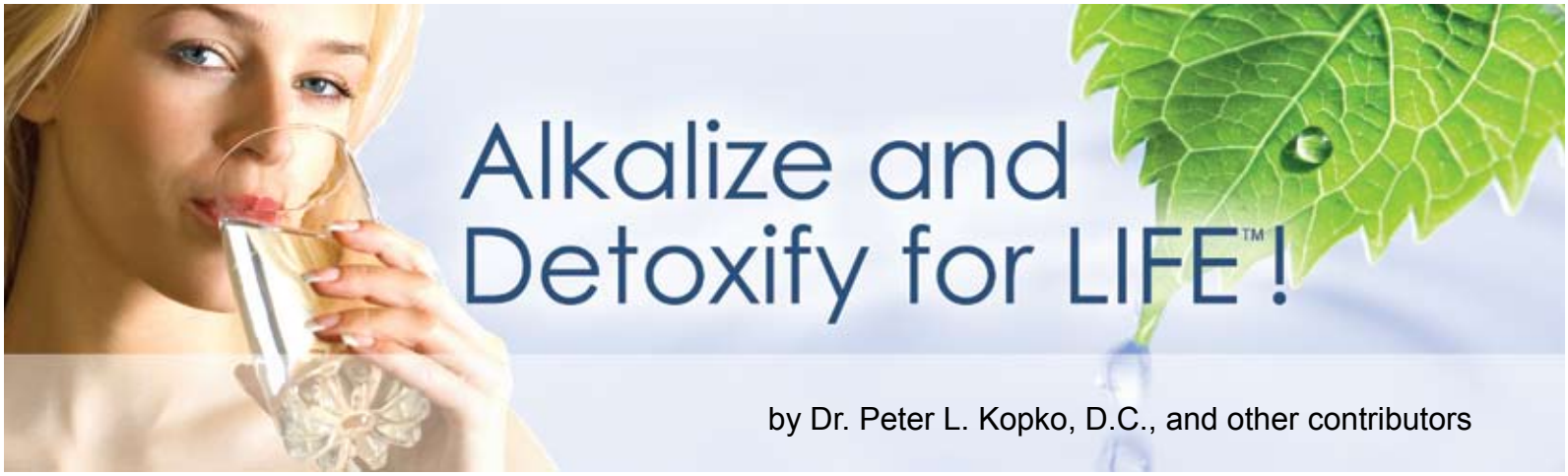

Alkalize and Detoxify for LIFE™!

by Dr. Peter L. Kopko, D.C., and other contributors

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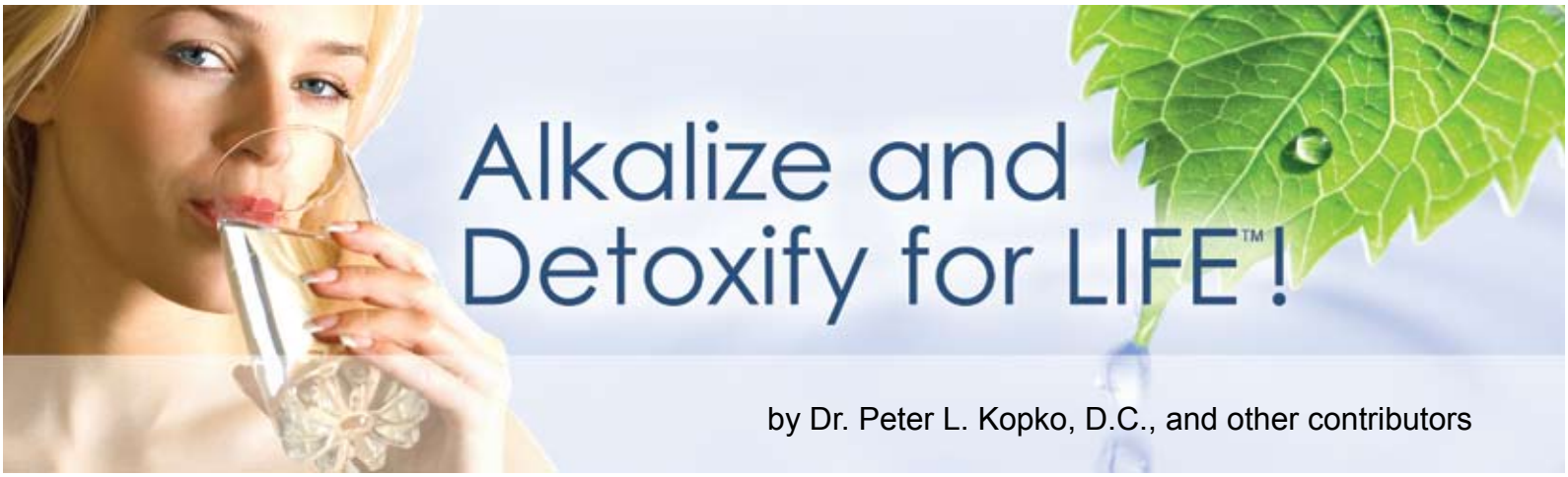


Alkalize and Detoxify for LIFE™!

by Dr. Peter L. Kopko, D.C., and other contributors

The Benefits of Alkaline Water

Restores the pH Balance in the Body

Alkaline water can neutralize the acidity of the body caused by stress, modern diet, air pollution, and many bottled waters. A higher pH in the body reduces the need for fat and cholesterol to protect the body from damaging acids.

Weight Loss

Research by Dr. Robert O. Young, author of *The pH Miracle for Weight Loss*, shows that the epidemic of obesity in the industrialized world is result of **acidity in the body.**

The body creates fat cells to trap and neutralize acids in the system.

