

## Alkaline Water and Stomach Acid

Among the people who question the validity of alkaline water, the biggest question is, "What happens to the alkaline water once it reaches the stomach, which is highly acidic?" People, who have some knowledge of the human body, including medical doctors, ask this question. Let me answer that question once and for all to erase any doubts about the health benefits of alkaline water.

In order to digest food and kill the kinds of bacteria and viruses that come with the food, the inside of our stomach is acidic. The stomach pH value is maintained at around 4. When we eat food and drink water, especially alkaline water, the pH value inside the stomach goes up. When this happens, there is a feedback mechanism in our stomach to detect this and commands the stomach wall to secrete more hydrochloric acid into the stomach to bring the pH value back to 4. So the stomach becomes acidic again. When we drink more alkaline water, more hydrochloric acid is secreted to maintain the stomach pH value. It seems like a losing battle.

However, when you understand how the stomach wall makes hydrochloric acid, your concerns will disappear. There is no hydrochloric acid pouch in our body. If there were, it would burn a hole in our body. The cells in our stomach wall must produce it on an instantly-as-needed basis. The ingredients in the stomach cell that make hydrochloric acid (HCl) are carbon dioxide (CO<sub>2</sub>), water (H<sub>2</sub>O), and sodium chloride (NaCl) or potassium chloride (KCl).  $\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2 = \text{HCl} + \text{NaHCO}_3$ , or  $\text{KCl} + \text{H}_2\text{O} + \text{CO}_2 = \text{HCl} + \text{KHCO}_3$

As we can see, the byproduct of making hydrochloric acid is sodium bicarbonate (NaHCO<sub>3</sub>) or potassium bicarbonate (KHCO<sub>3</sub>), which goes into blood stream. These bicarbonates are the alkaline buffers that neutralize excess acids in the blood; they dissolve solid acid wastes into liquid form. As they neutralize the solid acidic wastes, extra carbon dioxide is released, which is discharged through the lungs. As our body gets old, these alkaline buffers get low; this phenomenon is called acidosis. This is a natural occurrence as our body accumulates more acidic waste products. There is, therefore, a relationship between the aging process and the accumulation of acids.

By looking at the pH value of the stomach alone, it seems that alkaline water never reaches the body. But when you look at the whole body, there is a net gain of alkalinity as we drink alkaline water. Our body cells are slightly alkaline. In order for them to produce acid, they must also produce alkaline, and vice versa; just as a water ionizer cannot produce alkaline water without producing acid water, since tap water is almost neutral.

When the stomach pH value gets higher than 4, the stomach knows what to do to lower it. However, if the pH value goes below 4, for any reason, the stomach doesn't know what to do. That's why we take Alka-Seltzer, which is alkaline, to relieve acidic stomach gas pain. In this case, hydrochloric acid is not produced by the stomach wall, therefore, no alkaline buffer is being added to the blood stream.

Let me give you another example of a body organ that produces acid in order to produce alkaline. After the food in the stomach is digested, it must come out to the small intestine. The food at this point is so acidic that it will damage the intestine wall. In order to avoid this problem, the pancreas makes alkaline juice (known as pancreatic juice). This juice is sodium bicarbonate, and is mixed with the acidic food coming out of the stomach. From the above formulae, in order to produce bicarbonates, the pancreas must make hydrochloric acid, which goes into our blood stream.

We experience sleepiness after a big meal (not during the meal or while the food is being digested in the stomach), when the digested food is coming out of the stomach; that's the time when hydrochloric acid goes into our blood. Hydrochloric acid is the main ingredient in antihistamines and that is what causes drowsiness.

Alkaline or acid produced by the body must have an equal and opposite acid or alkaline produced by the body; therefore, there is no net gain. However, alkaline supplied from outside the body, like drinking alkaline water, results in a net gain of alkalinity in our body.

### **Aging and Reverse-Aging**

We live in a century of highly accelerated advancements in science and technology. At the turn of the century, man began to fly. Today, we can even fly to the moon. Isn't it reasonable to expect that science today should discover the technology of reverse aging? Well, it has! This series of articles is to explain scientifically the simple truth about the process of aging, how to combat the aging process and going further, how to attempt to reverse this process.

