

## Frequently Asked Questions about Ionized Water

### ***What is Water?***

A water molecule, expressed in the chemical symbol H<sub>2</sub>O, consists of two hydrogen atoms and one oxygen atom.

Standing alone, the hydrogen atom contains one positive proton at its core, with one negative electron revolving around it in a three dimensional shell. Oxygen, on the other hand, contains eight protons in its nucleus with eight electrons revolving around it.

The single hydrogen electron and the eight electrons of oxygen are the key to the chemistry of life, because this is where hydrogen and oxygen atoms combine to form a water molecule, or split to form ions. Hydrogen tends to ionize by losing its single electron and forming single H<sup>+</sup> ions, which are simply isolated protons since the hydrogen atom contains no neutrons. A hydrogen bond occurs when the electron of a single hydrogen atom is shared with another electronegative atom such as oxygen that lacks an electron.

### ***What is Micro Clustered Water?***

Water molecules come in clusters rather than single molecules. Tap water has very large clusters (10 to 13 molecules per cluster). The Micro clustered Water Machines use electrolysis to reduce large tap water clusters from their original size into so called 'Micro clustered' (5 to 6 molecules per cluster). The smaller cluster size gives the water excellent hydrating properties, high solubility and good permeability.

### ***What is the difference between Micro Cluster Water machines and regular water filters?***

Both provide a valuable service as water as it comes out of the tap is basically undrinkable. It has a foul taste and deleterious effects on the body. Water pollution has become more serious (pesticide pollution, detergent pollution, chloride pollution, germs pollution, heavy metal pollution, prescription medicine pollution etc.) because of development in modern cities and the indifferent attitude of the people toward pollution.

Is running water drinkable? In order to realize sterilization, chlorine is added to running water, so that organic chloride and its derivation will form in the running water. Since 1981, the death rate from cancer has ranked first in Japan. Especially, more people died of cancer in big cities, where high content of chloride in running water.

In addition to high-grade filtration, the Micro Cluster Water Machines also reduce the 'macro clusters' found in tap water into 'micro clusters' that are absorbed more easily by the body. The Micro Clustered Water machine also alkalizes the water, turning it into a powerful anti-oxidant, improving immune functions and general health.

### ***I realize that alkaline water is better than tap water, but what about bottled water isn't it about the same?***

We are now in the midst of a water boom. Strangely, even though water is one of the most abundant resources on the Earth, in Japan, Europe, and in the USA, consumers are buying various kinds of bottled and canned water. Yet research data reveals that mineral waters have an ORP (Oxygen Reductive Potential - a measure of anti-oxidant potential) of +200 mV (any positive number is oxidizing rather than anti-oxidizing!), only slightly lower than the +400 mV measured for ordinary tap water. At least mineral water is marginally better for you than tap water. Yet contrasted to any processed water for sale, Alkaline water with its

reduction potential of -250 to -300 mV (negative numbers reflect anti-oxidizing potential) is beyond comparison due to its ability to scavenge active oxygen radicals.

## ***What is electrolysis?***

Filtered water passes into a chamber equipped with platinum-coated titanium electrodes. Here is where the electrolysis takes place.

Cations -- positive ions -- gather at the negative electrodes creating cathodic or reduced water. Anions -- negatively charged ions -- gather at the positive electrode to make anodic or oxidized water.

By this electrolysis process the reduced water not only gains an excess amount of electrons (e-), but the H<sub>2</sub>O clusters are reduced in size from about 10 to 13 molecules per cluster to 5 to 6 molecules per cluster.

## ***What about minerals?***

Inorganic minerals are classified as either acidic or alkaline as such:

ACIDIC: Chlorine, Sulphur, Phosphorus

ALKALINE: Calcium, Sodium, Magnesium, Potassium

## ***What are anti-oxidants and why do we need them?***

Oxidation, which is a regular function of metabolism and cell function, strips an electron from certain molecules. These molecules (called free radicals) then must steal an electron from a nearby molecule to repair themselves, which means that the nearby molecule must steal an electron from another molecule and on and on. This vicious oxidation cycle ends when an electron is taken from a molecule which has an excess electron to donate. These 'donor' molecules are called anti-oxidants and are provided by nature in Vitamin E, Vitamin C, Beta Carotene, Selenium etc.