- The **modern diet** of meats, grains, and beverages such as coffee, tea, soft drinks and alcohol is **extremely acidic**.

- Some acids are voided through urination, defecation, and perspiration, but many **acids remain in the system.**

- Excess acids in the body break down healthy tissue, so the body protects itself by creating a **natural buffer of fat.**

- **Fat cells bind to acids**. Some fat cells are voided from the system, but many **fat cells are stored** in the body, resulting in **weight gain.**

Traditional weight loss methods are doomed to fail.

- **Reducing portion size** of meals **only minimally decreases** acid intake.
- **Reducing calories will not decrease** the acidity of the body-and may increase it if large amounts of acidic beverages are included.

- **Reducing fats** in the diet **will not reduce** the acidity of the body or result in weight loss.

- **Increasing the intake of meat** will **increase the acidity** in the body.

• **Exercise increases the production of acids**, such as lactic acid. Many acids are released through perspiration, but some are retained by the system, causing **pain in muscles.**

Drinking alkaline water releases fats and creates weight loss.

• Alkaline water can reduce the body's acidity and **stop fat storage.**

• Micro-clusters of ionized water help **flush acid and toxins from the system.**

• Once fat cells are no longer needed, the body will eliminate them-**the fat melts away.**

A healthy body causes weight loss, not the other way around.

• A healthy, non-acidic body will return to its natural, **ideal weight.**

• Freed of toxins, the body's cells, tissues, and organs achieve a **healthier state.**

• A detoxified, non-acidic body has **more energy and vitality.**

"Your body can-and will-let go of the excess fat," writes Dr. Young. "If your food and drink are alkaline (meaning, in basic chemistry, the opposite of acid), all that acid-binding fat will just melt right off. There will be no need for the body to hold on to it anymore." 1

1 Young, Dr. Robert O., The pH Miracle for Weight Loss. New York: Grand Central Publishing, 2005, p. 15.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Alkaline Water Helps With Aging

Alkaline water is negatively charged and an "antioxidant." Antioxidants reduce cellular and DNA damage caused by free radicals.

Getting older and aging is not the same thing.

• **Getting older** relates to the **passage of time.**

• Aging relates to the **breakdown of tissues** in the body.

• The outward signs of **aging** include **wrinkles**, **sagging,** and **gray hair.**

• Getting older by itself **does not cause** aging.

Aging is the result of damage to bodily tissues by organic acids and by active oxygen (free radicals).

• **Organic acids** in the body break down tissues, causing **aging** and **age-related diseases.**

• Common **waste products** in the body include acetic acid, carbonic acid, fatty acids, lactic acid, and uric acid.

• Active oxygen **(free radicals)** causes **oxidative damage** to molecules within cells of the body.

• **Free radicals** are associated with a numerous **diseases**, including cancer, arthritis, atherosclerosis, Alzheimer's disease, and diabetes.

Drinking ionized alkaline water can help neutralize acids and scavenge free radicals in the body.

• Drinking ionized alkaline water causes the stomach to produce **bicarbonates**, which are absorbed into the blood stream and can **neutralize acids.**

• A proven scavenger for active oxygen is **active hydrogen.** [1]

• Active hydrogen is produced in water using **electrolysis**, the process used to **ionize drinking water.**

"As we start to lose bicarbonates in our blood, around age 45, we begin to age physiologically," writes Sang Whang, author of Aging and Reverse Aging. "All we have to do to stop aging and maintain good health is to recharge bicarbonates to the blood." [2]

Osteoporosis and the Beneficial Effects of Alkalinization

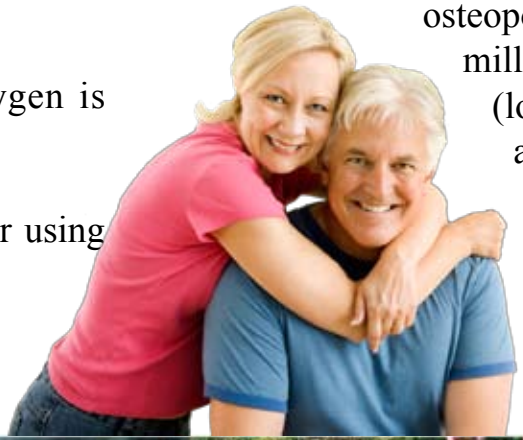
written by Dr. Peter L. Kopko, D.C

Newsletter 3| October 2007

In October 2004, the U.S. Surgeon General Richard H. Carmona, M.D. issued for the first time a report on the topic of bone health. He warned Americans that by 2020, one in two Americans over the age of 50 will be at risk for fractures from osteoporosis or low bone mass.

Osteoporosis, the Consequences of the Acidogenic Western Diet & the Beneficial Effects of Alkalinization

In October 2004, the U.S. Surgeon General Richard H. Carmona, M.D. issued for the first time a report on the topic of bone health. He warned Americans that by 2020, one in two Americans over the age of 50 will be at risk for fractures from osteoporosis or low bone mass. In the U.S. today it is estimated that 10 million people over the age of 50 have osteoporosis and another 34 million have osteopenia (low bone mass) and are at risk for developing osteoporosis. According to the



National Institutes of Health (NIH), osteoporosis accounts for an estimated 1.5 million fractures annually in the U.S. In fact, it is estimated that 1 in 2 women and 1 in 8 men will suffer an osteoporosis-related fracture in their lifetime.

Other findings in the report include:

• About 20 percent of senior citizens who suffer a hip fracture die within a year of fracture.

• About 20 percent of individuals with as hip fracture end up in a nursing home within a year.

• Hip fractures account for 300,000 hospitalizations each year.

• The direct care costs for osteoporotic fractures alone are already up to ***$18 billion each year.*** The number is expected to increase if action to prevent osteoporosis is not taken now.

