

Kangen Water™ Research Library

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**A simple “Fish Bowl” explanation
of the “Human-Cell-Environment”**

A Fish Bowl - - - 100% <u>Water</u>	The Human Body - - - about 70% <u>Water</u>
<p>Fish swimming in a fish bowl → surrounded by water → fish food dumped on top of water → fish eat the food → fish metabolize the food and turn it into energy → fish excrete the waste back into the water</p> <p>If we don't remove the waste, what happens?</p> <p>If the fish get sick, what “<u>drug</u>” would you recommend we give them?</p>	<p>Human Body Cells → surrounded by interstitial “water’ fluids → nutrition brought in by the blood → cells absorb the food → cells metabolize the food and turn it into energy → cells excrete the waste back into the fluid</p> <p>If we don't remove the waste, what happens?</p> <p>If a person gets sick, what “<u>drug</u>” would you recommend we give them?</p>
<p>What happens if we just change the <u>Water</u>?</p>	<p>What happens if we just change the <u>Water</u>?</p>

Change Your WaterChange Your Life

Uses For Water Produced From Enagic's Water Ionizer Machine

- 1 **Daily drinking Kangen Water™.** To keep the body properly hydrated, alkalized and detoxed to achieve/maintain good health.
- 2 **For taking supplements.** Kangen Water™ has outstanding dissolving, extracting and anti-oxidizing properties that will enhance the effectiveness of any supplements you may be taking.
- 3 **As a skin toner.** Use the produced mild acid 5.5 pH water as a skin toner to give your skin a healthy, radiant shine.
- 4 **After consuming alcohol.** Dilute the acidity of the alcohol and **prevent** hangovers. Use Kangen Water™ ice cubes with your drinks and ingest a sufficient quantity of Kangen Water™ before bed to prevent a hangover.
- 5 **For drinking during meals.** When eating acidic foods such as meat, egg yolks, white bread, etc, drinking Kangen Water™ will help balance the pH.
- 6 **For brewing tea and coffee.** Kangen Water™ prevents tannin in the tea and allows the tea to infuse fully, creating a rich color and taste. In coffee, Kangen Water™ brings out the aroma, color and naturally acidic taste. Only half the amount of coffee beans are required to create the same full taste.
- 7 **For cooking.** Kangen Water™ can be used to soak vegetables and meats, eliminating the strong smells of onions or any game meat, for example. Kangen Water™ will bring out the natural flavors in vegetables as well as a rich color in spinach and other greens. This natural flavor will require less stocks and seasonings to be used. Kangen Water™ also has stronger heat conduction than regular water, effectively cutting as much as 30% from cooking times. There are an estimated 30,000 restaurants and eateries in Japan already using Kangen Water™ to prepare their food and the quality and cleanliness of Japanese food is world-renowned.
- 8 **For cut flowers and plants.** Plants experience great results when watered with Kangen Water™. The life of cut flowers can be lengthened and health restored to sick plants. Seeding and germination are also enhanced using the water and for varieties such as roses, which require a more acidic environment, simply select an acidic setting of water for use.
- 9 **For pets.** When drinking 8.5 alkaline Kangen Water™, unpleasant odors from both their bodies and waste will be eliminated. They will also experience the same great health benefits as humans.
- 10 **For Artists and Painters.** Kangen Water™ is exceptional when mixing paints. Colors are more vibrant and a smoother texture is created. The brush glides across the surface with ease.
- 11 **As an anti-bacterial cleaner.** Use the produced strong acidic water setting to create a 100% safe and natural anti-bacterial cleaner. Kills 99.9% of bacteria on contact. Can also be sprayed directly onto the skin and into the throat to prevent a cold. Also ideal as a 100% safe alternative for bathrooms, baby areas and toys.
- 12 **As an all-purpose cleaner.** Use the strong alkaline water setting to create a natural, chemical free cleaner for glass, tiles, bench tops, etc.

Kangen Water™ pH 8.0-9.5

- Drinking Water - All Purpose: ice cubes, for mealtimes with acidic foods. Through Continued use, your body can become more alkaline which is necessary for health. Drink 2 liters a day. Replenishes Calcium levels.
- Brewing Tea, coffee- improves taste, color and aroma
- Preparing Soups - draws out natural flavors
- Diluting Seasonings such as soy sauce
- Pre-boiling vegetables to enhance flavor
- Blanch Green Vegetables
- Reduced cooking time due to increased heat conduction
- Watering plants and preserving cut flowers - Us pH 9.0
- Germinating Seeds and seedlings
- Drinking water for pets
- Dyeing clothing - Vibrant Colors

Acidic Water pH 4.0-6.5 (Beauty Setting)

- As an astringent
- Boiling Pasta -"al dente" and thicker types of pasta
- Cooking Beans -speeds up cooking time
- Fruits and Vegetables - Washing and Preparing
- Boiling Eggs - shells peel off easily; if egg cracks, yolk remains in shell
- Freezing foods such as shrimp and fish- spray when freezing to preserve flavor
- Cleaning burned pots and pans; Cleaning tea and coffee stained cups (soak for 24 hours)
- Washing dishes
- Polishing mirrors, eyeglasses, windows
- Housecleaning
- Bath water - for skin cleaning and tub cleaning
- Hair care- use instead of cream rinse
- Washing clothes - soak before spin cycle for softening clothes
- Pet care - grooming

Strong Kangen Water™ pH 11.0 or higher

- Dish Washing - use less water for washing and rinsing
- Cleaning - Oil and grease, floors, stubborn toilet bowl stains
- Stain Removal- coffee, oil
- Rinsing Fresh Fish

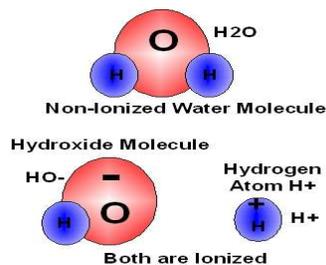
Strong Acidic pH 2.7 or lower

- Anti-bacterial
- Cleaning Molds, Mildews, fungus
- Disinfect utensils, dishes, containers, medical equipment, cutting boards
- Disinfect hands

Ionization Of Kangen Water™

An Ion is simply an atom or molecule that has lost or gained one or more electrons. In the case of ionized water, that will be exactly one electron lost or gained. Ions are created by chemical action, heat, radiation, and electricity - in our case, electrolysis of water.

A water molecule consists of one atom of oxygen and 2 atoms of hydrogen as illustrated to the left. During electrolysis of water, something happens to many of the water molecules. They are ionized. For that to happen, the bond must be broken between the atoms making up the molecule. The bond between oxygen and hydrogen is not very strong. It is easily broken.



When the bond is broken, one of the hydrogen atoms leaves. Since oxygen has a stronger pull (similar to the pull of gravity) than hydrogen, the hydrogen atom that leaves is stripped of its only electron and it becomes a positive hydrogen ion.

Positive ions are not good. They steal electrons from other molecules leaving damage in their wake. Not to worry. Remember, the positively charged hydrogen ion was expelled with all the other positively charged bad stuff through the acid hose during electrolysis. It does not end up in our Kangen Water™.

What does end up in Kangen Water™ is the hydroxide molecule that is left when a water molecule loses a hydrogen atom. The hydroxide molecule has an extra electron. It is a negatively charged ion. That is good. More about this later, but for now, suffice it to say that the more of these hydroxide molecules, the better - and that depends on the number and size of electrode plates and how slowly the water passes over them.

Free Radicals

You've heard of the notorious oxygen free radical. It is simply an ionized atom of oxygen that has lost an electron. Oxygen is tenacious. It WILL get that electron back. It can steal one from almost any other molecule, including iron. When that free radical steals an electron, it leaves behind a damaged molecule which itself is now missing an electron and begins to act like a free radical itself - causing a chain reaction of damaged cells that can only be stopped by an antioxidant, but more about that later.

Free radicals are everywhere. Perhaps the main supply of them is in the air we breathe. We can't get away from them. When a free radical steals an electron from an iron molecule, it causes the

iron to rust. No matter where it steals from, it causes corrosion called oxidation. It is the resulting oxidation of our cells that causes us to age and causes a multitude of diseases and ailments.



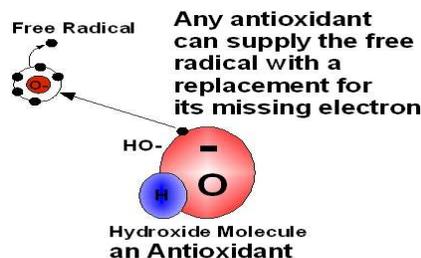
The only way to fight free radicals is with antioxidants. We can never get enough of them. That's why many people swallow huge numbers of vitamins and especially large vitamin C tablets. If we did have enough antioxidants, we could not only fight off the free radicals that are invading our bodies right now, but we could also repair the damage left behind by past free radicals. Isn't that a radical idea!?

Antioxidants

Kangen Water™ contains huge doses of negative hydroxide ions. Again, the amount depends on the number and size of the electrode plates in the water ionizing machine and how slow the water passes over them.

Each hydroxide ion is an antioxidant just spoiling for a fight with an oxygen free radical. It has an extra electron and wants to get rid of it. In fact, it wants to get rid of it so bad, that it is highly unstable. That is one of the reasons Kangen Water™ cannot be bottled and stored for a long time on the shelf - it will lose its antioxidant value! You need one of our machines! You should drink the water as fresh out of the machine as possible, but anytime within 24 hours is still very healthy. If someone tells you their bottled water is antioxidant and "restructured" (into micro clusters - more on those later) don't believe it!

In fact, that hydroxide molecule may just be the best antioxidant there is. And you get huge daily doses of it when you drink nearly a gallon a day or more of Kangen Water™. There is as much antioxidant value in a single glass of Kangen Water™ as in several dollars worth of vitamin C, A, and E. This feature along with Kangen Water's™ alkaline and micro cluster features may explain why Enagic chose the name "Kangen" for its water. Kangen means to return to original and it is thought that it will help your body to restore itself and all its organs to their original youthful condition.



Since you'll now have enough antioxidants, and to spare, isn't it important that you have the right kind of antioxidants? The molecular weight of a hydroxide molecule is only 18. All other antioxidants have molecular weights of more than 100! Take a look at the following table...