In biological systems, removal or addition of an electron constitutes the most frequent mechanism of oxidation-reduction reactions. These oxidation-reduction reactions are frequently called redox reactions. Researchers almost universally blame oxidation for premature aging and degenerative diseases. Pollution, chemicals, food additives, pesticides, antibiotics etc are thought to dramatically accelerate the oxidation process, increasing the need for antioxidants. At the same time we are eating more refined foods which have had the vitamins and antioxidants removed or destroyed by processing. Most people take supplements to increase the amount of antioxidants that their body has available and studies have shown that people who regularly take large doses of Vitamins E and C, Beta Carotene, Grape Seed Extract, Alpha Lipoic Acid, and other supplements have much lower rates of heart disease, cancer and chronic degenerative diseases. *Alkaline Micro Cluster Water provides an abundant, easily absorbed supply of antioxidants for the body.*

## ***If Active Oxygen or Free Radicals are so damaging to our cells why does our body produce excess amounts of them?***

Putrefaction sets in when microbes in the air invade the proteins, peptides, and amino acids of eggs, fish and meat. The result is an array of unpleasant substances:

1. Hydrogen Sulfide
2. Ammonia
3. Histamines
4. Indoles
5. Phenols
6. Scatoles

These substances are also produced naturally in the digestive tract, when we digest food, and result in the unpleasant odor evidenced in feces. Putrefaction of spoiled food is caused by microbes in the air; this natural process is duplicated in the digestive tract by intestinal microbes. All these waste products of digestion are pathogenic; this is, they can cause disease in the body. Hydrogen sulfide and ammonia are tissue toxins that can damage the liver. Histamines contribute to allergic disorders such as atopic dermatitis, urticaria (hives) and asthma. Indoles and enols are considered carcinogenic.

Excessively offensive stools caused by the presence of toxins are indicators of certain diseases, and the body responds to the presence of these toxins by producing neutrophil leukocytes, which release active oxygen in an attempt to neutralize the damage to organs can be caused by such waste products. But when an excess amount of such active oxygen is produced, it can damage healthy cells as well as neutralize toxins. This leads us to the conclusion that we can minimize the harmful effects of these active oxygen radicals by reducing them with an ample supply of electrons.

For our body to function and to maintain body temperature, we burn nutrients within our cells. The main ingredients of all foods, expensive or inexpensive, gourmet or junk, vegetable or meat, alkaline or acid, are either carbohydrates, proteins or fats. And they are nothing but the combinations of four elements: carbon, nitrogen, hydrogen and oxygen.

After these nutrients are burned (oxidized) in the cells, they all turn into organic acids: carbonic acids, uric acids, lactic acids, fatty acids, ammonia, etc. Fats are acidic even before oxidation. The Chinese word for oxygen is written with two characters, "sahn-so". They literally mean "acid root".

## ***What is meant by alkaline and acid? What does pH stand for?***

PH stands for 'Power of Hydrogen'. Water molecules are made up of two Hydrogen atoms and one Oxygen atom (H<sub>2</sub>O). Hydrogen atoms are the smallest atoms in the universe, having only a single proton and a single electron. Hydrogen is estimated to form 90% of the matter in the universe.

Living things are extremely sensitive to pH and function best (with certain exceptions, such as different portions of the digestive tract) when solutions are nearly neutral. Most interior living matter (excluding the cell nucleus) has a pH of about 6.8.

Blood plasma and other fluids that surround the cells in the body have a pH of 7.2 to 7.45. A blood pH of 6.9 could induce coma and possibly death to the body. So the body possesses numerous special mechanisms to aid in stabilizing these fluids so that cells will not be subject to appreciable fluctuations in pH.

Substances which serve as mechanisms to stabilize pH are called buffers. Buffers have the capacity to bond ions and remove them from solution whenever their concentration begins to rise. Conversely, buffers can release ions whenever their concentration begins to fall, thus helping to minimize the fluctuations in pH. This is an important function because many biochemical reactions normally occurring in living organisms either release or use up ions.

