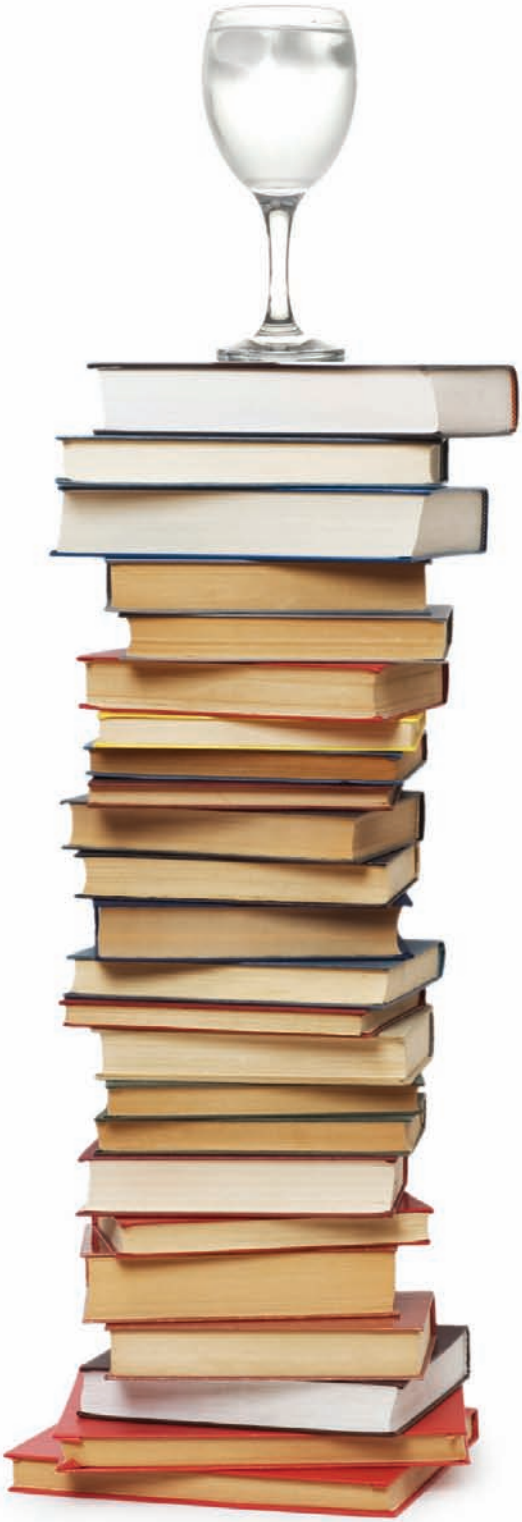
What you should know about the water you drink



...the chemistry of life is water chemistry.

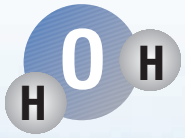
Excerpts from
BENEFITS OF ALKALINE, IONIZED WATER
by Dr. Hidemitsu Hayashi, M.D.
http://www.ionizers.org/water.html

Water, the chemistry of life

Whenever we attempt to determine whether there is life as we know it on Mars or other planets, scientists first seek to establish whether or not water is present. Why? Because life on earth totally depends on water.

A High percentage of living things, both plant and animal are found in water. All life on earth is thought to have arisen from water. The bodies of all living organisms are composed largely of water. About 70 to 90 percent of all organic matter is water.

The chemical reactions in all plants and animals that support life take place in a water medium. Water not only provides the medium to make these life sustaining reactions possible, but water itself is often an important reactant or product of these reactions. In short, the chemistry of life is water chemistry.