Kangen Water™ & Common Antioxidants	Molecular Weight
Kangen Water™	18
Vitamin A (Beta-Carotene)	150
Vitamin E	153
Vitamin C	176

That means that hydroxide molecules can get into your cells. Even diseased cells that have had their cell walls hardened by oxidation caused by free radicals. And, oxidized cell walls don't let in much. They keep out lots of nutrients even when you are eating right, and they keep heavy metals in. Kangen Water™ will help your body to repair those cells and make them healthy again.

Remember for later that free radicals damage molecules and cells in our body and that damage is called oxidation. I'll say a little more about oxidation in the next slide and give some proof that Kangen Water™ really is a powerful antioxidant.

Oxidation Reduction Potential (ORP)

How do we prove that Kangen Water™ is loaded with antioxidants? Simple. With an ORP meter. What's that you say? Let me explain.

Free radicals are missing an electron and that means they are positively charged. An antioxidant (in our case, hydroxide) has an extra electron to give away and that means it is negatively charged. If water shows a positive voltage on an ORP meter that means the water is loaded with free radicals. If water shows a negative voltage on an ORP meter that means the water is loaded with hydroxide antioxidants.

Remember again that the damage caused by free radicals is called oxidation. An ORP meter measures Oxidation-Reduction Potential. It shows the electrical charge present in the water. A positive reading shows that the water has a potential to cause oxidation or corrosion or rust. A negative reading shows that the water has a potential to reduce oxidation or corrosion or rust. Water with negative ORP readings simply does not occur in nature!

In fact, a rusty nail left long enough in Kangen Water™ will be restored to its new, shiny, bright condition. It doesn't just stop the rust; it reverses it - that's oxidation reduction at its best! And your organs will receive the same friendly treatment from Kangen Water™.

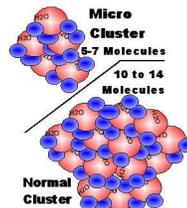
The picture at the top of the next page shows ORP readings for tap water (+383 lots of free radicals), bottled water (+393 even more free radicals), and Kangen Water™ (a whopping -497 loaded with antioxidant hydroxide!). Notice that bottled water you pay so much for is both more acidic and more loaded with free radicals than common tap water.



Micro Clustering

Water molecules stick together in clusters. A normal cluster contains up to 14 water molecules. Electrolysis breaks the bonds between the oxygen and hydrogen atoms in a water molecule to form hydroxide (antioxidant) and hydrogen ions. Electrolysis also breaks the bonds between water molecules in clusters forming smaller clusters.

The small clusters in Kangen Water™ contain as few as 5 water molecules. These small clusters can go wherever they want inside your body. They make the water an even better solvent. It more readily dissolves the nutrients in your food and your nutritional supplements - and carries those nutrients (and the hydroxide antioxidant ions) into even the smallest capillaries of your body to the most neglected cells.



Not only will this more solvent water improve your nutrition, it will greatly improve your hydration! I have heard with my own ears several people say they have consumed a gallon or more of water a day for years only to go to their doctor and receive a diagnosis of dehydration!!! Unless your cells are healthy, tap water will not hydrate them properly, but Kangen Water™ will!

Hydration enables regular and improved bowel movements. It enables the body to rid itself of joint pains. Kangen Water™ is the "wettest" water you can drink. Proper hydration adds immeasurably to your overall health and its importance to you and your family should not be underestimated.

A warning is in order here. Kangen Water™ should not be used to swallow prescription medication. It simply makes it work too fast and too effectively and that may not be what the doctor had in mind when he or she decided on the proper dose for you.

While Kangen Water's™ solvent power may not be what you want when taking prescriptions, it is very good for other things like when you eat healthy foods or take nutritional supplements. I had the following experience when I had a headache a few months ago. I took extra strength Excedrin. Usually, I have to lie down and stay quiet for Excedrin to take effect in about 30 minutes. I took this Excedrin with Kangen Water™ and I just kept working and in 5 minutes my headache was gone!

The 3 main features of Kangen Water™ work together in a symbiotic relationship that can't be matched. They say oil and water don't mix. Well, that's true when you are talking about tap water. Notice how the oil and water separated in the glass of tap water on the left. But, it's but not true with Kangen Water™. The oil in the glass of Kangen Water™ on the right was emulsified immediately on contact with Kangen Water™ into a sort of a beige milkshake, and it will stay that way.



Micro clusters, like hydroxide ions, are unstable. The molecules will bond again into larger clusters over time. Again, the size and number of the electrode plates and how slowly the water passes over them all help to determine the size of the micro clusters and how long it will take the water molecules to re-bond into large clusters again. So, again it matters how long you keep the water after it comes from the machine until you drink it. You simply can't store this water for a long time and expect to get the same antioxidant and micro cluster benefit as from freshly ionized water! You should drink Kangen Water™ within 24 hours. Again, you need one of our machines! If someone tells you their bottled water is antioxidant and "restructured" (into micro clusters) don't believe it.

Acid - Alkaline Balance

The Cause of Disease

Have you ever wondered if many of the diseases raging through our society have a common cause? Many doctors, herbalists and nutritionists believe that the explanation may come down to three words:

Acid Alkaline Imbalance

Over acidity, which can become a dangerous condition that weakens all body systems, is very common today. It gives rise to an internal environment conducive to disease, as opposed to a pH-balanced environment that allows normal body function necessary for the body to resist disease. A healthy body maintains adequate alkaline reserves to meet emergency demands. When excess acids must be neutralized our alkaline reserves are depleted leaving the body in a weakened condition.

The concept of acid alkaline imbalance as the cause of disease is not new. In 1933 a New York doctor named William Howard Hay published a groundbreaking book, *A New Health Era* in which he maintains that all disease is caused by **autotoxication** (or "self-poisoning") due to acid accumulation in the body:

Now we depart from health in just the proportion to which we have allowed our alkalies to be dissipated by introduction of acid-forming food in too great amount... It may seem strange to say that all disease is the same thing, no matter what its myriad modes of expression, but it is verily so. William Howard Hay, M.D.

More recently, in his remarkable book *Alkalize or Die* (see recommended reading), Dr. Theodore A. Baroody says essentially the same thing:

The countless names of illnesses do not really matter. What does matter is that they all come from the same root cause...too much tissue acid waste in the body! Theodore A. Baroody, N.D., D.C., Ph.D.

Understanding pH

pH (potential of hydrogen) is a measure of the acidity or alkalinity of a solution. It is measured on a scale of 0 to 14—the lower the pH the more acidic the solution, the higher the pH the more alkaline (or base) the solution. When a solution is neither acid nor alkaline it has a pH of 7.0 that is neutral.

Water is the most abundant compound in the human body, comprising 70% of the body. The body has an acid-alkaline (or acid-base) ratio called the pH that is a balance between positively charged ions (acid-forming) and negatively charged ions (alkaline-forming.) The body continually strives to balance pH. When this balance is compromised many problems can occur.

It is important to understand that we are not talking about stomach acid or the pH of the stomach. We are talking about the pH of the body's fluids and tissues that is an entirely different matter.

Test Your Body's Acidity or Alkalinity with pH Strips:

It is recommended that you test your pH levels to determine if your body's pH needs immediate attention. By using pH test strips, you can determine your pH factor quickly and easily in the privacy of your own home. If your urinary pH fluctuates between 6.0 to 6.5 in the morning and between 6.5 and 7.0 in the evening, your body is functioning within a healthy range. If your saliva stays between 6.5 and 7.5 all day, your body is functioning within a healthy range. The best time to test your pH is about one hour before a meal and two hours after a meal. Test your pH two days a week.

Most people who suffer from unbalanced pH are acidic. This condition forces the body to borrow minerals—including calcium, sodium, potassium and magnesium—from vital organs and bones to buffer (neutralize) the acid and safely remove it from the body. Because of this strain, the body can suffer severe and prolonged damage due to high acidity—a condition that may go undetected for years.

Mild acidosis can cause such problems as:

- **Cardiovascular damage, including the constriction of blood vessels and the reduction of oxygen.**
- **Weight gain, obesity and diabetes.**
- **Bladder and kidney conditions, including kidney stones.**
- **Immune deficiency.**
- **Acceleration of free radical damage, possibly contributing to cancerous mutations.**
- **Hormone concerns.**
- **Premature aging.**
- **Osteoporosis; weak, brittle bones, hip fractures and bone spurs.**
- **Joint pain, aching muscles and lactic acid buildup.**
- **Low energy and chronic fatigue.**
- **Slow digestion and elimination.**
- **Yeast/fungal overgrowth.**

pH and Bone Loss:

A recent seven-year study conducted at the University of California, San Francisco, on 9,000 women showed that those who have chronic acidosis are at greater risk for bone loss than those who have normal pH levels. The scientists who carried out this experiment believe that many of the hip fractures prevalent among middle-aged women are connected to high acidity caused by a diet rich in animal foods and low in vegetables. This is because the body borrows calcium from the bones in order to balance pH. — *American Journal of Clinical Nutrition*

Urine pH

Urine testing may indicate how well your body is excreting acids and assimilating minerals, especially calcium, magnesium, sodium and potassium. These minerals function as "buffers." Buffers are substances that help maintain and balance the body against the introduction of too much acidity or too much alkalinity. Even with the proper amounts of buffers, acid or alkaline levels can become extreme. When the body ingests or produces too many of these acids or alkalis, it must excrete the excess. The urine is the perfect way for the body to remove any excess acids or alkaline substances that cannot be buffered. If the average urine pH is below 6.5 the body's buffering system is overwhelmed, a state of "autotoxication" exists, and attention should be given to lowering acid levels.

Saliva pH

The results of saliva testing may indicate the activity of digestive enzymes in the body. The stomach, liver and pancreas primarily manufacture these enzymes. While the saliva also utilizes buffers just like the urine, it relies on this process to a much lesser degree. If the saliva pH is too low (below 6.5), the body may be producing too many acids or may be overwhelmed by acids because it has lost the ability to adequately remove them through the urine. If the saliva pH is too high (over 6.8), the body may suffer greatly, e.g. excess gas, constipation and production of yeast, mold and fungus. Some people will have acidic pH readings from both urine and saliva—this is referred to as "double acid."