The degree of acidity or alkalinity of a solution is measured in terms of a value known as pH, which is the negative logarithm of the concentration of hydrogen ions (hydrogen atoms that have been stripped of their electron). The higher the concentration of Hydrogen ions the more acidic the water is.

The opposite of this is molecules that contain a large concentration of hydroxide ions (molecules that have one or more extra electrons). This water is called alkaline. When a molecule has excess electrons it is called 'reduced' and when it has too few electrons it is called 'oxidized'. Alkaline Water readily donates its abundant electrons to render excessive free radicals harmless so that they do not "steal" electrons from healthy living cells. Acid water is oxidized and steals electrons from nearby molecules. This gives it anti-bacterial and anti-fungal properties.

The body needs both acidic and alkaline reactions, the acidic to rid itself of bacteria, fungus, viruses, pollutants, toxins etc. and the alkaline to cool, cleanse and restore the cells. In Eastern thought the concepts of acid and alkaline have been closely linked to yin (acid) and yang (alkaline). The balance of these forces is considered to lead to good health. But the truth is most of the food in our modern diet is too acidic and produces an imbalance in the form of acidity in the body. The Macrobiotic diet urges that one eat

alkaline (yang) food and avoid acidic (yin) food. Another approach is to take anti-oxidant supplements (such as Vitamin C and Vitamin E) to reduce the free radicals and stop the excessive oxidation. Drinking Alkaline water is probably the best approach to solving this imbalance since it has an abundance of electrons to donate and it is easily absorbed into all cells and intra-cellular structures of the body.

## ***What is Redox and Redox potential?***

Redox is a combination of the words reduction (having excess electrons) and oxidation (missing electrons). It is expressed in a scale that has positive and negative notations. The negative values represent substances that have an excess of electrons and the positive the substances that have a lack of electrons.

The best anti-oxidants are those that have the largest negative Redox value. Traditionally, we have judged the properties of water from the standpoint of pH - whether water is acid or alkaline. Yoshiaki Matsuo, Ph.D., the inventor of the water ionizer says:

**"In my own opinion, redox potential is a more important factor to good health than pH. The importance of pH is overemphasized. For example, the average pH of blood is 7.4 and acidosis or alkalosis are defined according to deviation within the range of 7.4 to 0.05. But nothing has been discussed about ORP, or oxidation-reduction potential."**

Is water really important for health? I thought food was the main determinant of health. 70% of a human body's weight is water, and water content of an infant is more than 80%. A human body gets old from a lack of water (literally dries up). More than half of the water content of a human body remains in the cells, but does not remain there unmoved. That's why the water quality is a decisive factor for a good health.

Every day a grown-up needs 2.5 liters of water, of which drinking water is about one liter, water from food is an additional liter, and metabolism in the body generates 0.5 liter of water. A grown-up excretes about 2.5 liters of water every day, among which urea is 1.5 liters, defecation contains 0.1 liter of water, sweat is 0.5 liter, water in breathing out is 0.4 liter. Water fed in and water excreted out is basically in balance. A human body drinks more water in hot days in summer and after sports, and excretes more.

Actually the body needs nourishing food, exercise, abundant water, and clean air every day to maintain health. These correspond to the four elements of earth, fire, water and air that the ancient mystics identified as the constituent elements of the human body. We need all four to be healthy. Most people overlook the need for an abundant supply of pure water and fresh air, emphasizing only diet and exercise.

## ***What conditions has Alkaline Micro Cluster Water shown to improve?***

When taken internally, the reduced ionized water, with a redox potential of -250 to -350 mV, readily donates its electrons to oddball oxygen radicals and blocks the interaction of the active oxygen with normal molecules.

Undamaged biological molecules are less susceptible to infection and disease. The alkaline water gives up an extra electron and reduces the active oxygen (AO), thus rendering it harmless.

