



Ionized water and Ionization (a quick primer)

A polarization process, either electrical (electrolysis) and/or chemical (covalent) creates ionized water. In either case, Alkaline elements such as Calcium, Magnesium, Potassium, Sodium and other metals on the left side of the periodic table donate electrons. Carbon, Phosphorous, Chlorides, Fluorides and other elements from the right-side capture electrons as they dissolve in a matrix. This process is the "warp and woof" of life itself.

Electrolysis-alkaline machines have proven their worth in Japan and elsewhere over the past 40 years. Nano-Cal™ creates a covalent process in solution, which accomplishes a similar effect through mineralization of the water with a dissociated CaO. When an element from the left side of the periodic table is put into solution the electron collision creates ions. There are two types of ions created: the ion of the metal itself, and secondly what is called a Hydroxyl ion or OH⁻ ion. Conversely, if an element of the right side of the periodic table is introduced, ions of the element are created along with positively charged ions (H⁺).

Ionized water is considered charged. This is reflected in measurements known as pH and ORP. Quite simply, pH is a measure of OH⁻ (hydroxyl ions) versus H⁺ in solution. ORP, or Oxidation-Reduction Potential is an electrical measure (mV) of how much oxygen demand there is now in solution. The lower the number, the higher available oxygen therefore the more donation of -OH, the higher the number the more demand is put on the solution for available oxygen, thus it is considered more acidic.

While there is great value in creating acids for all forms of chemical processes, the creation of Hydroxyl ions is of particular interest to the healing arts.

Negatively charged or Ionic water and its inherent small cluster size (caused by the violent covalent reaction) is highly alkaline and osmotic in the human body. This osmotic quality is what permits ions to thoroughly permeate cell membranes and deliver an efficient supply of Hydroxyl ions. Negative Ion water scavenges free radicals and assists the body in eliminating toxins through perspiration, urine, and feces.

The body is roughly 60% water. Water is an electrical conductor. When electrolytes in the blood go out of balance, the body becomes vulnerable to disease as the metabolic cell process decreases. Conversely, when the number of negative ions increases, metabolic processes are rehabilitated as the proper pH in the enzyme substrate is remediated.

A higher pH in an acidified enzyme substrate generates higher enzymatic activity which promotes cell life and death. Apoptosis (programmed cell death) failures are found to be at the root cause of serious illness. Failure in programmed cell death results in unmanaged cell propagation. It is therefore critical for enzymes to work properly in order for these life and death cell cycles to occur properly. pH imbalance accounts for one of the four factors in enzyme substrate malfunction; the other three being, temperature, activators and inhibitors (i.e. a bio-chemical agent).



Extreme positive ionization or excess of H^+ in the blood causes acidosis. It can lead to serious illnesses such as diabetes, pregnancy toxemia, vomiting, indigestion among children and adults, lung problems, and serious heart problems. Extreme negative ionization causes basic illnesses such as vomiting of gastric juices.

Nano-Cal is a water ionizer. Its primary role is the creation of Calcium and Magnesium ions as well as Hydroxyl ions in large quantities. The dosage and frequency of usage is critical in delivering the right amount of hydroxyl ions. The monitoring by a physician or trained health professional is recommended with the use of this product.