

## **The Importance of Water and Your Health**

### **"I'm dying of thirst!"**

Well, you just might. It sounds so simple. H<sub>2</sub>O - two parts hydrogen and one part oxygen. This substance also known as water, is one of the most essential elements to health and is so important that your body actually has a specific drought management system in place to prevent dehydration and ensure your survival. Water might be everywhere, but one must never take it for granted.

Water makes up more than two thirds of human body weight, and without water, we would die in a few days. The human brain is made up of 95% water, blood is 82% and lungs 90%. A mere 2% drop in our body's water supply can trigger signs of dehydration: fuzzy short-term memory, trouble with basic math, and difficulty focusing on smaller print, such as a computer screen. (Are you having trouble reading this? Drink up!) Mild dehydration is also one of the most common causes of daytime fatigue. An estimated seventy-five percent of Americans have mild, chronic dehydration. Pretty scary statistic for a developed country where water is readily available through the tap or bottled water.

Water is important to the mechanics of the human body. The body cannot work without it, just as a car cannot run without gas and oil. In fact, all the cell and organ functions that make up our entire anatomy and physiology depend on water for their functioning.

- Water serves as a lubricant
- Water forms the base for saliva
- Water forms the fluids that surround the joints.
- Water regulates the body temperature, as the cooling & heating is distributed through perspiration.
- Water helps to alleviate constipation by moving food through the intestinal tract and thereby eliminating waste - the best detox agent.
- Water helps to regulate metabolism

In addition to the daily maintenance of our bodies, water also plays a key role in the prevention of disease. Drinking eight glasses of water daily can decrease the risk of colon cancer by 45%, bladder cancer by 50% and it can potentially even reduce the risk of breast cancer. And those are just a few examples! Water can aid in the prevention and cure of many types of diseases, ailments and disorders that affect the many systems of our bodies.

Since water is such an important component to our physiology, it would make sense that the quality of the

water should be just as important as the quantity. Drinking water should always be clean and free of contaminants to ensure proper health and wellness.

### **Are you getting enough?**

We've all heard that **drinking water** will help keep us healthy. But how much is really enough?

The experts have always said, on average, that eight eight-ounce glasses per day will suffice. However, that might not be enough. While eight is great, amounts really need to be tailored to meet the needs of every individual. Most adults will lose between two to three quarts of water per day by way of normal body functions, but those who live in or work in warmer environments tend to lose more. Athletes for example, need to drink more water to balance their bodily fluids. For those people, drinking more water will make up for the bigger loss of water they had through perspiration, as well as in the regulation of body temperature.

Our bodies are made up of 55-70% water, but it does not replenish itself, so drinking water helps maintain that healthy balance. But even still, many will walk around dehydrated, most of the time unknowingly. That is because thirst is a poor indicator of dehydration. By the time someone gets thirsty, it is too late! Or, if one is

thirsty, they may go for a beverage that does not actually replenish the body. A cold soda may feel nice going down, but beverages with caffeine are not meant to hydrate.

Water is the best remedy for dehydration. If mild dehydration sets in, it can decrease one's energy level and mental functioning and increase stress on the body.

Severe dehydration can have far more damaging effects.

There are three important rules when it comes to drinking water:

1. Drink twice as much as it takes to quench your thirst.
2. Drink frequently throughout the day to prevent dehydration.
3. Drink at least eight glasses daily, or one cup for every 20 pounds of body weight. For example, a 150-pound person who does not exercise or work in hot climates needs 7.5 cups.

While some fruit juices and green tea may account for some fluid intake, you can count out beverages such as coffee or alcohol. They have a mild diuretic effect, which promotes urination and therefore water loss, which ultimately defeats the purpose.

**QUICK TIP:** A trick to ensure people are drinking their daily allowance is to fill a pitcher or jug with the allotment of water and keep it on your desk at work, or handy at

home. The goal is then clearly marked. As you drink down the water, you know that you are on the right path to drinking enough water.

And finally, those frequent bathroom trips are not a bad thing. The best indicator that one is drinking enough water is when urine comes out pale yellow to clear. A dark yellow color, however, is a sign your body is dehydrated and is concentrating the urine in an effort to conserve water.

**Bottled water is clean and healthy** – or so their producers would have you believe. After all, marketers tirelessly bombard us with picturesque images of flowing alpine springs, pristine, ice-capped mountaintops and thin, attractive models downing a pint right before biking to the pilates studio.

Make no mistake about it. Bottled water is big business, with worldwide sales projected to be between \$50 and \$100 billion a year. But is bottled H<sub>2</sub>O really any purer than ordinary tap water filtered in your home? Well, considering that many top brands are actually just filtered tap water, it's safe to say that bottled water is often times more pure hype than pure water.

The truth is, bottle waters are usually overpriced, sometimes unsanitary, and always damaging to the environment.

**Plastic Chemicals:** Most small 16-20 oz bottled waters are made from polyethylene terephthalate (PET), which can leach harmful plastic chemicals and hormone disruptors into the water. Larger bottled waters don't fare any better. In 2000, Consumer Reports found that 8 out of 10 large 5-gallon jugs they tested left the dangerous endocrine disruptor bisphenol A (BPA) in the water. BPA has been linked to breast cancer, prostate cancer and diabetes as well as reproductive development disorders.