- ✓ Upset stomach
- ✓ High blood pressure
- ✓ Indigestion
- ✓ Morning sickness
- ✓ Heartburn
- ✓ Diabetes
- ✓ Constipation
- ✓ Osteoporosis
- ✓ Diarrhea
- ✓ Diabetes
- ✓ Poor blood circulation
- ✓ Stomach ache

- ✓ Hyper-acidity
- ✓ Loss of Appetite
- ✓ Chronic fatigue
- ✓ Nausea
- ✓ Common colds
- ✓ Migraines
- ✓ Obesity
- ✓ Muscle aches after exercise
- ✓ Hangovers
- ✓ Urea Stones

Regular consumption of alkaline micro cluster water has brought the following testimonials:

- ✓ Improved energy level and elimination of drowsiness
- ✓ High blood pressure and cholesterol brought under control
- ✓ Ulcer condition for which she took medication
- ✓ Digestive distress improved Acid stomach relief immediately.
- ✓ Migraines have disappeared.
- ✓ Constipation of many years has disappeared
- ✓ Ringing in the ear and dizziness have both been corrected
- ✓ Severe acne condition corrected.
- ✓ Less use of prescription drugs
- ✓ Lost and maintained weight.
- ✓ Blood circulation improved.
- ✓ Urea stones dissolved.
- ✓ Cancer patient's vomiting corrected after 3 days of use.
- ✓ Nausea eliminated.
- ✓ Increased feeling of wellness and energy.
- ✓ Chronic diarrhea has been corrected.
- ✓ Athletic aches/pains minimized.
- ✓ Better athletic performance.
- ✓ Weight loss of 15 pounds in 3-month period achieved.

The prevention/reversal of: High blood pressure, Diabetes, Poor blood circulation, Morning sickness, Common colds, Hyper-activity, Osteoporosis, Migraines, Constipation, Diarrhea, Chronic fatigue, Obesity, Induces faster healing, Body odor, Water retention, Urea Stones, Hangovers, muscle aches after exercise.

## ***What about Acid Water? What is it good for?***

Acid water is for topical (external) use and has shown good results in the following applications:

- ✓ Wounds heal faster
- ✓ Rashes dry up
- ✓ Psoriasis
- ✓ Hemorrhoids
- ✓ Relieves eczema
- ✓ Blisters heal faster
- ✓ Reduces acne
- ✓ Softens dry rough skin
- ✓ Good hair rinse
- ✓ Athletes foot
- ✓ Relieves chronic eye dryness
- ✓ Insect bites
- ✓ Washing foods (as a disinfectant)
- ✓ Dandruff
- ✓ Garden use (as insecticide)
- ✓ Mouth sores
- ✓ Plants love Acid micro molecule water
- ✓ Tighten skin quickly and reduces wrinkles
- ✓ Makes pet's coats healthy and clean

- ✓ Hair loss significantly reduced by rinsing hair
- ✓ Acid micro molecule water is ideal water for Spa, Sauna and Facial work

## ***Does Alkaline Water slow down aging and if so how?***

Bad diet, either a present one or one in the past, can cause acid wastes to be stored in the body. A meat and potato diet, for example, can cause the body to become more acidic. When acid wastes enter our bloodstream, the blood, in order to maintain that narrow pH range, will store them somewhere else. Acid salts stored in the body, over the decades, will overburden the system. A way has to be found to rid the body of wastes.

The body uses the blood system to dispose of wastes; these are removed in liquid form, and are often deposited in the lungs and kidneys. If there are too many wastes to handle, they are deposited at various organ systems, like the heart, the pancreas, the liver, the colon, and other locations. Sometimes these wastes are deposited on the walls of arteries, and over the years can spread throughout the body.

The breakdown of this disposal process, especially of acid wastes, is what we call the aging process. In order to slow down and reverse this process, one must begin removing acid waste from the body. The best way we have found to do this is to drink alkaline water. This water, having a pH of between 9 and 11, will first neutralize harmful stored acid wastes, and if you consume it every day, will gently remove them from your body. Yet, since the water is ionized, it will not leach out valuable alkaline minerals like calcium, magnesium, potassium, or sodium.

Japanese doctors have treated their patients for over four decades with alkaline water. They believe that the immune system loses its power to throw off disease when the body becomes too acidic. They advocate drinking alkaline water, eating alkaline foods.

## ***How much water should I drink every day?***

Doctors say at least 8 glasses per day. You are to drink no more than your body weight in ounces.

## ***How much is too much alkaline in my system?***

Doctors say it's difficult for someone to be too alkaline.

## ***What should the ideal pH level be?***

Above 7 for drinking and below 7 for cleaning and skin care.