If this is not alarming enough, according to this report, osteoporosis is a silent condition because many Americans are unaware that their bone health is in jeopardy. In fact, four times as many men and nearly three times as many women have osteoporosis than report having the condition. One of the most dangerous myths about osteoporosis is that only women need to worry about bone health. Osteoporosis affects men and women of all races.

All researchers and health care providers agree that the key to this potentially life threatening and disabling condition is **prevention.** Early intervention, recognizing risk factors and modifying or eliminating them and life style changes are the agreed remedies.

Let us take a look at two of the agreed leading risk factors:

• Chronic acidemia from protein-rich meat based diets.

• Chronic acidemia from the over consumption of carbonated soft-drinks, coffee and alcohol.

It is my opinion that after 26 years of clinical experience that absent the side-effects of certain prescription medications which are certainly a risk factor for osteoporosis, the underlying primary risk factor is ***chronic acidemia.*** It has been well documented that the traditional Western diet of protein-rich foods and the over consumption of soft-drinks, coffee and alcohol can lead to a chronic low-grade metabolic acidosis. This diet increases the net dietary acid load, lowers the pH of the blood and acidifies the urine.

So what can we do on a daily basis to combat this chronic acidemia?

Both in my practice with my patients and at my own home I recommend along with dietary changes, exercise, calcium and Vitamin D supplementation, the drinking of ionized, micro-clustered alkaline water. Why alkaline water? Every time that the body succumbs to this low grade metabolic acidosis, the body must regain balance and return to homeostasis. Our blood pH level must remain in a very narrow range or organ systems, enzyme functioning and basic life support become at risk at failing. The physiological response to this acidosis is to leach calcium out of our bones and thereby buffer this systemic acidity. I call this process the Tums effect. It is analogous to taking Tums when your stomach is upset. Tums is primarily calcium just like your bones. When this process occurs day after day your bones are leached out, your calcium bank is depleted and you end up with osteoporosis.

The traditional Western diet is far more acidifying than you may think. According to Sang Whang, an engineer, scientist, inventor with many US patents and expert on anti-aging and alkalinity, drinking one glass of cola with a pH value of 2.5 could in theory lower the blood pH to dangerous levels if it were not for this bone calcium homeostatic mechanism. In fact without this bone calcium leaching mechanism, one would need to drink 32 glasses of alkaline water to neutralize this one cola's acidity, according to Sang Whang.

Researchers Remer and Manz developed a system for calculating the average **p**otential **r**enal **a**cid **l**oad of specific foods, referred to as the PRAL. Fats and oils have a relative value of zero; they do not produce an acidic load on the kidneys. As the PRAL goes up in positive numbers, so goes up the potential acid load. Negative numbers represent an alkaline effect.

- Milk and Dairy Products: +1.0-+23.6
- Meat and Meat Products: +9.5
- Fish: +7.9
- Grain Products: +3.5-+7.0
- Vegetables: -2.8
- Fruits and Fruit Juices: -3.1

We all know that it is very important to drink good clean water every day to maintain health. Why not optimize that mandatory requirement for excellent health by ***drinking ionized, micro-clustered alkaline water*** and mitigate the ill effects of acidic foods and help reverse the progression of conditions like osteoporosis?

Detoxifies cells more efficiently than standard drinking water.

• Due to their smaller size, micro-clusters of ionized water molecules are expelled from the cells more efficiently, carrying damaging toxins out of the cells and flushing them out of the system.

The negative charge of ionized alkaline water will attract the positive ions of acids and neutralize them within the body.

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How Alkalinizing the Body Promotes Detoxification

written by: Dr. Peter L. Kopko, D.C.

Today's common diet which is rich in proteins from meat, dairy products and processed grains has been shown to create what is called metabolic acidosis. The physiological systems of the body are heavily taxed by this acidic load. This can be evidenced by the fact that most Americans have highly acidic urine. The majority of patients that have been tested in my office that are not vegetarians run a urine pH of 4.5-5.5 which in my opinion is overly acidic. What benefit could be achieved by making the urine more alkaline?

Let's first look at the consequences of what produced the acidic urine. Metabolic acidosis most often results from the over ingestion of the above mentioned food groups. The breakdown of these proteins creates acidic byproducts which must be eliminated by the kidneys, thus producing acidic urine. This problem is further complicated by the ingestion of tap water which itself has been found to be at best neutral or a pH of 7 and often acidic or below a pH of 7. When the body is in a chronic state of metabolic acidosis our liver detoxification mechanisms are compromised. The liver enzymes which are involved in detoxification are referred to as phase I and phase II detoxification liver enzymes. These enzymes are highly pH sensitive and are responsible for the chemical biotransformation of toxins into water-soluble metabolites for excretion in the urine. These very same enzymes are enhanced by alkalinizing the urine to a pH of 7.1 to as high as 8.3. This very process is performed every day in emergency rooms to accelerate the excretion of ingested poisons.

In the acute medical setting intravenous sodium bicarbonate is used to alkalinize the urine to a pH of 7.5 to 8.3. The method by which urine alkalinization works to enhance toxin elimination is called ion trapping, which in turn is the ability to enhance urinary excretion of weak acids in alkaline urine. Most poisons and toxins are acidic and weak acids. Therefore by creating a more alkaline physiological environment we can enhance and accelerate the detoxification process on an ongoing daily basis. It is this chronic acidification process of metabolic acidosis that is hin-

dering everyone's ability to detoxify. This brings us to what can we do to alkalize our bodies?