Here is the simple process of aging. Every living cell within our body creates waste products. The nutrients from our food are delivered to each cell and they burn with oxygen to provide energy for us to live. The burned nutrients are the waste products. Whether you eat gourmet or junk food, all food generates waste products. The food that is either good or bad for you is determined by the amount and quality of the wastes produced: toxic, acid, alkaline, etc. Most of our cells go through metabolism and old dead cells become waste products.

These waste products must be discharged from our body. In fact, our body tries its best to dispose of them through urine and perspiration. Virtually all waste products are acidic; that is why urine is acidic and skin surface is also acidic. The problem is that, due to several reasons, our body cannot get rid of 100% of the waste products it produces.

The main reason for this is our life style. We stay up late and get up early. We do not take time to rest; some of us work more than one job. We, therefore, spend more time producing waste products than processing and discharging them.

The second reason is food. Most of the food we like is mainly acidic. Acidic food does not necessarily mean that it tastes acidic, but that the wastes it produces are acidic. Grains and meats are mainly acidic; fruits and vegetables are alkaline. Citric fruits may taste acidic but they are considered to be alkaline because they contain alkaline minerals.

The third reason is our environment. More healthy cells are killed by air, water and soil pollution than the natural death of cells caused by normal metabolism. Thus, more waste products are created.

The question is: "What happens to those non-disposed acidic waste products?" The answer is simple. These waste products become solid wastes, such as, cholesterol, fatty acid, uric acid, kidney stones, urates, phosphates, sulfates, etc., and, unknown to us, they accumulate and build-up somewhere within our body. This accumulation of non-disposed acidic wastes within our body is the aging process..

Alkaline neutralizes acid. Drinking alkaline water helps our body dissolve acid wastes and make it easier for the body to dispose of them safely. Since the accumulation of acid wastes is aging, the reduction of acid wastes is reverse aging. Alkaline water is not a medicine to cure any disease. However, if consumed regularly, alkaline water gradually reduces the accumulated acid wastes. As a result of acid reduction, there are many reports of natural health improvement in Japan.

We use alkaline soap to wash acidic dirt accumulated on our skin; we must wash the acidic dirt accumulated within our body by using alkaline water. Alkaline water has been available in Asia for over 30 years(2); water ionizers to produce alkaline water have been approved by Japanese government agencies as medical devices(3).

In future publications, more detailed scientific explanations will be discussed on the subjects of water, acidity and alkalinity, effects of acidic wastes on the human body, causes of some adult diseases, effects of alkaline water, and simple methods of making alkaline water.

1) Whang, Sang - Reverse Aging, JSP Publishing, Miami, FL, 1990

2 )Sung Bong - "History of Alkaline Water Maker", Seoul, Korea, 1985

3) Japan Government Publication - "Table of Health Treatment Devices, Category Classification and Affectivity", Division of Drug Administration, Health & Rehabilitation Department, Tokyo Japan. Original Publication, Oct., 1965. Latest Edition, March 1985

### **Alkaline Water Benefits**

Fluid replacement promotes optimal physical performance. Electrolyzed-reduced water scavenges active oxygen & protects DNA from oxidative damage.

Declines in blood sugar levels in diabetic patients.

Improvements in liver function exams in hepatic disorders. Improvements in gastroduodenal ulcer and prevention of their recurrences. 3

Improvements in allergic disorders such as asthma, urticaria, rhinites and atopic dermatitis.

Improvements in hypertension and hypotension.

Alkaline ionized water was regarded to be effective for improvements of osteogenesis under the conditions of insufficient calcium. Improvements in serum bilirubin levels in new born babies. Ionized water suppressed the growth of cancer cells transplanted into mice, demonstrating their anti-cancer effects/

### **Acid Water Benefits**

Inactivation of Escherichia coli and Listeria on plastic kitchen cutting boards by electrolyzed oxidizing water.

Reductions between 91.1% and 99.8% in the bacterial load of treated alfalfa sprouts.

Foodborne pathogens can be reduced by electrolyzed oxidizing water.

Electrolyzed oxidizing water may be a useful disinfectant for hospital infections.

Effect of electrolyzed oxidizing water and hydrocolloid occlusive dressings on excised burn-wounds.

Electrolyzed anode water markedly extended the vase life of cut carnation flowers.

Ionized water will be applicable to not only medicine but also food, agriculture, and manufacturing industries.