

## How Hydrate2o Works

### Mechanism of Hydration and the Aquaporin Channel

Peter Agre, a Nobel Prize recipient, discovered that water molecules pass through the aquaporin channels of a cell membrane wall one molecule at a time. A single water molecule enters the aquaporin channel of the cell membrane wall in order to hydrate the cell. This fact is often used to justify the claim that water is just water, a single H<sub>2</sub>O molecule, and all hydration counts including the water contained in a Coke or a cup of coffee. In reality, Peter Agre's work helps explain the mechanism behind the rapid absorption of Hydrate2o and the differences between waters. Not all water is created equal when it comes to hydration. Coke's version of hydration is a myth.

Water molecules are both divalent and dimagnetic. The magnetic and electrical fields associated with a single water molecule will control the interactions between the water molecule and the electro-magnetic fields associated with the membrane wall. Change the energy field of the water molecule and you change the efficiency of absorption into the cell.

Each water molecule (H<sub>2</sub>O), whether it is part of distilled water, tap water or spring water has a specific orbital relationship between the position of the two hydrogen protons and the single oxygen molecule. Each proton H<sup>+</sup> is attached to the oxygen O (-2) through a covalent bond. There are two protons (2H<sup>+</sup>) and one oxygen (-2) in every water molecule. Hence there are two covalent bonds.

However, it is the spatial relationship or the orbital positioning of the two protons to the oxygen atom that gives the water molecule its divalent charge characteristics. The water molecule will carry a slight positive on one side of the H<sub>2</sub>O molecule and slight negative charge on the other side. Not many molecules are divalent, but water is divalent because of the spatial relationship of the hydrogen protons to the oxygen.

Conventional wisdom describes the positioning of the protons to each other as the water bond angle. Most water experts believe that this position is fixed and the water bond angle is the same for all water molecules. Hence all water is just water. Our physical properties test and the efficiency of absorption of Hydrate2o provide scientific evidence that not all water is the same or equal.

The spatial relationship of the protons to each other, within a single water molecule, is called the water bond angle. The water bond angle is controlled by the energy of the covalent bond. Each hydrogen proton, H<sup>+</sup>, in each water molecule, H<sub>2</sub>O, is attached to the oxygen molecule through a covalent bond. Change the strength of the covalent bond between the hydrogen proton and the oxygen atom and you will change the water bond angle, the relationship of the two protons to each other.

Change the water bond angle and you will change the divalent characteristics of the individual water molecule. Change the divalent characteristics of the water molecule and you will change the conductivity of the water. You can change the divalent characteristics of the water molecule by changing the water bond angle or the position of the two hydrogen protons in relationship to the oxygen.

The nuclear magnetic resonance (NMR) of the water molecule, also measures the spatial relationship between the protons,  $2H^+$  and the oxygen. It is called shielding. In this case the water molecule is diamagnetic as well as divalent. You can physically measure the response of the water molecule or any other molecule to an imposed magnetic field. That is the principle of measuring the nuclear magnetic resonance of a chemical compound. The only way to change the NMR reading of a water molecule is to change the position of the  $H^+$  protons.

The position of the  $H^+$  protons is solely controlled by the covalent bond that exists between the  $H^+$  protons and the oxygen molecule. The covalent bond controls all of the properties of the water molecule. That applies to each single water molecule. The physical properties of each single water molecule determine how easily each single water molecule can pass through the aquaporin channel. If you look closely at Peter Agre's work you will see that there is a positive charge on the membrane wall one half of the way through the aquaporin channel.

That positive charge of the membrane wall is pulling on the negative charge of the water molecule. It pulls the water molecule into the aquaporin channel. The divalent characteristics of each single water molecule will influence the ability of a single water molecule to be pulled into the channel. During the process that creates Hydrate2o, we create a water molecule that can efficiently pass through the aquaporin channel.

In the bulk phase of the water, single water molecules will link together through the process known as hydrogen bonding. That is where the hydrogen protons of one water molecule bond to the oxygen molecule of another nearby or neighbor water molecule. Hydrogen bonding is very different than covalent bonding. Hydrogen bonding occurs between water molecules and covalent bonding occurs within the water molecule.

When the covalent bonds are of a specific energy level, the hydrogen protons will have a defined relationship to the oxygen molecule. That relationship will define how well the hydrogen proton can be shared with another nearby oxygen molecule or how well hydrogen bonding can be achieved. Sharing the protons is the same thing as being a proton donor. This will determine the oxidation-reduction potential of the bulk water and the pH measurements.

When you have the right energy levels in the covalent bonds within the water molecule, you will get the levels of hydrogen bonding between the water molecules that produce a linkage that is predominantly between six water molecules at a time. This is a dynamic equilibrium that simply reflects the propensity of water molecules to undergo hydrogen bonding.

The six sided structure is simply an offshoot of changing the covalent bond inside the water molecule. Changing the covalent bond and hence the water bond angle of each individual water molecule changes the physical properties of the water. That is clearly demonstrated in the analytical properties tests of Hydrate2o against other waters. Hydrate2o is statistically different

in every physical property. The tests were performed at certified test facilities. Everyone else has to add a chemical to change the surface tension of their water. Everyone else has to add something to change the viscosity. Everyone else has to add something to change the pH. The fact is we do not add anything to the water and yet we dramatically change the physical properties.

We accomplish this by using energy (magnetic, electrical and adiabatic compression) to change the covalent bond between the hydrogen proton and the oxygen molecule within the water molecule itself. We cause a thermodynamic change within the water molecule. In essence, we use energy to reposition the hydrogen proton to a new stable orbital and the hydrogen proton establishes a new equilibrium with the oxygen. You then have a new covalent bond and an entirely different water molecule. We alter the fundamental understanding of water. Not all water is created equal.

The single water molecule we create tends to agglomerate or self associate or hydrogen bond with other water molecules in units of six to ten. Science calls this the structure of water. The bulk water then has vastly different physical properties with no additives. The individual water molecules also have the right dielectric and dimagnetic constants to efficiently pass through the electro-magnetic fields of the cell membrane walls. That shows up as better absorption and hydration.

There is no discrepancy with Peter Agre's understanding of water absorption into the cells; it just happens faster and more efficiently with the Hydrate2o water molecules. In essence our technology simply changes the covalent bond between the hydrogen proton and the oxygen. We move both of the hydrogen protons to another stable orbital. That is why I call it quantum physics. At the end of the day we have simply created a new stable energy state for the water molecule. The new water molecule has physical properties that can be measured and quantified, including the efficiency of absorption. That is our proof.

Hydrate2o is better for athletes because it efficiently absorbs into the body. This will show up as improved athletic performance. Hydrate2o is better for overall health because it more efficiently absorbs into the body. This shows up as improved vital signs. The benefits of hydration have been proven in numerous clinical trials. Hydrate2o efficiently delivers those benefits.