Keeping the Balance Right for Excellent Health

Your body is able to assimilate minerals and nutrients properly only when its pH is balanced. It is therefore possible for you to be taking healthy nutrients and yet be unable to absorb or use them. If you are not getting the results you expected from your nutritional or herbal program, look for an acid alkaline imbalance.

What Causes Me to be Acidic?

The reason acidosis is more common in our society is mostly due to the typical American diet, which is far too high in acid-producing animal products like meat, eggs and dairy, and far too low in alkaline-producing foods like fresh vegetables. Additionally, we eat acid-producing processed foods like white flour and sugar and drink acid-producing beverages like coffee and soft drinks. We use too many drugs, which are acid forming; and we use artificial chemical sweeteners like NutraSweet, Equal, or aspartame, which are extremely acid forming. One of the best things we can do to correct an overly acidic body is to clean up the diet and lifestyle. Refer to the recommended reading for specific help with diet and lifestyle.

Most Alkaline	Alkaline	Lowest Alkaline	FOOD CATEGORY	Lowest Acid	Acid	Most Acid
Stevia	Maple Syrup, Rice Syrup	Raw Honey, Raw Sugar	SWEETENERS	Processed Honey, Molasses	White Sugar, Brown Sugar	NutraSweet, Equal, Aspartame, Sweet 'N Low
Lemons, Watermelon, Limes, Grapefruit, Mangoes, Papayas	Dates, Figs, Melons, Grapes, Papaya, Kiwi, Blueberries, Apples, Pears, Raisins	Oranges, Bananas, Cherries, Pineapple, Peaches, Avocados	FRUITS	Plums, Processed Fruit Juices	Sour Cherries, Rhubarb	Blackberries, Cranberries, Prunes
Asparagus, Onions, Vegetable Juices, Parsley, Raw Spinach, Broccoli, Garlic	Okra, Squash, Green Beans, Beets, Celery, Lettuce, Zucchini, Sweet Potato, Carob	Carrots, Tomatoes, Fresh Corn, Mushrooms, Cabbage, Peas, Potato Skins, Olives, Soybeans, Tofu	BEANS VEGETABLES LEGUMES	Cooked Spinach, Kidney Beans, String Beans	Potatoes (without skins), Pinto Beans, Navy Beans, Lima Beans	Chocolate
	Almonds	Chestnuts	NUTS SEEDS	Pumpkin Seeds, Sunflower Seeds	Pecans, Cashews	Peanuts, Walnuts
Olive Oil	Flax Seed Oil	Canola Oil	OILS	Corn Oil		
		Amaranth, Millet, Wild Rice, Quinoa	GRAINS CEREALS	Sprouted Wheat Bread, Spelt, Brown Rice	White Rice, Corn, Buckwheat, Oats, Rye	Wheat, White Flour, Pastries, Pasta
			MEATS	Venison, Cold Water Fish	Turkey, Chicken, Lamb	Beef, Pork, Shellfish
	Breast Milk	Soy Cheese, Soy Milk, Goat Milk, Goat Cheese, Whey	EGGS DAIRY	Eggs, Butter, Yogurt, Buttermilk, Cottage Cheese	Raw Milk	Cheese, Homogenized Milk, Ice Cream
Herb Teas, Lemon Water	Green Tea	Ginger Tea	BEVERAGES	Tea	Coffee	Beer, Soft Drinks

Note that a food's acid or alkaline-forming tendency in the body has nothing to do with the actual pH of the food itself. For example, lemons are very acidic, however the end products they produce after digestion and assimilation are very alkaline so lemons are alkaline-forming in the body. Likewise, meat will test alkaline before digestion but it leaves very acidic residue in the body so, like nearly all animal products, meat is very acid-forming.

Dr. Theodore Baroody's ACIDITY SYMPTOMS

Beginning Symptoms

1. Acne
2. Agitation
3. Muscular pain
4. Cold hands and feet
5. Dizziness
6. Low energy
7. Joint pains that travel
8. Food allergies
9. Chemical sensitivities or odors, gas heat
10. Hyperactivity
11. Panic attacks
12. Pre-menstrual and menstrual cramping
13. Pre-menstrual anxiety and depression
14. Lack of sex drive
15. Bloating
16. Heartburn
17. Diarrhea
18. Constipation
19. Hot urine.
20. Strong smelling urine
21. Mild headaches
22. Rapid panting breath
23. Rapid heartbeat
24. Irregular heartbeat
25. White coated tongue
26. Hard to get up
27. Excess Head mucus
28. Metallic taste in mouth

Intermediate Symptoms

1. Cold sore (Herpes I & 11)
2. Depression
3. Loss of memory
4. Loss of concentration
5. Migraine headaches
6. Insomnia
7. Disturbance in smell, vision, taste, hearing
8. Asthma
9. Bronchitis
10. Hay Fever

11. Ear Aches
12. Hives
13. Swelling
14. Viral infections (cold, flu)
15. Bacterial Infections (staph, strep)
16. Fungal infections
17. Impotence
18. Urethritis
19. Cystitis
20. Urinary infection
21. Gastritis
22. Colitis
23. Excessive falling hair
24. Psoriasis
25. Endometriosis
26. Stuttering
27. Numbness and tingling
28. Sinusitis

Advanced Symptoms

1. Crohn's disease
2. Schizophrenia
3. Learning Disabled
4. Hodgkin's Disease
5. Systemic Lupus Erythematosus
6. Multiple Sclerosis
7. Sarcoidosis
8. Rheumatoid arthritis
9. Myasthenia Gravis
10. Scleroderma
11. Leukemia
12. Tuberculosis
13. Some forms of cancer

What Do I Eat?

By: Dave Carpenter, ND, C. Ac., CCI

There's an old saying that we are what we eat. The truth is that the fuel that you put into your body is just as important as the fuel that you put in your car or truck. But I'm willing to bet that you take much more care in picking out the fuel that you put in your automobile than to that you put in your mouth. The problem is that most of us don't know what fuel to put into our body so we eat the foods that are most advertised or most readily available or most familiar. **And it's confusing because even the "experts" aren't in agreement on the subject. So I'm going to share with you my own opinion.**

There are a couple of myths that we need to deal with. First, we've been taught that we must eat a lot of protein (mostly in the form of meat, dairy and eggs) to be healthy. There is significant research showing that our thinking is very wrong on this subject. Rather than bore you with the research let me explain something that should put it in perspective. The strongest animal on the planet per pound is said to be the gorilla. The gorilla is very much like man in many ways including most body functions and yet they eat plants and small insects. If eating animal protein were required for health these animals would be very unhealthy yet they are not. *They are many times stronger than humans and they do it eating plants!*

The second myth (about protein again) is that a high protein, low carbohydrate diet will help you lose weight. Although this tends to be true for most people *in the short run* it causes extreme problems in the long run. People on a high protein diet (Atkins, South Beach, etc.) tend to need a lot of laxatives to keep their bowels working and most find that after some time they put on more weight than ever because it's such an acidic diet. I've yet to meet someone that has been on a high protein diet for any length of time that doesn't have numerous health problems, although most haven't connected their problems to their diet because it comes on after a few months time. If you want to understand why this happens I suggest you read the wonderful book, "The China Study" by T. Colin Campbell, Ph.D. where he discusses over 800 research studies on the subject.

Here's what I want you to do...

Avoid the "whites" – refined foods like sugar, pasta, white flour, white bread, and white rice.

Avoid processed foods that come in a box or a bag. Chips, cookies, candy, soda, etc.

DO eat as much as you want to of vegetables, fruits, nuts and seeds (except peanuts and cashews which contain aflatoxins), beans and grains that haven't been stored for a long time.

Do drink at least ¾ of an ounce of Kangen Water™ for every pound that you weigh... every day.
NOTE: If you are trying to lose weight – increase this amount to 1 ounce per pound.

Do get at least 2 or 3 TBS of good oils (Essential Fatty Acids) either in their whole food form or in the cold processed virgin form. Avocados are great for this. Some good EFA's include olive oil, coconut oil, avocado oil, flax oil, borage oil, grape seed oil, sunflower oil, sesame oil and evening primrose oil.

Be sure that at least 80% of the food you eat is from the "DO" group - each meal.

Understanding Cancer & pH Relationship

Cancer **does not** develop for some unknown reason. Once you understand why and how it develops, and learn how to support your body so that it may more effectively fight cancer, it **may never be too late to get healthy again**. No matter what type of cancer, they have the same underlying causes. **Cancer is a natural process where, to put it simply, an overworked and weakened immune system cannot kill it as fast as it is multiplying.** Toxin, carcinogens, radiation, even viruses, combined with an unhealthy internal environment, and in conjunction with a weakened immune system, cause more cells to turn cancerous, and allows them to thrive.

You must change your internal environment to one in which cancer cannot thrive. Just as we couldn't live on Mars without any oxygen, **cancer can't exist in cells where there is enough oxygen.** Unfortunately, all too often our cells are low in oxygen. **Fortunately, it is possible to increase the levels of oxygen in cells, thereby making your body's internal environment a place where cancer can't easily survive.**

Immune System Support for Cancer

Cancer is a perfectly natural process. **A very small percentage of cells in every person who has ever lived turn cancerous.** And the body usually gets rid of those cancerous cells before they do harm. This process has been going on for eons. It is only when more cancer cells are being created than the body can get rid of that the problem comes. With increased toxins, viruses, carcinogens, etc. our immune systems have become significantly overworked and weakened.

The underlying cause of all cancer, no matter what type, may have been discovered by Otto Warburg over 50 years ago. He actually won two Nobel Prizes for work proving cancer is caused by a lack of oxygen respiration in cells. He stated in "The Prime Cause and Prevention of Cancer" that the cause of cancer is no longer a mystery; we know it occurs whenever any cell is denied 60% of its oxygen requirements.

Cancer, above all other diseases, has countless secondary causes. But, even for cancer, there is only one prime cause. Summarized in a few words, the prime cause of cancer is the replacement of the respiration of oxygen in normal body cells by a fermentation of sugar.