Drinking alkaline water daily would greatly enhance the physiological processes responsible for attaining and maintaining a relative blood and urine alkalinity. Everyone today is aware that we need to drink more and higher quality water. The issue of the water's pH though has not been emphasized enough. Why not enhance the body's alkalinity by drinking 6-8 glasses of alkaline water daily? How can this be accomplished?

This is simply accomplished by utilizing a home water filtration system that not only filters the water, but **adjusts the pH as well**. In addition, the unit micro-clusters the water – this means that the large 15 molecule clusters of water are reduced to 5 molecules in size. This process actually makes water "wetter" and allows for better hydration and delivery of nutrients to the cells. There is even another positive aspect to the function of these machines – they create negative ions, which are natural anti-oxidants. That's right …your water will help neutralize free radicals and slow down the aging process. I utilize the Life Ionizer water filtration unit both at my home and my office. My patients and my dog, Roswell, love the water.

Alkaline Water Provides Superior Hydration and Nutrition at the Cellular Level

• Negatively charged alkaline water neutralizes free radical positive ions.

• Ionization breaks clusters of water molecules into smaller micro-clusters, reducing the size of the clusters from the 11-16 molecules in standard water to just 5-6 molecules in ionized water. Smaller clusters pass through cell walls more easily and hydrate the cells more quickly.

• Faster hydration allows the body to regulate its temperature more efficiently.

• Micro-clusters of mineral-bearing ionized water also deliver nutrients more efficiently to the cells.

The New Sports Drink: Alkaline, Ionized, Micro-clustered Water

Written By: Dr. Peter L. Kopko, D.C.

The process of drinking water before and during exercise is referred to as pre-hydration and hydration respectively. According to the American College of Sports Medicine, the purpose of pre-hydrating is to start an exercise activity in what is called a euhydrated state. That is your body is normally hydrated and plasma electrolyte levels have also reached a normal level. This pre-hydration activity should be performed several hours before exercise to enable fluid absorption and allow urine output to return to normal levels. The goal of drinking water during exercise is to prevent excessive water loss or dehydration through the physiological process of sweating. Individual sweat rates can be estimated by measuring body weight before and after exercise. Approximately for every one pound of body weight lost, the equivalent loss of water would be one pint or eight ounces. The goal is to prevent water loss in excess of 2% of the total body weight or one becomes dehydrated.

It has been known through studies that were originally performed in the 1940's that dehydration resulted in impaired physiological and performance responses. More recent studies have demonstrated performance loss at dehydration levels less than 2% of body weight. Specifically it has been demonstrated that even mild to moderate dehydration reduces aerobic endurance performance resulting in increased body temperature, heart rate, perceived exertion and possibly increased reliance on carbohydrate as a fuel source.

Dr. Judelson, et al., in a study published in October, 2007, demonstrated that dehydration significantly decreased resistance exercise performance as would be performed commonly in a gym with weights or machines.

Clearly drinking water before and during exercise is important. The composition of this fluid replacement has also gone through many changes. Conventional wisdom for many years was that salt, sodium, needed to be added to the water to replace sweat lost sodium. Recent thought has arrived at the conclusion that most people eating the standard Western diet have consumed too much salt and subsequent sodium and that it does not need to be immediately replaced when exercise lasts less than two hours. The issue now becomes what is the best water to replace exercise induced water loss though sweating.

Consider that when exercising you are consuming more oxygen and metabolizing energy through muscle work. This process creates free radicals, lactic acid and a mild metabolic acidosis.

Drinking alkaline, ionized, micro-clustered water may help ameliorate all three of these exercise induced physiological end-products. Water that has been alkalinized may help neutralize the exercise induced acidosis. Alkaline water by definition contains alkaline forming minerals like calcium, magnesium, potassium and sodium. Water that has been ionized may help act as a free-radical scavenger to address the issue of accelerated oxygen consumption. Ionized water by definition has more negatively charged hydroxyl ions than tap or filtered water. Ionized water has the ability to give up these extra negative charges and may help act as a free-radical scavenger. Lastly when water is micro-clustered it may be absorbed at a faster rate. This may help with general rehydration.

It is recommended that you drink 400-600 ml of water 2 hours before exercise and 150-300 ml every 15 to 20 minutes of exercise, varying the volume depending on your total body weight and sweating rate.

ph Balance Energy & Diet Drinks

Originating in Japan in the early 1960s, energy drinks such as Red Bull are sold in 134 countries worldwide. Global sales have surpassed $5 billion a year and are projected to hit $10 billion by 2010. The popularity of diet soda continues to grow amid concerns about obesity, with 59% of Americans saying they drink diet soda and worldwide sales surpassing $20 billion a year. Sales of sports drinks, which originally were designed to help athletes rehydrate, total $3 billion a year. Each of these beverages offers some benefits, but all contribute to acidity in the body.

Energy drinks cause dehydration and increase bodily acid.

- The key ingredient in most energy drinks is **caffeine** often from guarana or yerba mate.

- **Caffeine** is the source of much the energy boost, but it also **causes dehydration**. To rehydrate, you need to drink two cups of water for every cup of energy drink consumed.

- **Energy drinks** are extremely acidic. For example, Red Bull has a pH level of 3.26, almost **10,000 times more acidic than pH neutral water.** [1]

Diet soda has been linked to weight gains and acidity.

• A 2008 study at Purdue University found that rats on diets containing the artificial sweetener saccharin gained more weight than rats given sugary food,[2] perhaps because the body does not receive a signal to "rev up" the metabolism. [3]

• An eight-year study with 1,550 participants conducted at University of Texas Health Science Center, San Antonio, found that drinkers of **diet soft drinks** had **a greater risk of gaining weight** than drinkers of regular soft drinks. [4]

• **Diet soda** is even more acidic than energy drinks. Diet Coke has a pH level of 2.97, **more than 10,000 times more acidic than pH neutral water.** [5]

Sports drinks are designed for athletes exercising more than two hours.