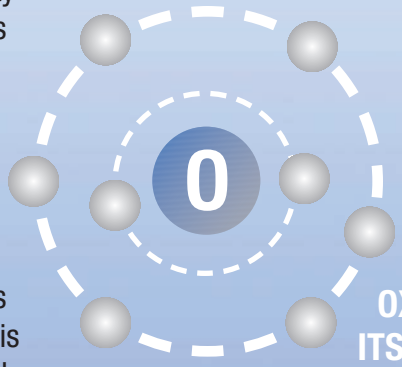


WATER MOLECULE

Water, the universal solvent

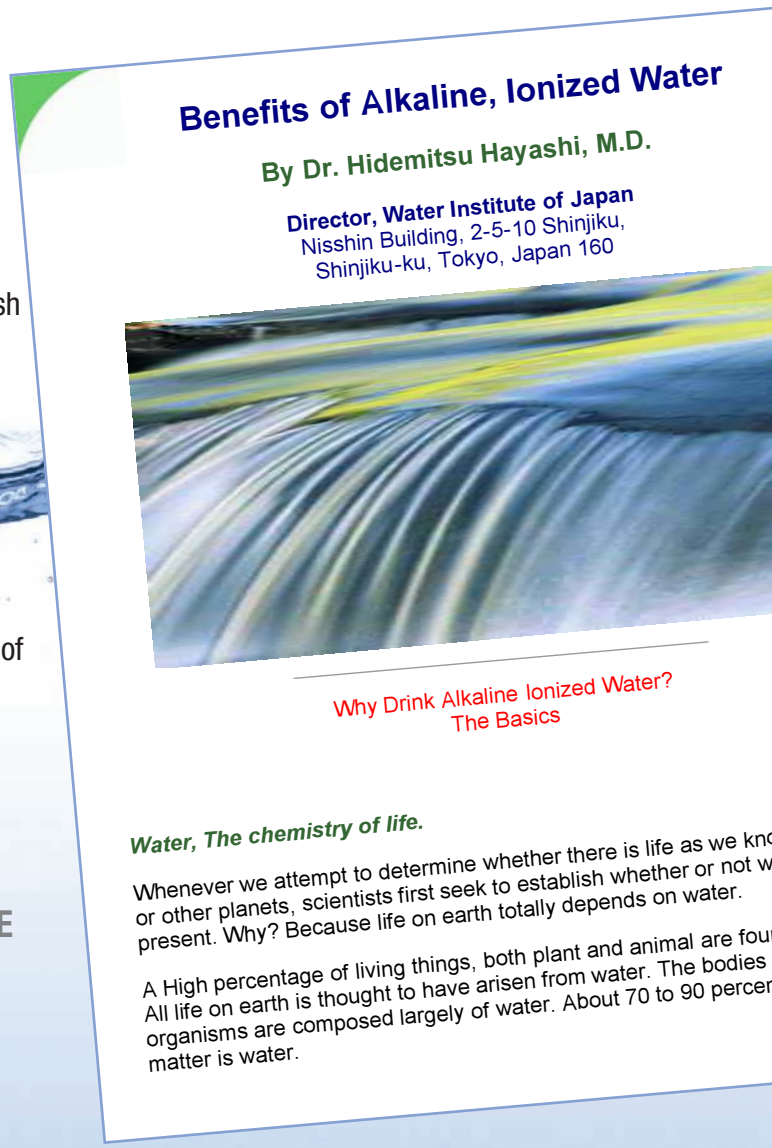
Water is a universal, superb solvent due to the marked polarity of the water molecule and its tendency to form hydrogen bonds with other molecules. One water molecule, expressed with the chemical symbol H2O, consists of two hydrogen atoms and one oxygen atom.

Standing alone, the hydrogen atom contains one positive proton at its core with one negative electron revolving around it in a three-dimensional shell. Oxygen, on the other hand, contains 8 protons in its nucleus with 8 electrons revolving around it. This is often shown in chemical notation as the letter O surrounded by eight dots representing 4 sets of paired electrons.



OXYGEN ATOM AND ITS ELECTRONS

The single hydrogen electron and the 8 electrons of oxygen are the key to the chemistry of life because this is where hydrogen and oxygen atoms combine to form a water molecule, or split to form ions. Hydrogen tends to ionize by losing its single electron and form single H+ ions, which are simply isolated protons since the hydrogen atom contains no neutrons. A hydrogen bond occurs when the electron of a single hydrogen atom is shared with another electronegative atom such as oxygen that lacks an electron.


Benefits of Alkaline, Ionized Water

By Dr. Hidemitsu Hayashi, M.D.

Director, Water Institute of Japan
Nisshin Building, 2-5-10 Shinjiku,
Shinjiku-ku, Tokyo, Japan 160

Why Drink Alkaline Ionized Water?
The Basics

Water, The chemistry of life.

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matter is water.

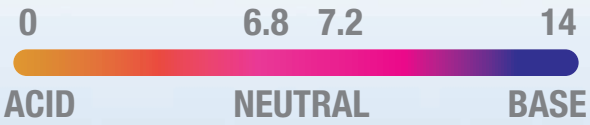
What is pH?