Research Implications

All normal body cells meet their energy needs by respiration of oxygen, whereas cancer cells meet their energy needs in great part by fermentation. All normal body cells are thus obligating aerobes, whereas all cancer cells are partial anaerobes." J.B. Kizer, a biochemist and physicist at Gungnir Research in Portsmouth, Ohio explained, **"Since Warburg's discovery, this difference in respiration has remained the most fundamental (and some say, only) physiological difference consistently found between normal and cancer cells.**

A nurse who works in medical research said, **"It's so simple. I don't know why I never thought of it before. When we're working with cell cultures in the lab, if we want the cells to mutate, we turn down the oxygen, to stop them, we turn the oxygen back up."**

Ma Lan, MD and Joel Wallach DVD, point out that one type of white blood cells kills cancer cells by injecting oxygen creating hydrogen peroxide into the cells. Looking at cancer in this light, it makes sense to drastically increase cellular oxygen levels and to detoxify the body so that more cells stay oxygenated.

ACID vs. ALKALINITY

In chemistry, **alkali solutions (pH over 7.0) tend to absorb oxygen, while acids (pH under 7.0) tend to expel oxygen.** For example, a mild alkali can absorb over 100 times as much oxygen as a mild acid. Therefore, when the body becomes acidic by dropping below pH 7.0 (note: all body fluids, except for stomach and urine, are supposed to be mildly alkaline at pH 7.4), oxygen is driven out of the body thereby, according to Nobel Prize winner Otto Warburg, inducing cancer. Stomach fluids must remain acidic to digest food and urine must remain acidic to remove wastes from the body. Blood is the exception. Blood must always remain at an alkaline pH 7.4 so that it can retain its oxygen. When adequate mineral consumption is in the diet, the blood is supplied the crucial minerals for maintaining an alkaline pH of 7.4.

However whenever the blood pH is too low, the body is forced to rob Peter (other body fluids, muscles, bones) to pay Paul (the blood). In doing so, it removes crucial minerals, such as calcium, from the saliva, spinal fluids, kidneys, liver, bones, etc., in order to maintain the blood at pH 7.4. This causes the de-mineralized fluids and organs to become acidic and therefore anaerobic, thus inducing not only cancer, but a host of other degenerative diseases, such as heart disease, diabetes, arthritis, lupus, etc..

In summary, oxygen is essential to metabolize food and create high energy, **and it is also impossible for cancer to exist in an alkaline oxygen-rich environment. God did not create the human body to suffer from cancer, and if what we eat and drink returns the body to its original balanced pH state by raising it's alkalinity, we will never suffer from this disease.**

Excerpt from *Reverse Aging* by Sang Whang - What Causes Cancer?

*Dr. Otto Warburg states that the **primary cause of cancer is the lack of oxygen in a cell.** He didn't know what caused the lack of oxygen. **I think Dr. Warburg was dealing with the symptom of acid build-ups rather than the cause.** The German solution is to alleviate the symptoms, that is, to supply more oxygen, while the Japanese solution is to reduce the acidity, the very cause, by alkaline diet and/or alkaline water.*

*When you drink alkaline water, you are drinking water with excess oxygen, not in the form of O₂ [oxygen], but in the form of OH⁻ [hydroxyl ions] which is very stable because it is mated with positively ionized alkaline minerals. The alkaline mineral is used to detoxify poisonous acid compounds and when that happens the hydroxyl ion is freed to supply excess oxygen to the cells to prevent the development of cancer. **It is indeed the case of killing two birds with one stone.***

Chemotherapy or radiation treatments may be able to destroy 'all' of the malignant cells, but by that time the healthy cells are damaged to the point that they cannot destroy simple everyday bacteria and that person can lose his life. Even after 'successful' surgery where 'all' of the tumors were removed, they can recur because the acidic environment has not been changed to an alkaline one. Drinking high pH alkaline water will definitely help in preventing cancer.

"Nobody today can say that one does not know what the prime cause of cancer is.

On the contrary, there is no disease whose prime cause is better known, so that today ignorance is no longer an excuse for avoiding measures for prevention. That the prevention of cancer will come there is no doubt. But how long prevention will be avoided depends on how long the prophets of agnosticism will succeed in inhibiting the application of scientific knowledge in the cancer field.

In the meantime, millions of men and women must die of cancer unnecessarily".

*The Above Excerpt Taken from:
The Prime Cause and Prevention of Cancer
Dr. Otto Warburg
Lecture delivered to Nobel Laureates on June 30, 1966
at Lindau, Lake Constance, Germany*

Why Purified Water is Bad For You

by Zoltan P. Rona MD, MSc

During nearly 19 years of clinical practice I have had the opportunity to observe the health effects of drinking different types of water. Most of you would agree that drinking unfiltered tap water could be hazardous to your health because of things like parasites, chlorine, fluoride and dioxins. Many health fanatics, however, are often surprised to hear me say that drinking purified water on a regular, daily basis is potentially dangerous. Paavo Airola wrote about the dangers of purified water in the 1970's when it first became a fad with the health food crowd.

Distillation is the process in which water is boiled, evaporated and the vapor condensed. **Purified (distilled) or reverse osmosis water** is free of dissolved minerals and, because of this, has the special property of being able to actively absorb toxic substances from the body and eliminate them. Studies validate the benefits of drinking purified water when one is seeking to cleanse or detoxify the system for short periods of time (a few weeks at a time). Fasting using purified water can be dangerous because of the rapid loss of electrolytes (sodium, potassium, chloride) and trace minerals like magnesium, deficiencies of which can cause heart beat irregularities and high blood pressure. Cooking foods in purified water pulls the minerals out of them and lowers their nutrient value.

Purified water is an active absorber and when it comes into contact with air, it absorbs carbon dioxide, making it acidic. The more purified water a person drinks, the higher the body acidity becomes. According to the U.S. Environmental Protection Agency, "Purified" water, being essentially mineral-free, is very aggressive, in that it tends to dissolve substances with which it is in contact. Notably, carbon dioxide from the air is rapidly absorbed, making the water acidic and even more aggressive. Many metals are dissolved by purified water.

The most toxic commercial beverages that people consume (i.e. cola beverages and other soft drinks) are made from purified water. Studies have consistently shown that heavy consumers of soft drinks (with or without sugar) spill huge amounts of calcium, magnesium and other trace minerals into the urine. **The more mineral loss, the greater the risk for osteoporosis, osteoarthritis, hypothyroidism, coronary artery disease, high blood pressure and a long list of degenerative diseases generally associated with premature aging.**

A growing number of health care practitioners and scientists from around the world have been advocating the theory that aging and disease is the direct result of the accumulation of acid waste products in the body. There is a great deal of scientific documentation that supports such a theory. A poor diet may be partially to blame for the waste accumulation. Meats, sugar, white flour products, fried foods, soft drinks, processed foods, alcohol, dairy products and other junk foods cause the body to become more acidic. Stress, whether mental or physical can lead to acid deposits in the body.

There is a correlation between the consumption of soft water (purified water is extremely soft) and the incidence of cardiovascular disease. Cells, tissues and organs do not like to be dipped in acid and will do anything to buffer this acidity including the removal of minerals from the skeleton and the manufacture of bicarbonate in the blood. The longer one drinks purified

water, the more likely the development of mineral deficiencies and an acid state. I have done well over 3000 mineral evaluations using a combination of blood, urine and hair tests in my practice. Almost without exception, people who consume purified water exclusively, eventually develop multiple mineral deficiencies. Those who supplement their purified water intake with trace minerals are not as deficient but still not as adequately nourished in minerals as their non-purified water drinking counterparts even after several years of mineral supplementation.

The ideal water for the human body should be slightly alkaline (i.e., Kangen Water™) and this requires the presence of minerals like calcium and magnesium. Purified water tends to be acidic and can only be recommended as a way of drawing poisons out of the body. Once this is accomplished, the continued drinking of purified water is a bad idea.

Water filtered through a solid charcoal filter is slightly alkaline. Ozonation of this charcoal filtered water is ideal for daily drinking. Longevity is associated with the regular consumption of hard water (high in minerals). **Ionized water (i.e., Kangen Water™) is the best possible drinking water.** Disease and early death is more likely to be seen with the long term drinking of purified water. Avoid it except in special circumstances.

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- Dr. Zoltan P. Rona is a graduate of McGill University Medical School (1977) and has a Master's Degree in Biochemistry and Clinical Nutrition from the University of Bridgeport in Connecticut (1985). He is the author of the Canadian bestsellers, "The Joy of Health" and "Return to the Joy of Health". He is a past president of the Canadian Holistic Medical Association and is a consultant on nutritional medicine to the Motherisk Program of the Department of Pharmacology of the Toronto Hospital for Sick Children. Born 22/2/51 in Budapest, Hungary; raised in Montreal, Quebec. Canadian citizen.

Clinical Reports Ionized Alkaline Water

These are reports from medical institutions on the use of Alkaline Ionized Water.

Clinical Reports on the Effects of Ionized Water

- 1. Physiological effects of alkaline ionized water: Effects on metabolites produced by intestinal fermentation**
- 2. Clinical evaluation of alkaline ionized water for abdominal complaints: Placebo controlled double blind tests**
- 3. Effect of Electrolytic Water (Ionized Water) Intake on Lifespan of Autoimmune Disease Prone Mice**
- 4. Reduced Water for Prevention of Diseases**
- 5. Clinical Improvements Obtained From The Intake Of Reduced Water**
- 6. Effects of alkaline ionized water on formation & maintenance of osseous tissues**

Clinical Reports on the Effects of Ionized Water

1. Physiological effects of alkaline ionized water: Effects on metabolites produced by intestinal fermentation

Takashi Hayakawa, Chiko Tushiya, Hisanori Onoda, Hisayo Ohkouchi, Haruto Tsuge (Gifu University, Faculty of Engineering, Dept. of Food Science)

"We have found that long-term ingestion of alkaline ionized water (AIW) reduces cecal fermentation in rats that were given highly fermentable commercial diet (MF: Oriental Yeast Co., Ltd.). In this experiment, rats were fed MF and test water (tap water, AIW with pH at 9 and 10) for about 3 months. Feces were collected on the 57th day, and the rats were dissected on the 88th day. The amount of ammonium in fresh feces and cecal contents as well as fecal free-glucose tended to drop down for the AIW group. In most cases, the amount of free-amino acids in cecal contents did not differ significantly except for cysteine (decreased in AIW with pH at 10) and isoleucine (increased in AIW with pH at 10).