• **Sports drinks** contain electrolytes, **carbohydrates** and other nutrients burned up through extended periods of exercise.

• Most sports drinks have between **13 and 19 grams of sugar** per eight ounce serving. Drinking sports drinks without working out increases caloric intake.

• **Sports drinks** are even more acidic than energy drinks and diet soda. Gatorade has a pH level of 2.95, **more than 10,000 times more acidic than pH neutral water.** 6

Americans are spending billions of dollars each year on beverages that may provide a short-term boost but also increase the likelihood of gaining weight and increasing acidity in the body. A better solution is to hydrate frequently with ionized alkaline drinking water, which hydrates better than diet soda and energy drinks and helps to neutralize the acidity of the body.

1 Young, Dr. Robert O., *The pH Miracle for Weight Loss*. New York: Grand Central Publishing, 2005, p. 125.

2 "A Role for Sweet Taste: Calorie Predictive Relations in Energy Regulation by Rats," Susan E. Swithers, PhD and Terry L. Davidson, PhD, Purdue University; Behavioral Neuroscience, Vol. 122, No. 1.

3 American Psychological Association (2008, February 11). Artificial Sweeteners Linked To Weight Gain. Science Daily.

4 Abstract 1058-P. Sharon P. Fowler, MPH, University of Texas Health Science Center School of Medicine, San Antonio.

5 Young, Dr. Robert O., *The pH Miracle for Weight Loss.* New York: Grand Central Publishing, 2005, p. 125.

6 Young, Dr. Robert O., *The pH Miracle for Weight Loss.* New York: Grand Central Publishing, 2005, p. 125.

Acidity and the American Diet

Alkaline water tastes lighter with a pleasantly sweet flavor. Using water with a higher pH level improves the taste of beverages and food. Cooking with alkaline water improves the taste and quality of foods and using acidic water when boiling eggs improves their quality.

Acidity in the Body

The human body creates acid, all day, every day as a byproduct of metabolism. In addition, acid is introduced into the system through eating and digestion. Many secreted and digested acids are swept away by the blood stream, filtered out by the kidneys, and released from the body in the urine. Other acids leave the body through perspiration. Your body can only process a certain amount of acids, however, so it is possible to overload the system and for the body to become acidic.

The American diet is extremely acidic.

• Meat, including **beef, pork, chicken** and t**urkey** are acidic.

• Dairy such as **milk, butter** and **cheese** are acidic.

• Grains such as **rice** and **barley** are acidic.

• Beverages such as coffee, tea and **soft drinks** are very acidic.

• Fruit and fruit juices contain high concentrations of acid.

• Simple carbohydrates such as **potatoes, pasta** and **bread** contain large amounts of acids.

Acidity in the body is related to disease.

• Acid reflux is a painful condition that occurs when acidic stomach liquid backs up (refluxes) into the esophagus causing irritation, inflammation and damage to the lining of the esophagus.

• High cholesterol occurs when the body produces excessive amounts of cholesterol to neutralize large amounts of acids in the blood stream before they damage living cells.

• Heart disease is the result of a build-up of cholesterol in the coronary arteries that reduces the blood flow to the heart muscle. As stated above, cholesterol forms to protect the arterial wall from acidity in the blood.

• **Fat** is produced by the body to trap and neutralize acidic waste in the body. As Dr. Robert O. Young, author of *The pH Miracle for Weight Loss,* puts it, "The body retains fat as a protection against the overproduction of acids produced by the typical American diet....Your fat is actually saving your life."

• **Inflammatory** related diseases such as allergies, arthritis, fibromyalgia, psoriasis and even stroke are related to low-grade metabolic acidosis.

Drinking alkaline water can help restore the body's pH balance and reduce its acidity.

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Alkalinization and the PRAL Score of Food

written by: Dr. Peter L. Kopko, D.C.

Measuring the pH (alkalinity or acidity) of water is easy: you simply place 2-3 reagent drops in an ounce of water and look at the color of the water. Measuring the pH of solid foods is much more difficult. Today, there are two basic methods for calculating the pH of foods.

The first method is known as ash analysis. This method requires food stuff to be incinerated at a high temperature. The ashes are analyzed for mineral content. Acidic anions in food include chloride, phosphorous, sulfates and other organic acids. Basic/alkaline cations in food include sodium, potassium, calcium and magnesium. The problem with this method is that it did not take into account the bioavailability of the food's constituents. It was in a sense an in vitro (in a laboratory) test as opposed to an in vivo (in life) analysis.

In 1995 two researches Dr. Thomas Remer and Dr. F. Manz developed a new way to measure the acid/base effect of specific foods on the human body. This pH measuring tool is referred to as the Potential Renal Acid Load (PRAL). The PRAL of an ingested specific food is determined by measuring the acidity and ammonium appearing in the urine and then subtracting out the measured urinary bicarbonate. This method yields a net acid excretion score based on direct measurements of the urine. Previous to the implementation of the PRAL score method, ash analysis was utilized.

The PRAL method is far superior to ash analysis in that it takes into effect the digestion and absorption of a food and its direct effect on the kidneys and urine. However in my opinion the PRAL method has some limitations as well in that a specific food may elicit a pH homeostatic balancing mechanism and that would influence the end result in the urine. This may be evidenced by the PRAL score of coffee. Nevertheless, the PRAL method remains the best method to date.