On the pH scale, which ranges from 0 on the acidic end to 14 on the alkaline end, a solution is neutral if its pH is 7. At pH 7, water contains equal concentrations of H+ and OH- ions. Substances with a pH less than 7 are acidic because they contain a higher concentration of H+ ions. Substances with a pH higher than 7 are alkaline because they contain a higher concentration of OH- than H+. The pH scale is a log scale so a change of one pH unit means a tenfold change in the concentration of hydrogen ions.

Water treated by electrolysis to increase its reduction potential is the best solution to the problem of providing a safe source of free electrons to block the oxidation of normal tissue by free oxygen radicals.

Importance of balancing pH

Living things are extremely sensitive to pH and function best (with certain exceptions, such as certain portions of the digestive tract) when solutions are nearly neutral.



Most interior living matter (excluding the cell nucleus) has a pH of about 6.8. Blood plasma and other fluids that surround the cells in the body have a pH of 7.2 to 7.3. Numerous special mechanisms aid in stabilizing these fluids so that cells will not be subject to appreciable fluctuations in pH. Substances which serve as mechanisms to stabilize pH are called buffers. Buffers have the capacity to bond ions and remove them from solution whenever their concentration begins to rise. Conversely, buffers can release ions whenever their concentration begins to fall. Buffers thus help to minimize the fluctuations in pH. This is an important function because many biochemical reactions normally occurring in living organisms either release or use up ions.

Water, the natural solution

There is no substitute for a healthy balanced diet, especially rich in antioxidant materials such as vitamin C, vitamin E, beta-carotene, and other foods that are good for us. However, these substances are not the best source of free electrons that can block the oxidation of healthy tissue by active oxygen.

We believe that reduced water, water with an excess of free electrons to donate to active oxygen, is the best solution because:

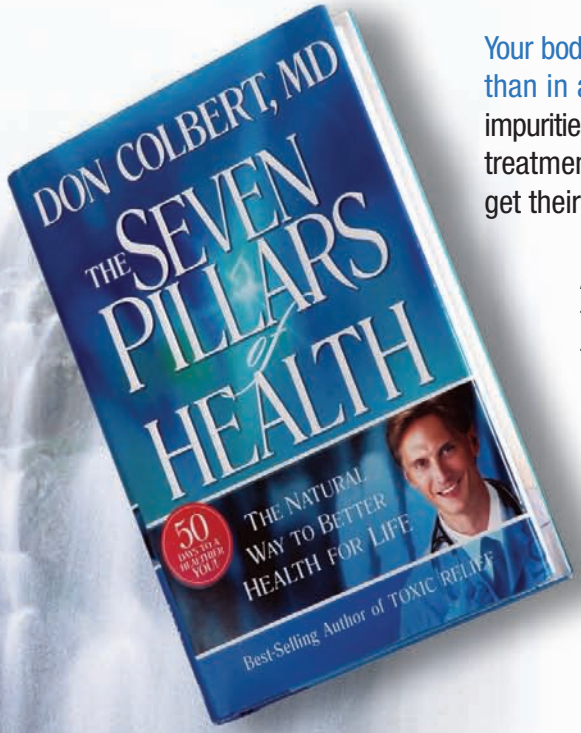
- The reduction potential of water can be dramatically increased over other antioxidants in food or vitamin supplements.
- The molecule weight of reduced water is low, making it fast acting and able to reach all tissues of the body in a very short time.

Redox potential, not pH, is the crucial factor

Traditionally we have judged the properties of water from the standpoint of pH,in other words whether water is acidic or alkaline. According to Dr. Yoshiaki Matsuo PhD., the inventor of the Ionized Water unit, "In my opinion, redox potential is more important than pH. The importance of pH is over emphasized. For example, the average pH of blood is 7.4 and acidosis or alkalosis are defined according to deviation within the range of 7.4 +- 0.005. But nothing has been discussed about ORP, or oxidation-reduction potential."

The pH of tap water is about pH 7, or neutral. When tap water is electrolyzed into Ionized Water, its reduced water has a pH of about 9 and the oxidized water a pH of about 4. Even if you make alkaline water of pH 9 by adding sodium hydroxide or make acidic water of pH 3 by adding hydrogen chloride, you will find very little change in the ORP values of the two waters. On the other hand, when you divide tap water with electrolysis you can see the ORP fluctuate by as much as +- 1,000 mV. By electrolysis we can obtain reduced water with negative potential that is good for the body.