Purpose of tests

Alkaline ionized water electrolyzers have been approved for manufacturing in 1965 by the Ministry of Health and Welfare as medical equipment to produce medical substances. Alkaline ionized water (AIW) produced by this equipment is known to be effective against gastrointestinal fermentation, chronic diarrhea, indigestion and hyperchylia as well as for controlling gastric acid.

1. This is mainly based on efficacy of the official calcium hydroxide.
2. By giving AIW to rats for a comparatively long time under the condition of extremely high level of intestinal fermentation, we have demonstrated that AIW intake is effective for inhibition of intestinal fermentation when its level is high based on some test results where AIW worked against cecal hypertrophy and for reduction in the amount of short-chain fatty acid that is the main product of fermentation.
3. We have reported that this is caused by the synergy between calcium level generally contained in AIW (about 50ppm) and the value of pH. and that frequency of detecting some anaerobic bacteria tends to be higher

in alkaline ionized water groups than the other, although the bacteria count in the intestine does not have significant difference. Based on these results, we made a judgment that effect of taking AIW supports part of inhibition mechanism against abnormal intestinal fermentation, which is one of the claims of efficacy that have been attributed to alkaline ionized water electrolyzers.

4. On the other hand, under the dietary condition of low intestinal fermentation, AIW uptake does not seem to inhibit fermentation that leads us to believe that effect of AIW uptake is characteristic of hyper-fermentation state. Metabolites produced by intestinal fermentation include indole and skatole in addition to organic acids such as short-chain fatty acid and lactic acid as well as toxic metabolites such as ammonium, phenol and p-cresol. We do not know how AIW uptake would affect the production of these materials. In this experiment, we have tested on ammonium production as explained in the following sections.

Testing methods

Four-week-old male Wistar/ST Clean rats were purchased from Japan SLC Co. Ltd. and were divided into 3 groups of 8 each after preliminary breeding. AIW of pH 9 and 10 was produced by an electrolyzer Mineone ROYAL NDX3 1 OH by Omco Co., Ltd. This model produces AIW by electrolyzing water with calcium lactate added. On the last day of testing, the rats were dissected under Nembutal anesthesia to take blood from the heart by a heparin-treated syringe. As to their organs, the small intestines, cecum and colon plus rectum were taken out from each of them. The cecum was weighed and cleaned with physiological saline after its contents were removed, and the tissue weight was measured after wiping out moisture. Part of cecal contents was measured its pH, and the rest was used to assay ammonium concentration. The amount of ammonium contained in fresh feces and cecal contents was measured by the Nessler method after collecting it in the extracted samples using Conway's micro-diffusion container. Fecal free-glucose was assayed by the oxygen method after extraction by hot water. Analysis of free amino acids contained in cecal contents was conducted by the Waters PicoTag amino acid analysis system.

Test results and analyses

No difference was found in the rats' weight gain, water and feed intake and feeding efficiency, nor was any particular distinction in appearance identified. The length of the small intestines and colon plus rectum tended to decline in AIW groups.

pH value of cecal contents was higher and the amount of fecal free-glucose tended to be lower in AIW groups than the control group. Since there was no difference in fecal discharge itself, the amount of free-glucose discharged per day was at a low level.

The amount of discharged free-glucose in feces is greater when intestinal fermentation is more intensive, which indicates that intestinal fermentation is more inhibited in AIW groups than the control group.

Ammonium concentration in cecal contents tends to drop down in AIW groups (Fig. 1). This trend was most distinctive in case of fresh feces of one of AIW groups with pH 10 (Fig.2). AIW uptake was found to be inhibitory against ammonium production. In order to study dynamics of amino acids in large intestines, we examined free amino acids in the cecal contents to find out that cysteine level is low in AIW groups whereas isoleucine level is high in one of AIW groups with pH 10, although no significant difference was identified for other amino acids.

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2. Clinical evaluation of alkaline ionized water for abdominal complaints: Placebo controlled double blind tests

Hirokazu Tashiro, Tetsuji Hokudo, Hiromi Ono, Yoshihide Fujiyama, Tadao Baba (National Ohkura Hospital, Dept. of Gastroenterology; Institute of Clinical Research, Shiga University of Medical Science, Second Dept. of Internal Medicine

"Effect of alkaline ionized water on abdominal complaints was evaluated by placebo controlled double blind tests. Overall scores of improvement using alkaline ionized water marked higher than those of placebo controlled group, and its effect proved to be significantly higher especially in slight symptoms of chronic diarrhea and abdominal complaints in cases of general malaise. Alkaline ionized water group did not get interrupted in the course of the test, nor did it show serious side effects or abnormal test data. It was confirmed that alkaline ionized water is safer and more effective than placebos.

Summary

Effect of alkaline ionized water on abdominal complaints was clinically examined by double blind tests using clean water as placebo. Overall improvement rate was higher for alkaline ionized water group than placebo group and the former proved to be significantly more effective than the other especially in cases of slight symptoms. Examining improvement rate for each case of chronic diarrhea, constipation and abdominal complaints, alkaline ionized water group turned out to be more effective than placebo group for chronic diarrhea, and abdominal complaints.

The test was stopped in one case of chronic diarrhea, among placebo group due to exacerbation, whereas alkaline ionized water group did not stop testing without serious side effects or abnormal test data in all cases.

It was confirmed that alkaline ionized water is more effective than clean water against chronic diarrhea, abdominal complaints and overall improvement rate (relief of abdominal complaints) and safer than clean water.

Introduction

Since the approval of alkaline ionized water electrolyzers by Pharmaceutical Affairs Law in 1966 for its antacid effect and efficacy against gastrointestinal disorders including hyperchylia, indigestion, abnormal gastrointestinal fermentation and chronic diarrhea, they have been extensively used among patients.

However, medical and scientific evaluation of their validity is not established. In our study, we examined

clinical effect of alkaline ionized water on gastrointestinal disorders across many symptoms in various facilities. Particularly, we studied safety and usefulness of alkaline ionized water by double-blind tests using clean water as a control group.

Test subjects and methods

163 patients (34 men, 129 women, age 21 to 72, average 38.6 years old) of indigestion, abnormal gastrointestinal fermentation (with abnormal gas emission and rugitus) and abdominal complaints caused by irregular dejection (chronic diarrhea, or constipation) were tested as subjects with good informed consent.

Placebo controlled double blind tests were conducted using alkaline ionized water and clean water at multiple facilities. An alkaline ionized water electrolyzer sold commercially was installed with a pump driven calcium dispenser in each of the subject homes. Tested alkaline ionized water had pH at 9.5 and calcium concentration at 30ppm.

Each subject in placebo group used a water purifier that has the same appearance as the electrolyzer and produces clean water.

The tested equipment was randomly assigned by a controller who sealed off the key code, which was stored safely until the tests were completed, and the seal was opened again.

Water samples were given to each patient in the amount of 200ml in the morning with the total of 500ml or more per day for a month. Before and after the tests, blood, urine and stool were tested and a log was kept on the subjective symptoms, bowel movements and accessory symptoms. After the tests, the results were analyzed based on the log and the test data.

Conclusion

As a result of double blind clinical tests of alkaline ionized water and clean water, alkaline ionized water was proved to be more effective than clean water against chronic diarrhea, abdominal complaints (dyspepsia) and overall improvement rate (relief from abdominal complaints). Also, safety of alkaline ionized water was confirmed which clinically verifies its usefulness.

3. Effect of Electrolytic Water (Ionized Water) Intake on Lifespan of Autoimmune Disease Prone Mice

Research from Texas University

Recent studies on electrolyzed water indicate that anode or acidic water is most effective as disinfectants; whereas, reduced or alkaline water processed through cathode is used as safe drinking water. The present drinking water study was undertaken in two strains of autoimmune disease prone mice to establish the spontaneous disease process and longevity. Weanling MRL/lpr and NZBxNZW [B/W] F1 female mice were provided daily with (1) tap water [pH ~7.5, oxygen reduction potential (ORP)~600+] (2) electrolyzed water with pH of ~9.0 and ORP ~400- and (3) hyper-reduced water with pH~10.0 and ORP~600-. Mice were provided H₂O and chow diet ad libitum and weekly body weights and spontaneous deaths were recorded. The mean survival data recorded as days for MRL/lpr mice [25 mice/group] is as follows: (1) tap water 235±25, (2) reduced water 287±40 and (3) hyper-reduced water 346±45 days [<0.05]. In the case of B/W mice [25 mice/group], (1) tap water 269±16, (2) reduced water 298±19 and (3) hyper-reduced 302±18 days. A significantly decreased (<0.05) serum lipid peroxides were observed in mice fed hyper-reduced H₂O. Also, the

source of water did not alter lymphocyte subsets or their response to mitogens. In summary, hyper-reduced water with pH~10.0 appears to inhibit autoimmune disease of MRL/lpr mice whereas only a modest increased lifespan was noted for B/W mice. The increased lifespan by electrolyzed H₂O appears to be related to the changes in free radicals and antioxidant enzyme levels. [Supported in part by Zanix Co. and Mr. Waterman Co., Tokyo, Japan].

Summary:

- 1. Life long intake of both reduced (pH 9.0) and hyper-reduced (pH 10.0) water caused no harm to mice compared to tap water.**
- 2. Survival is increased significantly by hyper-reduced water in one strain (MRL/lpr).**
- 3. Slight increased life span in the other strain (NZBxNZW F1).**
- 3. Reduced and hyper-reduced water appears to increase T cell numbers, and decrease B cells.**
- 4. Both reduced and hyper-reduced water appears to increase antioxidant mRNA levels.**
- 5. New clinical and animal studies are needed to confirm above results.**

4. Reduced Water for Prevention of Diseases

Part paper delivered by Dr Shirahata to the Functional Water Symposium in Tokyo by Dr.Sanetaka Shirahata, Graduate school of Genetic Resources Technology, Kyushu University,6-10-1 Hakozaki, Higashi-ku, Fukuoka 812-8581, Japan.