Let's calculate a total PRAL score for an average Western diet meal. Take 250g (about ½ lb.) of chicken. The PRAL value for chicken is 8.7 per 100 grams. We have 250 grams which is 2.5 times 100, so we multiply 8.7 by 2.5 which equals +21.75. Add ½ pound of potatoes, that would be -4 times 2.5 which equals -10. Add 8 oz. whole milk, so multiply 1.1 by 2.5(8 oz. equals about 250g) which equals +2.75. The total for the meal would be +14.50. That is a highly acidic load and so typical of the average American diet. Using other typical foods yields the same acidic story. It is not until you incorporate several servings of vegetables and fruits and limit the amount of meat, poultry and fish before you reach a net alkaline PRAL score. Go back to the PRAL table above and look at the food group averages. The whole story is there. Meats, grains and dairy products are all highly acidic. Vegetables, fruits and nuts are all alkaline. Interesting isn't it? All the foods you have always been told to eat because they are healthy are alkaline forming!

Here is an example of a PRAL food chart:

(Each score is based on a 100g portion of food)
(red is acidic and blue is alkaline)

Food Group and Food	PRAL Score
Meat and Meat Products Average	**9.5**
Lean Beef	7.8
Chicken	8.7
Canned, Corned Beef	13.2
Frankfurters	6.7
Liver Sausage	10.6
Lunch Meat	10.2
Lean Pork	7.9
Rump Steak	8.8
Salami	11.6
Turkey Meat	9.9
Veal Fillet	9.0
Fish Average	**7.9**
Cod Fillet	7.1
Haddock	6.8
Herring	7.0
Trout	10.8
Milk, Dairy, and Eggs	
Milk and non-cheese average	**1.0**
Low protein cheese average	**8.0**
High protein cheese average	**23.6**
Buttermilk	0.5
Low Fat Cheddar	26.4
Gouda Cheese	18.6
Cottage Cheese	8.7
Sour Cream	1.2
Whole Egg	8.2
Egg White	1.1

Egg Yolk	23.4
Hard Cheese	19.2
Ice Cream	0.6
Whole milk	1.1
Whole Milk Pasteurized	0.7
Parmesan Cheese	34.2
Processed Cheese	28.7
Whole Milk Yogurt w/Fruit	1.2
Whole Milk Yogurt Plain	1.5
Sugar and Sweets Average	**4.3**
Milk Chocolates	2.4
Honey	-0.3
Cake	3.7
Marmalade	-1.5
White Sugar	-0.1
Vegetables Average	**-2.8**
Asparagus	-0.4
Broccoli	-1.2
Carrots	-4.9
Cauliflower	-4.0
Celery	-5.2
Chicory	-2.0
Cucumber	-0.8
Eggplant	-3.4
Leeks	-1.8
Lettuce	-2.5
Mushrooms	-1.4
Onions	-1.5
Peppers	-1.4
Potatoes	-4.0
Radishes	-3.7
Spinach	-14.0
Tomato Juice	-2.8
Tomatoes	-3.1
Zucchini	-2.6

Fruits, Nuts, and Juices Average	**-3.1**
Apple Juice	-2.2
Apples	-2.2
Apricots	-4.8
Bananas	-5.5
Black Currants	-6.5
Cherries	-3.6
Grape Juice	-1.0
Hazelnuts	-2.8
Kiwi Fruit	-4.1
Lemon Juice	-2.5
Orange Juice	-2.9
Oranges	-2.7
Peaches	-2.4
Peanuts	8.3
Pears	-2.9
Pineapple	-2.7
Raisins	-21.0
Strawberries	-2.2
Walnuts	6.8
Watermelon	-1.9

Grain Products

Bread average	**3.5**
Flour average	**7.0**
Noodles average	**6.7**
Mixed Grain Rye Bread	4.0
Rye Bread	4.1
Mixed Grain Wheat Bread	3.8
Wheat Bread	1.8
White Bread	3.7
Cornflakes	6.0
Rye Crackers	3.3
Egg Noodles	6.4
Oats	10.7
Brown Rice	12.5

White Rice	1.7
Rye Flour	5.9
White Spaghetti	6.5
Whole Grain Spaghetti	7.3
Wheat Flour	8.2
Legumes Average	**1.2**
Green Beans	-3.1
Lentils	3.5
Peas	1.2
Fats and Oils Average	**0**
Butter	0.6
Margarine	-0.5
Olive Oil	0.0
Sunflower Oil	0.0
Beverages	
Alkali rich average	**-1.7**
Alkali poor average	**0**
Draft Beer	-0.2
Pale Beer	0.9
Stout Beer	-0.1
Coca-Cola	0.4
Cocoa	-0.4
Coffee	-1.4
Mineral Water	-1.8
Red Wine	-2.4
Tea	-0.3
White Wine	-1.2

Eat healthy alkaline foods and drink 3-4 quarts of ionized alkaline water every day!

References

1) Remer and Manz, J. Am Diet Assoc. 95: 791-797, 1995.

A Paleo-Biological View of the Oxidation-Reduction Potential (orp) and How it Relates to Alkaline, Ionized, Microclustered Water

By Dr. Peter L. Kopko,D.C.

A very simple and at the same time complex event took place approximately 2.5 billion years ago. This is when a special form of bacteria called blue green algae learned how to use sunlight to strip hydrogen off of water and combine it with carbon dioxide to make sugars. The origin of photosynthesis. But what does this have to do with oxidation-reduction potentials? The answer is the creation of oxygen.

A by-product of photosynthesis is the formation of free oxygen or O2. As the predominant blue-green algae utilized photosynthesis and stripped hydrogen off water, the "waste gas" produced was oxygen. At this stage of the planet's development, oxygen, was a new comer. At first it was bound to oxygen-hungry minerals like iron and silicon and then absorbed into solution in the oceans. Once these reservoirs were full it began to accumulate in the atmosphere, fundamentally changing the chemistry of the planet forever. And it is this chemistry that we are interested in.