Excerpts from
THE SEVEN PILLARS OF HEALTH
by Dr. Don Colbert, M.D.
Siloam, A Strang Company, Publisher



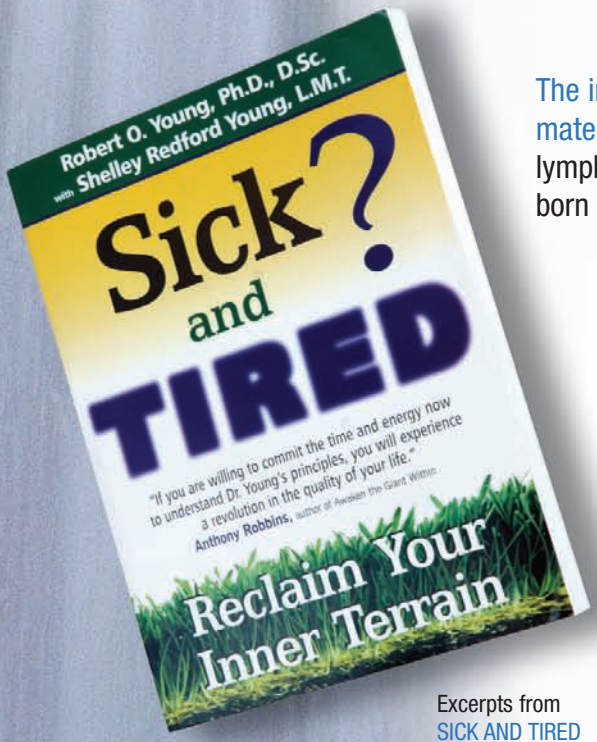
In an alkaline environment your tissues get rid of impurities more efficiently.

Your body thrives in an alkaline environment since it is able to detoxify more efficiently than in an acidic environment. In an alkaline environment your tissues get rid of impurities more efficiently. When cancer patients come into my office to begin nutritional treatment, their bodies are almost always very acidic and toxic. My first task is to get their tissues alkalinize with alkaline water and alkaline foods.

Alkalinity and acidity are measured in terms of pH. On the pH scale of 1 to 14, a pH of 7.0 is considered neutral. Anything under 7.0 is acidic; any thing over 7.0 is alkaline. Blood has a constant pH of 7.4– it's alkaline. But most Americans' tissues are very acidic, meaning their bodies are less efficient at removing toxins. Many health problems are associated with being too acidic.

Many of my patients have been pain free within a couple of months after adjusting their urine pH to 7.0 to 7.5 simply by consuming adequate amounts of alkaline water and alkaline foods.

Water helps maintain alkalinity in the blood, lymph, and intracellular and extracellular fluids by diluting excess acidity born out of metabolism and acidic lifestyles, diets and thinking.

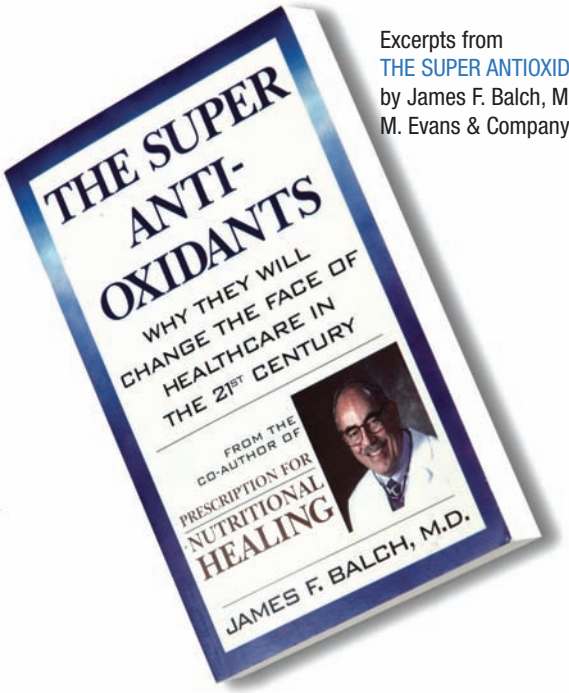


The importance of water is more than obvious since we are a gelatinous material in a body of water. Water helps maintain alkalinity in the blood, lymph, and intracellular and extracellular fluids by diluting excess acidity born out of metabolism and acidic lifestyles, diets and thinking.