It has long been established that reactive oxygen species (ROS) cause many types of damage to biomolecules and cellular structures, that, in turn result in the development of a variety of pathologic states such as diabetes, cancer and aging. Reduced water is defined as anti-oxidative water produced by reduction of water.

Electrolyzed reduced water (ERW) has been demonstrated to be hydrogen-rich water and can scavenge ROS in vitro (Shirahata et al., 1997). The reduction of proton in water to active hydrogen (atomic hydrogen, hydrogen radical) that can scavenge ROS is very easily caused by a weak current, compared to oxidation of hydroxyl ion to oxygen molecule. Activation of water by magnetic field, collision, minerals etc. will also produce reduced water containing active hydrogen and/or hydrogen molecule.

Several natural waters such as Hita Tenryosui water drawn from deep underground in Hita city in Japan, Nordenau water in Germany and Tlacote water in Mexico are known to alleviate various diseases. We have developed a sensitive method by which we can detect active hydrogen existing in reduced water, and have demonstrated that not only ERW but also natural reduced waters described above contain active hydrogen and scavenge ROS in cultured cells. ROS is known to cause reduction of glucose uptake by inhibiting the insulin-signaling pathway in cultured cells. Reduced water scavenged intracellular ROS and stimulated glucose uptake in the presence or absence of insulin in both rat L6 skeletal muscle cells and mouse 3T3/L1 adipocytes. This insulin-like activity of reduced water was inhibited by wortmannin that is specific inhibitor of PI-3 kinase, a key molecule in insulin signaling pathways.

Reduced water protected insulin-responsive cells from sugar toxicity and improved the damaged sugar tolerance of type 2 diabetes model mice, suggesting that reduced water may improve insulin-independent diabetes mellitus.

Cancer cells are generally exposed to high oxidative stress. Reduced water cause impaired tumor phenotypes of human cancer cells. such as reduced growth rate. morphological changes. reduced colony formation ability

in soft agar, passage number-dependent telomere shortening, reduced binding abilities of telomere binding proteins and suppressed metastasis.

Reduced water suppressed the growth of cancer cells transplanted into mice, demonstrating their anticancer effects in vivo. Reduced water will be applicable to not only medicine but also food industries, agriculture, and manufacturing industries.

[Also see above for Dr.Sanetaka Shirahata paper " *Electrolyzed reduced water scavengers active oxygen species and protects DNA from oxidative damage* "]

5. Clinical Improvements Obtained From The Intake Of Reduced Water

Extracts from the *Presentation At The Eight Annual International Symposium On man And His Environment in Health And Disease* on February 24th 1990, at The Grand Kempinski Hotel, Dalls, Texas, USA by *Dr. M Kawamura, M.D.*, on:

THE CONCEPT OF PREHEPATIC MEDICINES

Since the introduction of alkaline ionic water in our clinic in 1985, we have had the following interesting clinical experiences in the use of this type of water. By the use of alkaline ionic water for drinking and the preparation of meals for our in-patients, we have noticed: -

- **Declines in blood sugar levels in diabetic patients.**
- **Improvements in peripheral circulation in diabetic gangrene.**
- **Declines in uric acid levels in patients with gout.**
- **Improvements in liver function exams in hepatic disorders.**
- **Improvements in gastroduodenal ulcer and prevention of their recurrences.**
- **Improvements in hypertension and hypotension.**
- **Improvements in allergic disorders such as asthma, urticaria, rhinites and atopic dermatitis.**
- **Improvements in persistent diarrhoea which occurred after gastrectomy.**
- **Quicker improvements in post operative bower paralysis.**
- **Improvements in serum bilirubin levels in new born babies.**

Being confirming clinical improvements, we have always observed changes of stools of the patients, with the colour of their feaces changing from black-brown colour to a brigher yellow-brown one, and the odour of their feaces becoming almost negligible.

The number of patients complaining of constipation also decreased markedly. The change of stool findings strongly suggests that alkaline ionic water intake can decrease the production of putrefield or pathogenic metabolites.

Devices to produce reduced water were introduced into our clinic in May 1985. Based on the clinical experiences obtained in the past 15 years, it can be said that introduction of electrolyzed-reduced water for drinking and cooking purpose for in-patients should be the very prerequisite in our daily medical practices. Any dietary recipe cannot be a scientific one if property of water is not taken by the patients is not taken into consideration.

The Ministrv of Health and Welfare in Japan announced in 1965 that the intake of reduced water is effective

for restoration of intestinal flora metabolism.

6. Effects of alkaline ionized water on formation & maintenance of osseous tissues

by Rei Takahashi Zhenhua Zhang Yoshinori Itokawa

(Kyoto University Graduate School of Medicine, Dept. of Pathology and Tumor Biology, Fukui Prefectural University)

Effects of calcium alkaline ionized water on formation and maintenance of osseous tissues in rats were examined. In the absence of calcium in the diet, no apparent calcification was observed with only osteoid formation being prominent. Striking differences were found among groups that were given diets with 30% and 60% calcium. Rats raised by calcium-ionized water showed the least osteogenetic disturbance. Tibiae and humeri are more susceptible to calcium deficiency than femora. These results may indicate that calcium in drinking water effectively supplements osteogenesis in case of dietary calcium deficiency. The mechanism involved in osteoid formation such as absorption rate of calcium from the intestine and effects of calcium alkaline ionized drinking water on maintaining bone structure in the process of aging or under the condition of calcium deficiency is investigated.

Osteoporosis that has lately drawn public attention is defined as "conditions of bone brittleness caused by reduction in the amount of bone frames and deterioration of osseous microstructure." Abnormal calcium metabolism has been considered to be one of the factors to contribute to this problem, which in turn is caused by insufficient calcium take in, reduction in enteral absorption rate of calcium and increase in the amount of calcium in urinal discharge. Under normal conditions, bones absorb old bones by regular metabolism through osteoid formation to maintain their strength and function as supporting structure. It is getting clear that remodeling of bones at the tissue level goes through the process of activation, resorption, reversal, matrix synthesis and mineralization. Another important function of bones is storing minerals especially by coordinating with intestines and kidneys to control calcium concentration in the blood. When something happens to this osteo metabolism, it results in abnormal morphological changes. Our analyses have been focusing mostly on the changes in the amount of bones to examine effects of calcium alkaline ionized water on the reaction system of osteo metabolism and its efficiency. Ibis time, however, we studied it further from the standpoint of histology. In other words, we conducted comparative studies on morphological and kinetic changes of osteogenesis by testing alkaline ionized water, tap water and solution of lactate on rats.

Three-week-old male Wistar rats were divided into 12 groups by conditions of feed and drinking water. Feeds were prepared with 0%, 30%, 60% and 100% of normal amount of calcium and were given freely. Three types of drinking water, tap water (city water, about 6ppm of Ca), calcium lactate solution (Ca=40ppm) and alkaline ionized water (Ca =40ppm, pH=9, produced by an electrolyzer NDX 4 LMC by Omco OMC Co., Ltd.) were also given keely. Rats' weight, amount of drinking water and feed as well as the content of Ca in drinking water were assayed every day. On the 19th and 25th days of testing, tetracycline hydrochloride was added to the feed for 48 hours so as to bring its concentration to 30mg/kg. On the 30th day, blood samples were taken under Nembutal anesthesia, and tibiae, humeri and femora were taken out to make non-decalcified samples. Their conditions of osteoid formation and rotation were observed using Villanueva bone stain and Villanueva goldner stain.

Three groups that were given different types of drinking water and the same amount of Ca in the feed were compared to find out no significant difference in the rate of weight gain and intakes of feed and drinking

water. Alkaline ionized water group had significantly greater amount of tibiae and humeri with higher concentration of calcium in the bones.

The group of 0% calcium in the feed saw drastic increase in the amount of osteoid. There was not much difference by types of drinking water. Almost no tetracycline was taken into tibiae and humeri, although a small amount was identified in femora. As a result, osteogenesis went as far as osteoid formation, but it was likely that decalcification has not happened yet, or most of newly formed bones were absorbed. As to the groups of 30% and 60% calcium in the feed, increase in the area of tetracycline take in was more identifiable with higher clarity in descending order of alkaline ionized water, calcium lactate solution and tap water groups. Especially in case of tap water group, irregularity among the areas of tetracycline take in was distinctive. The group of 100% calcium in the feed saw some improvements in osteogenesis in descending order of alkaline ionized water, calcium lactate solution and tap water. In any case, bone formation seemed to be in good condition at near normal level.

Alkaline ionized water was regarded to be effective for improvements of osteogenesis under the conditions of insufficient calcium in the feed. Also, the extent of dysosteogenesis differed by the region. That is, tibiae and humeri tend to have more significant dysosteogenesis than femora.

In addition, there is a possibility that osteo metabolism varies depending on enteral absorption rate of calcium, adjustment of discharge from kidneys and functional adjustment of accessory thyroid in the presence of alkaline ionized water. We are now studying its impact on calcium concentration in the blood. We are also examining whether it is possible to deter bone deterioration by testing on fast aging mouse models.

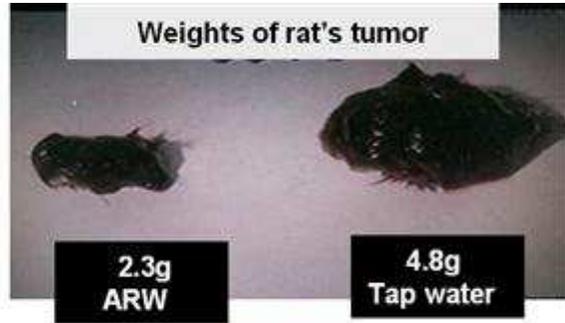
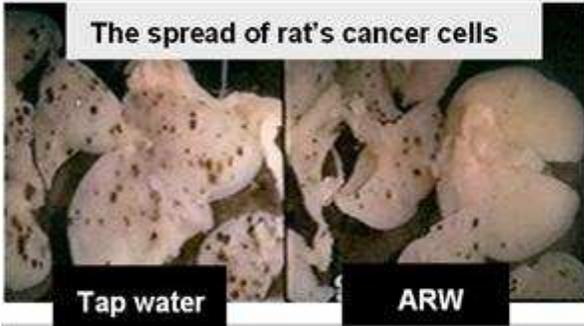
Korean TV Reported scientific Results on the effects of Ionized Water (Broadcast in 2004)

1. **Anti-cancer Effects**
2. **Anti-Oxidization Effects**
3. **Increase of Immune Function**
4. **Diabetes**
5. **Protection of DNA in tissues**

Protection of DNA in tissues

Anti-cancer Effects

After injecting malignant skin cancer cells into cancer-free laboratory mice, they supplied the mice with Alkaline Reduced Water, and compared the size of the tumor after a lapse of 20 days.