Chemistry is essentially the science of moving electrons around. A chemical bond between two atoms is actually a pair of electrons shared by two atoms and a chemical reaction is the movement of electrons from some bonds to others. In any chemical reaction, bonds between certain atoms, those in the reactants are broken and at the same time new bonds are formed in the products. This is a coupled oxidation and reduction reaction. The bond that gives up its electrons is oxidized and the bond that received the electrons is reduced. When it comes to human physiolophy and life itself it appears it is better to receive electrons than to give them. Aging itself may be a process of losing electrons and becoming oxidized. So called free radicals strip away electrons from cells causing a myriad of problems. The rusting of metal, the browning of a cut apple and

the aging of human cells whether they be skin cells or heart cells are all at the mercy of free radicals. What to do?

When electrons from atoms or molecules are put together the available electrons will move toward bonds that are more positive or lacking electrons. How does this work?

Lets look at water, $O2 + 2H2 \rightarrow 2H2O$ or if we balance it to make one molecule of H2O (the number of atoms must be the same on each side of the equation) so when you combine oxygen and hydrogen to the water, the electrons of the hydrogen move toward the oxygen. In the process hydrogen is oxidized and oxygen is reduced.

$H:H \rightarrow 2H^+ + 2e^-$, so $\frac{1}{2}\ 02 + 2H + 2e \rightarrow H2O$

So what does this have to do with human physiology, drinking water and health? Let me explain…

The game of survival is to not get oxidized to death, literally. So we can take anti-oxidants like Vitamin C, Vitamin E, ect. , free radical scavengers. These substances give up electrons and help restore the cells and molecules to a healthy state. What if I told you that your drinking water could do the same thing.

How?

Ionized, alkalinized, microclustered water has free electrons available to do free radical scavenging. This is referred to as the negative ORP or oxidation- reduction potential. We have come full circle now.

Water on the Global Level

By Dr. Peter L. Kopko,D.C.

Our planet's drinkable water is quickly disappearing. The mismanagement of our natural water reserves through its misplacement and displacement is contributing to climate change as well. Industrialized nations have polluted the surface water to the point that we are now taking water from the ground, the wilderness and watersheds and moving it to where we need it. It is moved to big cities and then dumped into the ocean. Furthermore we pave over water retentive lands , frustrating the hydrologic cycle to fulfill its responsibility and bring the water back.

This global water problem is further complicated by what is termed the "virtual water trade." The virtual water trade is the process where one country uses vast amounts of water to produce commodities that are exported to other countries. Everyday in the U.S., 1/3 of all domestic water use is for the production of exportable commodities. This is taxing our drinkable water reserves. In fact, Australia, another country involved in the virtual water trade, has hit the "water wall". They are running out of drinkable water.

It was believed until recently that the hydrologic cycle could not be interrupted but we now know that it can and has been dramatically and deeply affected by our abuse and displacement of water.

A global water cartel is forming throughout the world. The future may be more about water and less about oil. Corporations are actively engaging in the water business. Further proof of this is the privatization of municipal water supplies. Large corporations now survey the globe looking for aquafers much like they did in the past looking for oil or mineral reserves. There are huge aquafers in Latin America that are being surveyed.

As with global warming, the global water crisis is often written off as a cyclical event in nature. Global warming is not the result of cyclical temperature changes and the global water issue is not a result of cyclical draught. Some startling facts:

- Lake Meade at its present rate of drying up will be gone in 13 years.

- 50 billion bottles of water are sold each year and 95% of the plastic bottles are not recycled.

- The average American uses about 150 gallons of water a day, this includes private and domestic use.

- The average British citizen uses 30 gal lons per day, private and domestic.

- Kenyans use 3 gallons per day period.

- It takes 74 gallons of water to produce one cup of coffee.

- It takes 600 gallons of water to produce the corn that is then fed to the cow to produce 1/3 of a pound of hamburger'

In conclusion, geophysicists have recently determined that from damming up water in huge dams, redirecting streams, rivers and lakes, the speed of the earth's orbit has been altered and has shifted the tilt of axis and the shape of the gravitational field.

The Alkaline Diet Recipes

Katy Joy Freeman
Raw Food Chef

These two soups are Live soups. What does that really mean? It means we are preserving the enzymes and good nutrients by not heating the soup over 105 degrees. You'll reap many more benefits from your foods by eating them raw or slightly heated.

Creamy Cucumber Soup

- 1 cucumber, peeled and cubed
- 1 medium ripe avacado
- 1/2 lemon, juiced (or just squeeze, but be careful to omit the seeds)
- 1/2 cup *ionized water*
- 2 tablespoons of fresh Dill / can use dry but use less
- sea salt to taste / be sure not to good salt!

Blend all ingredients and slightly heat if you want or enjoy at room temperature.

Top with any or all of the following: micro greens (sprout mixture), spouted sunflower seeds, diced celery, small avocado chunks.

Live Cream of Tomato Soup

(Serves 4)

This has become an all time comfort food in our house! The ***ionized water*** used in this soup really gives it an energy boost! Play around with the ingredients and have fun adding what sounds good to you.

- 3-4 medium tomatoes
- handful of fresh basil
- tsp. fresh oregano (can use dried as well; but use less)
- 1-2 cloves minced garlic
- 1 medium avocado
- 1/4 cup soaked sun-dried tomatoes
- 3/4 to 1 cup ***ionized water***
- mineralized salt to taste

Blend all ingredients in Vitamix or any powerful blender.

Transfer to soup pan and slightly heat.

Suggestions for toppings: pine nuts, chopped sprouts, chopped celery, chopped mushrooms, chopped olives, chopped onions, chopped sun-dried tomatoes.