The pH level of our internal fluids affects every cell in our bodies and has a profound effect on body chemistry.
Extended pH imbalances of any kind are not well tolerated by the body. Indeed, the entire metabolic process depends on a balanced pH. A chronically over-acidic body pH corrodes body tissue, slowly eating into to 60,000 miles of veins and arteries like acid eating into marble. If left unchecked, it will interrupt all cellular activities and functions, from the beating of the heart to the neural firing of your brain. Over-acidification interferes with life itself, leading to all sickness and disease.

Excerpts from
SICK AND TIRED
Robert O. Young, Ph.D., D.Sc. with Shelley Redford Young, L.M.T.
Woodland Publishing

As antibiotics in the last fifty years of the twentieth century helped "Cure" many infectious diseases, so antioxidant will effect a "Cure" of many supposedly incurable diseases in the twenty-first century...

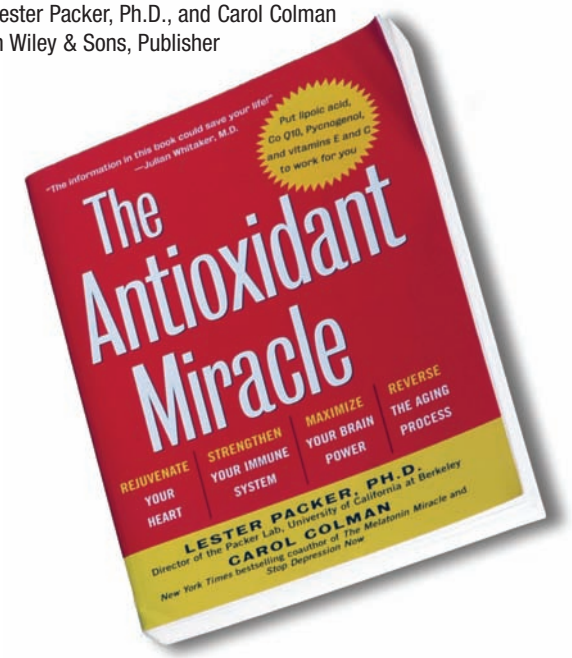


Excerpts from
THE SUPER ANTIOXIDANTS
by James F. Balch, M.D.
M. Evans & Company, Publisher

Free radicals and aging are strongly linked. More than eighty age-related diseases can be alleviated by antioxidants that neutralize oxidant particles. These diseases that we doctors still attribute to your age really have little to do with time, but are directly related to the accumulation of free radical damage in the cells of your body. Age is related to time only by the rate at which oxidative stress is taking its toll on your body. And more important to you, that rate of free radical damage can be changed. Antioxidants are available that will dramatically slow the aging of your body!

As antibiotics in the last fifty years of the twentieth century helped "Cure" many infectious diseases, so antioxidant will effect a "Cure" of many supposedly incurable diseases in the twenty-first century and slow the process of aging dramatically.

Excerpts from
THE ANTIOXIDANT MIRACLE
by Lester Packer, Ph.D., and Carol Colman
John Wiley & Sons, Publisher

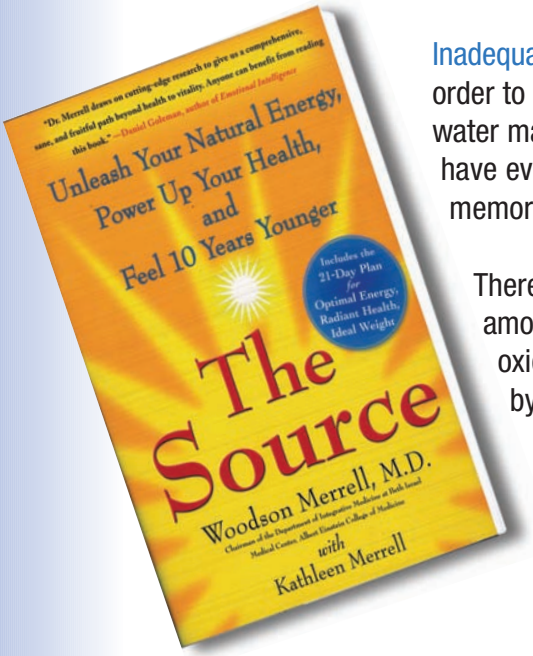


Simply by fortifying the body's antioxidant network, it is now possible to give the body the tools it needs to wage an effective fight against disease.

