric oxide and peroxynitrite. Hydrogen indirectly affects gene expression through its actions to modulate molecules that have a direct epigenetic effect, Molecular Hydrogen can:

- Impede release of NF-kB, Reduce TNFa, Reduce excess nitric oxide, Scavenge peroxynitrite

Molecular hydrogen has been shown to be an anti-inflammatory in acute conditions, but it is also a potential epigenetic modifying agent for genes that code for chronic pain and inflammation.

Preservative Time Kill Testing

Name of Organism	Log Reduction (30 sec.)	Time to Kill	Percent Reduction
<i>Acinetobacter baumannii</i>	6.3692	30 seconds	99.9999%

Illness Organism Time to Kill Testing

http://www.sonomapharma.com/microcyn-technology/		Like ENAGIC 2.5 pH water	
Name of Organism	Log Reduction	Time to Kill	Percent Reduction
<i>Acinetobacter baumannii</i>	6.3692	30 seconds	99.9999%
<i>Bacteroides fragilis</i>	7.6435	30 seconds	99.9999%
<i>Candida albicans</i>	6.3345	30 seconds	99.9999%
<i>Enterobacter aerogenes</i>	6.0881	30 seconds	99.9999%
<i>Enterococcus faecalis-VRE</i>	6.3646	30 seconds	99.9999%
<i>Enterococcus faecium-VRE MDR</i>	6.5119	30 seconds	99.9999%
<i>Escherichia coli</i>	5.6990	30 seconds	99.9998%
<i>Haemophilus influenzae</i>	5.1775	30 seconds	99.9993%
<i>Klebsiella oxytoca-MDR</i>	6.0492	30 seconds	99.9999%
<i>Klebsiella pneumoniae</i>	6.1430	30 seconds	99.9999%
<i>Micrococcus luteus</i>	5.8420	30 seconds	99.9999%
<i>Proteus mirabilis</i>	6.2028	30 seconds	99.9999%
<i>Pseudomonas aeruginosa</i>	5.8096	30 seconds	99.9998%
<i>Serratia marcescens</i>	5.9978	30 seconds	99.9999%
<i>Staphylococcus aureus-MRSA</i>	6.3454	30 seconds	99.9999%
<i>Staphylococcus aureus</i>	6.2266	30 seconds	99.9999%
<i>Staphylococcus epidermidis</i>	6.0233	30 seconds	99.9999%
<i>Staphylococcus haemolyticus</i>	5.9112	30 seconds	99.9999%
<i>Staphylococcus hominis</i>	5.4456	30 seconds	99.9996%
<i>Staphylococcus saprophyticus</i>	5.9590	30 seconds	99.9999%
<i>Streptococcus pyogenes</i>	6.7160	30 seconds	99.9999%