The results

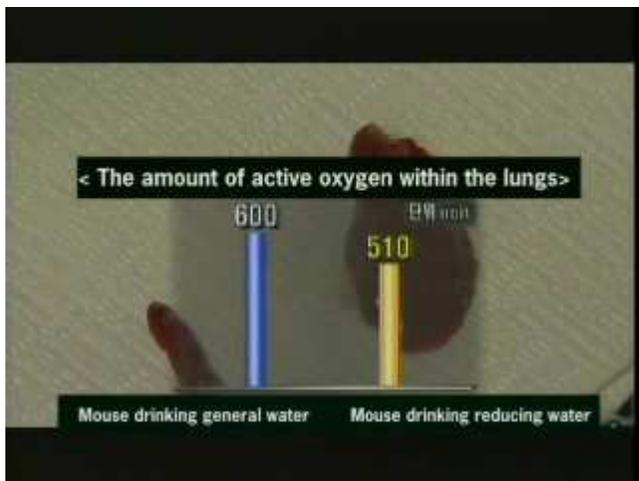
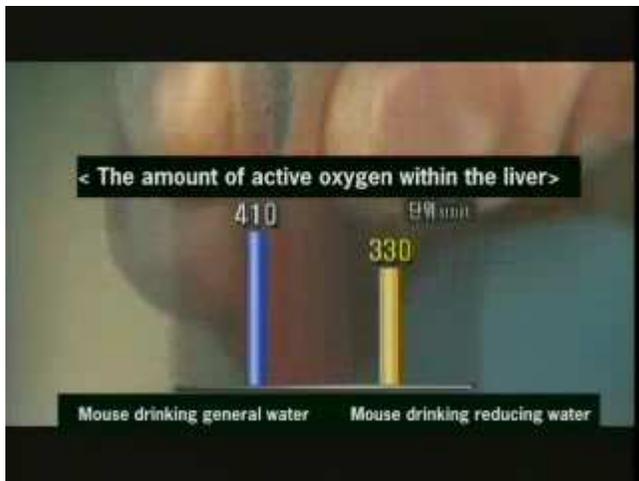
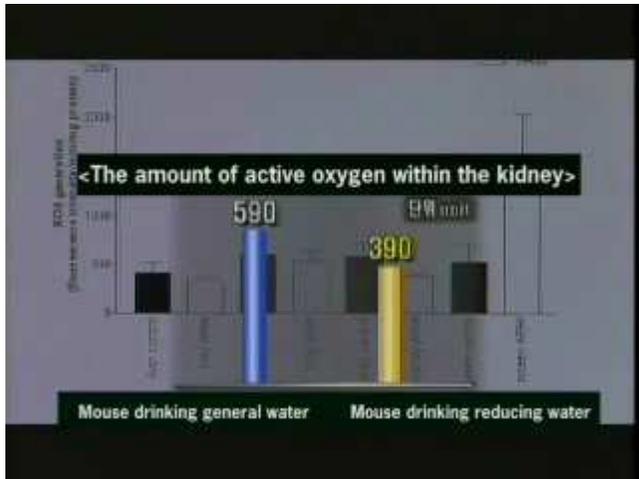
The results showed the mice, which were supplied with the Ionized Water (ARW) showed the growing speed of the tumor and tumor sizes had been notably reduced as compared to those that had not taken ARW.

Anti-Oxidization Effects

Mineral Ionized Water (ARW) has action of removing oxygen free radicals. 20 days after injecting skin cancer cells into the tail of cancer-free laboratory mice, the researchers checked the amounts of oxygen free radicals for each separate organ for the mice that had taken normal water and mice that had taken ARW.

Mice that had taken Ionized Water (ARW) showed reduced amounts of oxygen free radicals in their lungs, livers, and kidneys. Nevertheless, in case of the spleen, which has a central roll in immune system, it was discovered that the quantity of oxygen free radical had increased instead for the mice that had taken ARW. And this indirectly reveals that the oxygen free radicals also directly affect the immune system.







Increase of Immune Function

As the result of investigation conducted on the statistical data concerned, it has been observed that for the case of the mice that had taken ARW, the quantities of interferon gamma (IFN-V) and interleukin12(1-12) which exercise cellular immune function by attacking bacteria directly and destroying them had been increased. And at the same time the quantities of interleukin (I-4 & II-5) showing antigen-antibody reactions of body fluid immunity, have also been increased.

This suggests that Ionized Water (ARW) could promote the overall immune systems.

Diabetes

For the laboratory mice having genetic disorders that can lead to diabetes, the researchers supplied Alkaline Water for about four months. And compared to those mice that did not have the ARW, blood glucose levels had been reduced, also the amount of harmful triglycerides had been reduced significantly, and overall body weight was stable. It also had shown that the amount of neutral fat had decreased noticeably which is harmful to the body.





Diabetes: The first clinical test conducted in Korea shows that water could control diseases!

3 December 2003: The Natural Medicine Research Institute of Hansuh University had invited 15 patients suffering from diabetes and started a clinical test for them.

The scientists divided the patients into two different groups; they stopped insulin treatment completely for the first group of the patients, and they had them drink the Ionized Water (ARW) instead, and the other group of diabetics had been allowed to continue their hospital treatment as well with receiving insulin as usual.

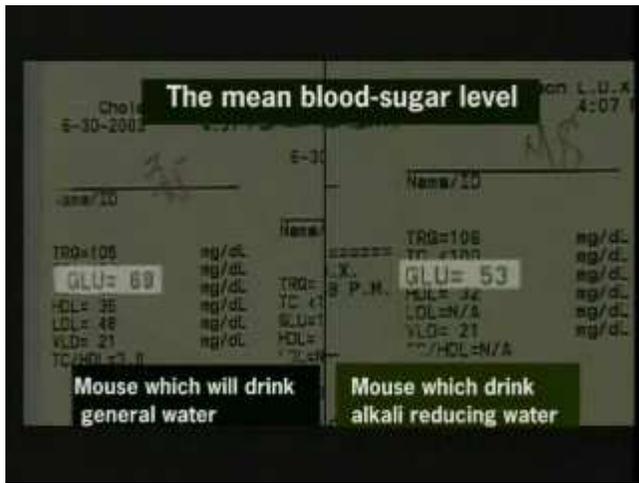
The blood glucose levels have been lowered on the whole, and the blood glucose levels, which had shown wide variations daily before were being stabilized. But the blood glucose levels for those who had not taken the Ionized Water (ARW) but continued receiving insulin everyday under the hospitalized state continued to show wide variations with their blood glucose level.

7 January 2004: Comparison of blood glucose levels before and after experiment conducted. 5 liters ARW/day administered for the 2nd group of patients.

A significant decrease of blood glucose levels for all patients on AKW. Some examples are:

1. Patient Lee: 14 years old, blood glucose level : 250
After drinking the Reduced Water for 36 days : blood glucose level : 204
2. Patient Hwang, 17 years old, blood glucose level : 254
After drinking the Reduced Water for 36 days : blood glucose level : 144
3. Patient Lee2, 9 years old, blood glucose level : 324
After drinking the Reduced Water for 36 days : blood glucose level : 210
4. Patient Lee3: 20 years old, blood glucose level : 400
After drinking the Reduced Water for 36 days : blood glucose level : 168

The experiments indicated that the effectiveness of Ionized Water (ARW) was better than insulin.



Experiment on increased immunity

In a detailed experiment involving 40,000 chicks, they let one group of the chicks drink normal underground water (A-farm) and let the other group (B-farm) drink Mineral ARW.

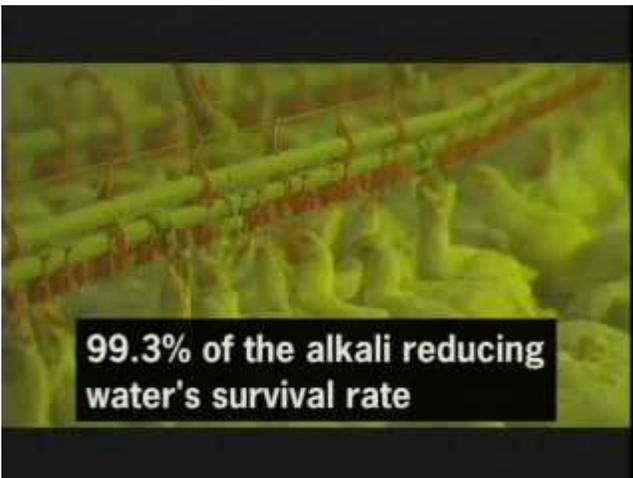




It was found that **1,100 chicks were dead from the A- farm** where the chicks were supplied with the normal underground water and recorded a survival rate of 94.5%, while the B-farm, where they supplied the Ionized Water (ARW) found that **140 chicks were dead**, and therefore recorded a survival rate of 99.3%.

This was a decline in deaths of around 10% from drinking ARW.

This suggested that depending on the kind of water the chicks were drinking, they developed different immunogenic powers.



Protection of DNA in tissues

After mixing DNA extracted from bacteria with the Mineral Ionized Water (ARW) and normal reverse osmosis-filtered water respectively, the researchers generated oxygen free radicals and observed the changes.

It was discovered that the normal water could not protect the DNA from the oxygen free radicals and so the DNA were destroyed, but in the case of ARW, it had protected the DNA from its invasion and the original condition of the DNA was still maintained.