Our growing knowledge of the antioxidant network now enables us, for the first time, to practice real preventative medicine. We now understand the role that free radicals play in the onset and progression of nearly every known disease, and more important, how they can be controlled by antioxidants. Simply by fortifying the body's antioxidant network, it is now possible to give the body the tools it needs to wage an effective fight against disease.
The antioxidant network and its boosters offer new hope for preventing the epidemic of cancer and heart disease that devastates the lives of millions of Americans each year. Just as the discovery of penicillin changed the practice of medicine...
the antioxidant network has the potential to create a new paradigm for health.

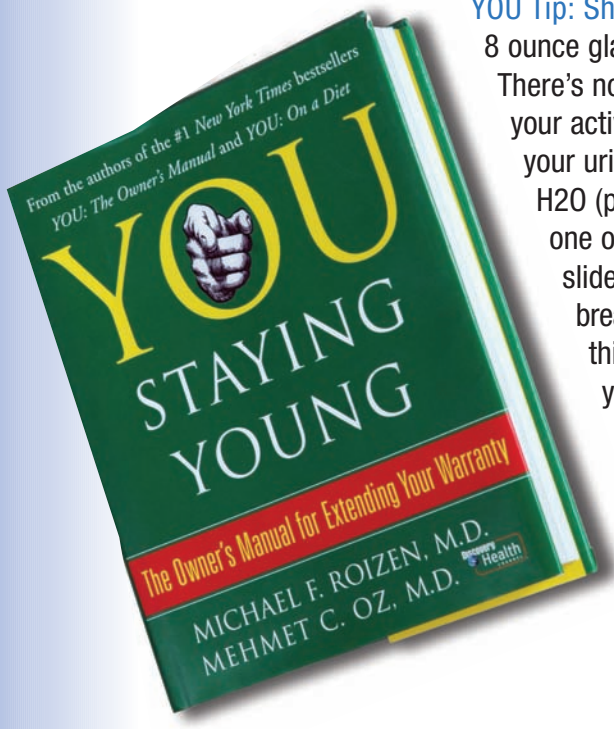
Exerpts from
THE SOURCE
by Woodson Merrell, M.D.
Simon & Schuster, Publisher

Lack of water- dehydration- makes it harder for nutrients and toxins to move through the ground substance that is in between cells



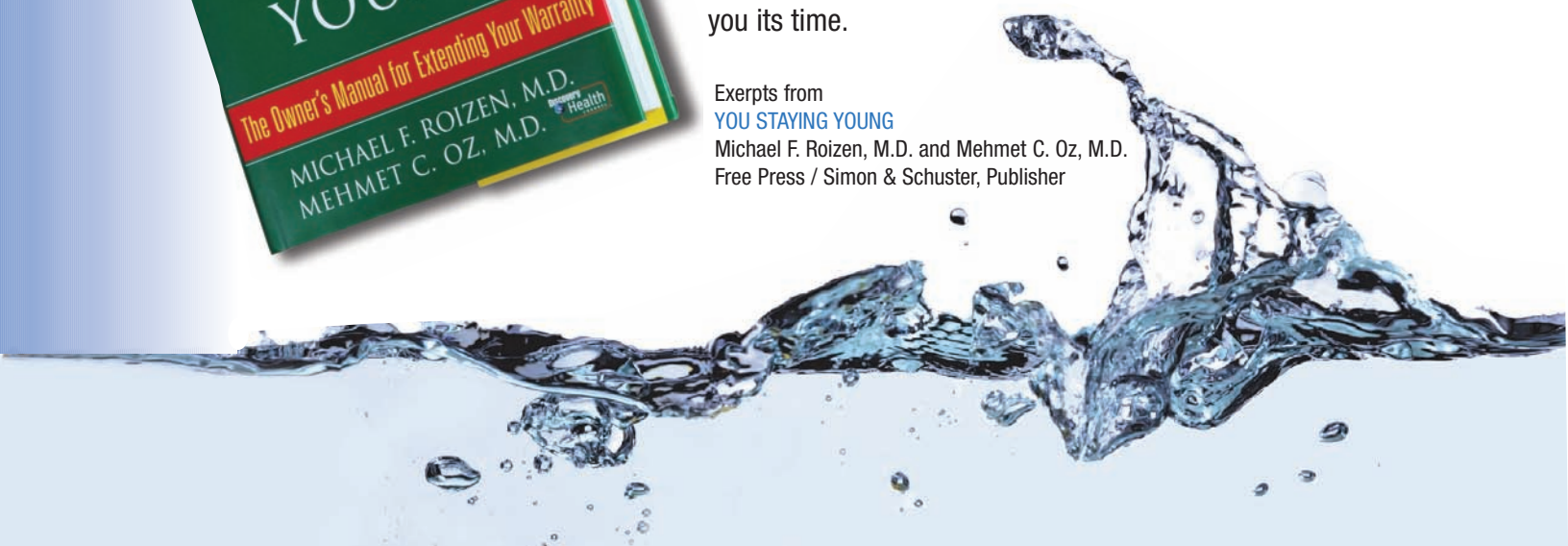
Inadequate hydration causes the body to extract water from non-vital tissues in order to shunt water to key organs (heart, brain and kidneys). Such stopgap water management can produce a significant drop in overall energy. Scientists have even shown that insufficient hydration can have a negative effect on memory.