Seasonal Green Smoothie

A great way to maintain an alkaline lifestyle is getting enough leafy greens iand ionized water in your diet. What better way to do this than starting your day with a delicious green smoothie. Try to drink a green smoothie a couple times a week and see if you notice a difference! They just may become your newest healty addiction!

- 1 ripe banana
- 2 persimmons - diced
- 2 dates/ pitted and soaked in 3/4 cup *ionized water* - may add more water if you want it thinner
- 2 handfuls of greens of your choice - try one or more of the following: romaine lettuce, kale- de-stemmed, spinach,cilantro, parsley,etc...

Mix all ingredients including the date soaking water in a high speed blender, pour, and, enjoy!

Master Cleanse Knock Off

This drink is a great way to start your day! It's mostly *ionized* water with lemon and cayenne pepper give a nice boost to your immune system. We regularly enjoy this cleansing elicitor in our house first thing in the morning or sometimes all day for a mild detox and cleanse.

- 16 oz *ionized water*
- 2 tablespoons fresh squeezed organic lemon juice
- 1/8 tsp cayenne pepper
- 1 tablespoon organic grade B maple syrup

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How Ionizers Work

First developed in Japan in the 1950s, water ionizers turn ordinary tap water into ionized, alkaline water by delivering a strong electrical current to the water. This process, known as electrolysis, separates the water into two streams: alkaline mineral water for drinking and acidic mineral water for the skin, and for cleaning and sanitizing. The process also breaks large clusters of water molecules into "micro-clusters" that are readily absorbed by tissues and cells, leading to better hydration at the cellular level.

Before the electrolysis process begins, the water is filtered to reduce pesticides, chlorine, and contaminants. The highest quality ionizers use a nine-stage, dual filter system to clean the water. The best ionizer companies actually customize the filters to reduce the major contaminants in the water from the source water of the consumer's home, based on a water report from the local water authority. This increases the performance and effectiveness of the ionizer's filtration system. Two factors determine the ability of a water ionizer to produce hexagonal water: 1. the number of electrodes; and 2. the wattage delivered to them. Quality electrodes are designed to maximize contact with the water; they do this buy utilizing mesh plates that increases the flow of the water through the electrodes surface area. The water circulates through the MESH plates so there is more contact time with the MESH electrodes. Once purified, the water enters the ionization chamber. An electrical charge is delivered to the water through positive and negative electrodes. The more the water goes through the electrodes, the greater the charge delivered to the water.

The best ionizers use seven platinum-coated titanium plates to deliver the charge to the water. These ionizers come in counter top and under the counter models. The newest ionizers are powered with a Switched-Mode Power Supply (SMPS) to more efficiently deliver amperage to the plates. The combination of 59 mesh technology and SMPS boosts the pH and ORP of the hexagonal water by five to ten percent.

A water ionizer has a chamber system with a series of the platinum coated titanium plates with positive and negative electrodes. The negative electrode attracts positively charged minerals such as calcium, magnesium, manganese and potassium, to its chamber. These are the alkaline minerals. The positive electrode attracts negatively charged minerals such as chlorine, fluoride, sulfur, phosphorus, bromine, silicon and copper to its chamber. These are the acidic minerals. A membrane with small holes separates the two chambers. The holes are too small for clusters of water molecules to pass through, but large enough to permit the ionized miner

als to move toward the positive and negative electrodes. The membrane thus separates the alkaline water from the acidic water. The ionizer then pumps a stream of alkaline water out of one outlet and a stream of acidic water out of another. About 70 percent of the water produced by the ionizer is alkaline; about 30 percent of the water is acidic. In addition to separating the alkaline and acidic minerals, ionization also creates microclusters of water molecules.

Water molecules tend to cluster together in groups of 13 to 16 molecules. The ionization process breaks these clusters of water molecule clusters apart, creating smaller clusters of five to six molecules – the hexagonal water molecules. The microclusters of water molecules are more easily absorbed at the cellular level. This improves the delivery of nutrients and hydration at the cellular level. It also facilitates the flushing of toxins and acids out of the cells.

Both alkaline and acidic water have benefits. Alkaline water is ideal for drinking, cleaning vegetables, and cooking. Its antioxidant properties promote good health slow the aging process. The astringent properties of acidic water in the 4.0 to 6.0 range are ideal for cleaning and toning the skin. Used as a rinse when washing your hair, acidic water helps the scalp, reduces tangles, and gives hair a radiant shine. It also helps the hair and in of pets. In higher concentrations, acidic water has strong sanitizing properties and can be used for cleaning around the house and for cleaning toothbrushes, hands, and even as a mouthwash. Water ionizers produce both alkaline water your drinking water for better health. There is one ionizer company that provides cylinder-style lead-free glass bottles to its ionizer customers to keep the pH and ORP stable and to make sure that no contaminants get into the water as in plastic bottles.

The finest Alkalizers for the money are the culmination of decades of scientific research, state of the art technology upgraded with every cutting-edge refinement. Tomorrow's water technology today is why LIFE leads the industry in revolutionary innovations.

Dr. Peter L. Kopko, D.C.
Dr. Kopko is a board certified doctor of Chiropractic with a sub-specialty in Sports Medicine. He became the first Certified Chiropractic Sports Physician in San Diego County and 90th in the world. He is a nutritionist and dark field microscopist with over 28 years experience. Dr. Kopko has been consulting for LIFE Ionizers where he performs literature research, science laboratory research and has served as their Chief Science Advisor for ten years now.

LIFE™ IONIZERS

For more information on the benefits of alkalized, ionized water or to purchase one of our products, go to **www.Lifeionizers.com.**
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