After injecting malignant skin cancer into the body of laboratory mice, they had separated them into two different groups; one group drank the Mineral Ionized Water (ARW) and the other group had to drink normal tap water, and after 20 days they had extracted the internal organs from the mice of the two different groups and carried out measurements on the quantity of the oxygen free radicals contained in them.

It was discovered that the Ionized Water (ARW) has a mysterious power of preventing the aging process as well as preventing all kinds of adult diseases by controlling the actions of oxygen free radicals.

Effect of Electro Oxidizing Water on Skin Ulcers

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There have been great difficulties in the management of infection of burn patients. Effects of antibiotic agents are uncertain. Recently, electrooxidizing water has been used as a disinfectant in many hospitals and the effect of this water is recognized. In this study, we tried to identify the changes of bacterial flora on burned skin to use electro oxidizing water as disinfection and we found that this water clearly affects bacterial flora. There were no bacteria identified for 3 hours after disinfection. We believe that the electro oxidizing water is useful in the management of infections in burn patients.

TREATMENT OF INFECTIOUS ULCERS WITH ELECTRO OXIDIZING WATER

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Chronic ulcer with infection such as MRSA (Methicillin Resistant Staphylococcus Aureus) is difficult to heal. We often see resistance to the healing of chronic ulcers from surgical treatments or other conventional treatment methods. Because of this resistance we have applied a conservative treatment method using the electro oxidizing water and have obtained satisfactory results. We have washed the lesions with electro oxidizing water once a day. 12 cases of infectious ulcers were reported where 5 cases were healed, 3 cases were well granulated and the remaining 4 cases where infections were healed.

In a separate test we treated 12 cases of chronic ulcer cases that were resistant against various conservative treatments by electro oxidizing water. They consist of 2 cases of confinement sore (1 at sacrum, the other at ischium), 3 cases of burn (1 at sinciput, 3 at knees), 3 cases of external skin injury (2 at legs, the other at foot), 3 cases of skin fistula (1 at sinciput, 1 at knee, the other at leg), and 1 case of infection by inserting a tissue expander (at cheek).

Pus came out of each lesion. In 6 cases, MRSA was detected in the pus. As a treatment, the lesion was washed with electro oxidizing water once a day. As a result, 5 cases saw the lesions covered by epithelium, 3 cases did not go as far but had granulation, and the rest of the 4 cases saw remission of pus and foul odor. During the treatment, no abnormality was identified seemingly caused by side effects of electro oxidizing water whether it was self-conscious or not. It is reported that lavage of the lesion by electro oxidizing water demonstrates an excellent debridement effect as compared to that by only salt water or iodine solution. In our tests, the debridement effect was recognized since, according to our experience, it was easier to remove the dead tissues in the lesion than otherwise, and also remission of pus and foul odor was identified.

Furthermore, the speed of this function deserves special mention. In all cases, remission of pus and foul odor was identified within 3 days of electro oxidizing water treatment. However, if infection reached deep into the tissues, pus could not be stopped completely. It seems possible that this problem is solved if the application method is somehow improved. Finally, electro oxidizing water can be applied on burn lesions without damaging newly formed granulation. Rather, epithelium was formed quickly by the granulation effect of this water.

EXPERIENCES OF TREATING INFECTIOUS WOUND & CHRONIC ULCER WITH ELECTRO OXIDIZING WATER

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In cases of infectious wounds and chronic ulcers such as diabetic and ischemic ulcers, it is necessary to treat them by washing and cleansing before application of ointment therapy or performing an operation. Bathing, washing and wet dressing (wet to dry dressing) with electro oxidizing water was applied to 37 clinical cases. Then we observed conditions of the wounds and bacterial changes.

In this study, all cases saw improvement in regards to bactericidal effects and granulation. Among these, the wounds were conservatively healed in 7 cases, whereas the rest of 30 cases had the wounds gradually cleansed and reduced. In most cases, the bacterial counts have dropped down to aseptic condition. It is implied that electro oxidizing water has bactericidal effects in clinical cases and effectively promoted wound healing.

A. Preface

Cleaning the lesion is needed first before the operation or ointment therapy to treat infectious wounds and chronic ulcers. We tried to treat them by bathing, cleansing or wet dressing with electro oxidizing water, and observed remission of infections and formation of granulation to evaluate effectiveness of this method. Our study reports on how to apply electro oxidizing water, list up the clinical cases, and drew a conclusion on the effectiveness of electro oxidizing water.

B. Study Subject and Method

Electro oxidizing water was applied to 37 patients who were treated at the Department of Plastic and Reconstructive Surgery in Nagasaki University, School of Medicine during a 12-month period from August 1994 to July 1995. Among them, 28 were men, 9 women, ranging in age from 3 to 94 averaging 46. 17 cases had infectious wounds due to external damages or operation, 7 had chronic ulcers caused by blood vessel malfunction, 3 had gangrene or chronic ulcers accompanied by diabetes, 8 fresh burns and 2 confinement sores.

The methods of applying electro oxidizing water differ slightly by clinical case. In general, bathing or cleaning by electro oxidizing water and gauze exchanged by wet to dry dressing were applied to the patients of infectious wounds and chronic ulcers. In case of fresh burns, electro oxidizing water was used to clean and remove secretion and pus on the lesion at the time of bandage exchange. The method and frequency of applying electro oxidizing water were decided on a case-by-case basis and were modified whenever the symptoms changed.

C. Evaluation

Criteria were set for each symptom to conduct economic observation. Among these criteria, lesion's characteristics were categorized into location, size, condition of granuloma (color, bleeding), amount and character of secretion, degree of pain, foul odor, extent of epithelium formation. As to bacterial infections, bacteria were cultured on a regular basis. They were identified and the patient's sensitivity was checked. At the same time, types of disinfectants and side medicine, dressing materials, and operations procedures were described.

Regarding the side effects, we made notes about stimuli against skin and membrane, sharp pain and allergy.

D. Study results

The period of treatment by electro oxidizing water was 1 week minimum to maximum of 4 months. In all the 37 cases, each lesion was cleaned and reduced. None of them got worse. The bacteria turned negative or got reduced in 19 cases. In the worst 3 cases where infections spread to the entire body, bacteria colony counts did not decrease dramatically, but the lesions have been reduced and cleaned. 7 out of 37 cases have healed conservatively whereas the other 30 have gone through operations.

As to the side effects, 1 case had reddish skin immediately after the applications of electro oxidizing water, and another had irritation at the lesion. Since the symptoms were so light that the applications has been continued and eventually they healed by themselves without deterioration. No abnormality was found for other treatment cases.

While understanding that there are more clarification that is needed about the bactericidal effects and efficacy of electro oxidizing water, we believe that cleaning the lesion promotes its healing when electro oxidizing water is used for the treatment of infectious wounds and chronic ulcers.

TREATMENT OF SKIN INFECTION ULCERS WITH ELECTRO OXIDIZING WATER

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Electro oxidizing water has unique characteristics including high positive oxidation reduction potential, strong acidity, high concentration of dissolved chloride and oxygen. Skin ulcers with infections by MRSA (Methicillin Resistant Staphylococcus Aureus) is difficult to heal. We, plastic and reconstructive surgeons, treat skin ulcers resistant to surgical procedures of various conservative therapies. We treated the ulcers with the use of electro oxidizing water and have obtained satisfactory results. We hereby report 13 cases of ineffective ulcers.

This clinically applied therapy proved to be so effective against the symptoms that it can be conveniently applied to many more.

A. Preface

In the past several years, Methicillin Resistant Staphylococcus Aureus (hereinafter called MRSA) is becoming the main cause of infections in the hospital. Since our ward combines plastic and reconstructive surgery with dermatology, patients of chronic diseases and skin ulcer due to confinement sore as well as those who need high-tech and long-term treatments are concentrated.

Under these circumstances, it is known that strong acidic electrolyzed solution (hereinafter called EOW) has a powerful bactericidal effect, can be easily produced, and is very cost-effective. The bactericidal effect of EOW comes from physical function of oxidation-reduction potential, which is proved to have a very low toxicity compared to chemical agents.

Therefore, in our department with many skin ulcer patients, it is expected to be widely used if clinical effects and safety of EOW is established. This time, we would like to present some cases of conservative treatment against infectious skin ulcer by EOW together with our analyses.

B. Study Subject and Method

EOW was applied to 13 patients of MRSA-infected skin ulcer from December 1994 to September 1995. 9 of them were men, 4 women, ranging in ages of 16 to 76 averaging at 44. 4 cases were ulcer from confinement sore, 2 burn ulcers, 6 infectious ulcers due to injury or operation, the remaining ulcerous case was caused by blood vessel malfunction.

EOW was produced by the membrane-type electrolyzer systems installed in the hospital. The EOW was stored in shaded air-tight bottles at normal room temperature. The entire water supply was renewed every week.

C. Study Results

The period of application of EOW ranged from 1 week to 1 month. 12 out of 13 cases saw reduction of secretion, cleaning of the lesion, benign granulation etc. In addition, the bacteria turned negative with reduced colony counts. In one case, almost no changes were observed during the treatment by EOW. No particular side effects were in any of the cases.

D. Analysis

Because of its high oxidation-reduction potential, EOW kills bacteria by taking away their electrons and oxidizing them several seconds after the first contact. EOW itself gains electrons and gets neutralized to turn to low-concentration salt water. Unlike regular bactericidal chemical agents (disinfectants), EOW does not have problems of osmosis or residual of chemical substances.

Among others, bactericidal effects of EOW are reported to be effective against not only general germs such as yellow staphylococcus, coliform (*Escherichia coli*) and bacillus pyocyaneus (*Pseudomonas aeruginosa*), but also against drug resistant bacteria such as MRSA. EOW is also said to have even virucidal and eubactericidal effects.

We have applied EOW to treat 10 patients of infectious skin ulcer by washing the lesion. In comparison with the effects by salt water, we had the following impression about EOW:

1. The lesion was cleaned and benign granulation occurred more rapidly.
2. Epithelium formation from surrounding tissues was made more quickly.
3. The total period of treatment was shorter.

As for the MRSA, lavage by EOW made it turn negative quicker than that by conventional method. However, we also had a feeling that it would not be easy to completely kill bacteria in deeply infected lesions.