There are three processes within the cell that unnecessarily consume large amounts of energy, produce premature aging and cause widespread damage: oxidation, inflammation and glycation. All of these processes are affected by what you eat.



YOU Tip: Shower Your Insides. You hear the advice about drinking eight 8 ounce glasses of water almost as much as you hear "The tribe has spoken". There's no magic to this number, the the right amount varies according to your activity level and size, so if you want, just drink enough water so that your urine is clear. Or 8x8 ounces might be easier. Of all the reasons H2O (preferably filtered) is oh-so-good, the work it does for your guts is one of the best. For starters, it helps lubricate everything so food can slide through more easily. Plus, it helps quell hunger, fights bad breath, and helps you avoid dry mouth. Your mechanism for detecting thirst doesn't work as well when you're older as it does when you're young, which makes it that much more important to remind yourself to drink regularly throughout the day–before your body even tells you its time.

Exerpts from
YOU STAYING YOUNG
Michael F. Roizen, M.D. and Mehmet C. Oz, M.D.
Free Press / Simon & Schuster, Publisher



Excerpts from
NUTRITION FOR EVERYONE
www.cdc.gov

Nutrition for Everyone

Water: Meeting Your Daily Fluid Needs

Ever notice how lifeless a house plant looks when you forget to water it? Just a little water and it seems to perk back up. Water is just as essential for our bodies because it is in every cell, tissue, and organ in your body. That's why getting enough water every day is important for your health.

Healthy people meet their fluid needs by drinking when thirsty and drinking fluids with meals. But, if you're outside in hot weather for most of the day or doing vigorous physical activity, you'll need to make an effort to drink more fluids.

Where do I get the water I need?

Most of your water needs are met through the water and beverages you drink.

You can get some fluid through the foods you eat. For example, broth soups and other foods that are 85% to 95% water such as celery, tomatoes, oranges, and melons.

What does water do in my body?

Water helps your body with the following:

- Keeps its temperature normal.
- Lubricates and cushions your joints.
- Protects your spinal cord and other sensitive tissues.
- Gets rid of wastes through urination, perspiration, and bowel movements.

Why do I need to drink enough water each day?

You need water to replace what your body loses through normal everyday functions. Of course, you lose water when you go to the bathroom or sweat, but you even lose small amounts of water when you exhale. You need to replace this lost water to prevent dehydration.

Your body also needs more water when you are...

- In hot climates.
- More physically active.
- Running a fever.
- Having diarrhea or vomiting.

To help you stay hydrated during prolonged physical activity or when it is hot outside, the Dietary Guidelines for Americans 2005 recommend these two steps:

1. Drink fluid while doing the activity.
2. Drink several glasses of water or other fluid after the physical activity is completed.

Also, when you are participating in vigorous physical activity, it's important to drink before you even feel thirsty. Thirst is a signal that your body is on the way to dehydration.

Some people may have fluid restrictions because of a health problem, such as kidney disease. If your healthcare provider has told you to restrict your fluid intake, be sure to follow that advice.

Tips for Increasing Your Fluid Intake by Drinking More Water

Under normal conditions, most people can drink enough fluids to meet their water needs. If you are outside in hot weather for most of the day or doing vigorous activity, you may need to increase your fluid intake.

If you think you're not getting enough water each day, the following tips may help:

- Carry a water bottle for easy access when you are at work or running errands.
- Freeze some freezer-safe water bottles. Take one with you for ice-cold water all day long.
- Choose water instead of sugar-sweetened beverages. This tip can also help with weight management. Substituting water for one 20-ounce sugar-sweetened soda will save you about 240 calories.
- Choose water instead of other beverages when eating out. Generally, you will save money and reduce calories.
- Give your water a little pizzazz by adding a wedge of lime or lemon. This may improve the taste, and you just might drink more water than you usually do.

Did you know...?

USA TODAY

Bottled water no purer than tap water, study finds

October 15, 2008

By Jeff Donn, Associated Press
Tests on leading brands of bottled water turned up a variety of contaminants often found in tap water, according to a study released Wednesday by an environmental advocacy group.

The findings challenge the popular impression — and marketing pitch — that bottled water is purer than tap water, the researchers say.

However, all the brands met federal health standards for drinking water. Two violated a California state standard, the study said.

An industry group branded the findings "Alarmist." Joe Doss, president of the International Bottled Water Association, said the study is based on the faulty premise that a contaminant is a health concern "Even if it does not exceed the established regulatory limit or no standard has been set."

The study's lab tests on 10 brands of bottled water detected 38 chemicals including bacteria, caffeine, the pain reliever acetaminophen, fertilizer, solvents, plastic-making chemicals and the radioactive element strontium. Though some probably came from tap water that some companies use for their bottled water, other contaminants probably leached from plastic bottles, the researchers said.
FIND MORE STORIES IN: California | Wal-Mart | mid-Atlantic | Choice | International Bottled Water Association | Jane Houlihan | Washington-based Environmental Working Group

"In some cases, it appears bottled water is no less polluted than tap water and, at 1,900 times the cost, consumers should expect better," said Jane Houlihan, an environmental engineer who co-authored the study.

INTERNATIONAL Herald Tribune
THE GLOBAL EDITION OF THE NEW YORK TIMES

Rising sales of bottled water trigger strong reaction from U.S. conservationists

By Erica Gies, March 19, 2008

Bottled water sales in the United States reached 8.82 billion gallons in 2007, worth $11.7 billion, making the U.S. market for bottled water the largest in the world, according to Beverage Marketing, a provider of beverage industry data. Worldwide, water bottlers sold 47 billion gallons, or 178 billion liters, in 2006, up from 43 billion gallons in 2005.
Campaigners against bottled water cite concerns that include energy consumption and greenhouse gas emissions, waste, the environmental effect of water extraction, the perils of privatization and social issues.
"We're at the beginning of an awakening of the costs of our bottled water use," said Peter Gleick, president of the Pacific Institute, a sustainable development research organization in Oakland, California.
In the United States, city, state, and county governments have legislated to limit bottled water use or promoting tap water. Restaurants, schools, and religious groups have adopted similar policies, according to the Earth Policy Institute, in Washington.

The energy required to make water bottles in the United States is equivalent to 17 million barrels of oil annually, Gleick said. Globally, the bottling industry uses the equivalent of nearly 100 million barrels of oil each year, excluding transportation. Gleick said the Fiji brand of bottled water sold in Los Angeles traveled about 2,000 miles, or more than 3,000 kilometers, from the source to the store, effectively doubling its use of energy.
“Making plastic water bottles causes greenhouse gas emissions and uses water - about three liters of water to produce one liter of bottled water”, Gleick said. In the United States, less than 20 percent of water bottles are recycled, according to the Container Recycling Institute.

Jane Lazgin, spokeswoman for Nestlé Waters North America, said Nestlé was an industry leader in reducing the plastic in bottles. In April 2007, it introduced a bottle that used 30 % less plastic than regular bottles. The company planned to move all of its products to the new bottle, she said. Bottled water is often 1,000 times more expensive than tap water, and the industry subtly undercuts public faith in municipal supplies, Kellett said.

"Coke and Nestlé and Pepsi have spent tens of millions of dollars a year manufacturing a demand for water as a commodity to be bought and sold for profit”, she added. In 2006, the industry spent $162.8 million on advertising bottled water in the United States, accord ing to ZenithOptimedia. Lazgin defended the industry, saying its growth represented a shift from soda to water, not from the tap to bottled water. "The reality is 70 percent of what we drink in America comes in a can or a bottle," she said.

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