Worse yet, plastic leaching increases with age and heat so storing bottled water in your garage is a big No-No!

**Harmful Bacteria:** How would you like to drink a nice colony of bacteria after your morning workout? When the NRDC (National Resources Defense Council) tested more than 1,000 water bottles, including 103 bottled water brands, the organization found that 1/3 of the brands contained arsenic, bacteria and synthetic organics exceeding allowable limits.

And the NRDC isn't alone. Canada's Crest Laboratories, a pharmaceutical testing company in Montreal, found that

70% of the dozen bottled water brands it tested had high levels of heterotrophic bacteria, which can be pathogenic and cause infectious diseases like E. coli. The United States Pharmacopoeia says the heterotrophic bacteria in drinking water should not exceed 500 colony-forming units (CFUs) per milliliter, yet the highest recorded level from the sample was 80,000 CFUs per milliliter.

**Poor Quality:** The Environmental Protection Agency (EPA) has strict guidelines for tap water but does not oversee bottled water. Instead, bottled water is regulated by the Food and Drug Administration (FDA), which has weaker regulations and applies the EPA's rules only selectively to bottled water. Also, the FDA only inspects bottled water if it crosses state lines, and approximately 70% of bottled water never does, making it exempt from FDA oversight.

The truth is, bottled water taste and quality can range from very good to very bad depending on the brand, and that is a serious problem for the industry. Unfortunately, like a box of chocolate, you never know what you will get.

**Too Expensive:** Bottled water can cost 500 to 3,000 times more than tap water. So, if you buy a 20 ounce name brand for \$1 then that works out to 5 cents an ounce, whereas municipal water costs about 1 cent per gallon. Since most bottled water is simply just filtered tap water,

it makes much more sense to just purchase a water filter and purify your water at home. Adding a quality water filtration system will only increase that costs up to about 2-3 cents per gallon and it will give you clean water that tastes just as good but at a much lower cost.

Do you really want to pay that much for something that literally falls from the sky?

**Environmentally Unfriendly:** Our addiction to drinking bottled water contributes greatly to global pollution. Despite well-intentioned recycling campaigns, 85% of PET bottles are either thrown away, tumbling around as litter, or ebbing in the ocean, posing a threat to marine life that sometimes mistakes the garbage for food. In 2006 the production of bottled water used the equivalent of more than 17 million barrels of oil, releasing more than 2.5 million tons of carbon dioxide.

What can you do? Switch your plastic water bottle for a BPA-free stainless steel or aluminum water bottle. And fill it up with filtered water, which has a more consistent, fresh and pleasant taste when compared with stale bottled water with a hint of plastic.

# **Alternatives to Bottled Water**

## **Tap Water**

Because municipal water systems fall under the jurisdiction of the EPA, tap water is regularly tested for bacteria and toxins. However toxic chemicals like chlorine, chloramines and fluoride are routinely added to tap water and water contamination can occur at a thousand different entry points during the trip from the water plant to your home. This is why every family should seriously consider installing a water purification system in their home for drinking water.

## **Home Water Purification**

Reverse osmosis systems are a great water purification choice because they can produce an unlimited amount of ultra-pure drinking water from the comfort of your own home. Reverse osmosis removes up to 99% of organics, chemicals, heavy metals, bacteria and radioactive pollution to produce fresh delicious drinking water at a fraction of the price of bottled water. So bottle your water at home with a reverse osmosis filter to protect the money in your pocket, the health of your family, and the beauty of our environment.

## **pH and Water**

So, what does pH mean for water? Basically, the pH value is a good indicator of whether water is hard or soft. The pH of pure water is 7. In general, water with a pH lower than 7 is considered acidic, and with a pH greater than 7 is considered basic. The normal range for pH in surface water systems is 6.5 to 8.5, and the pH range for groundwater systems is between 6 to 8.5. Alkalinity is a measure of the capacity of the water to resist a change in pH that would tend to make the water more acidic. The measurement of alkalinity and pH is needed to determine the corrosiveness of the water.

In general, water with a  $\text{pH} < 6.5$  could be acidic, soft, and corrosive. Acidic water could contain metal ions such as iron, manganese, copper, lead, and zinc. In other words, acidic water contains elevated levels of toxic metals. Acidic water can cause premature damage to metal piping, and have associated aesthetic problems such as a metallic or sour taste. It can also stain laundry and cause "blue-green" color staining on sinks and drains. More importantly, there are health risks associated with these toxins. The primary way to treat the problem of low pH water is with the use of a neutralizer. The neutralizer feeds a solution into the water to prevent the water from reacting with the household plumbing or from contributing

to electrolytic corrosion. A typical neutralizing chemical is soda ash. Also known as sodium carbonate, soda ash works to increase the sodium content which increases pH. Water with a pH > 8.5 could indicate that the water is hard. Hard water does not pose a health risk, but can also cause aesthetic problems. These problems include an alkali taste to the water (making that morning coffee taste bitter!), formation of scale deposits on dishes, utensils, and laundry basins, difficulty in getting soaps and detergents to lather, and the formation of insoluble precipitates on clothing.

According to a Wilkes University study, the association of pH with atmospheric gases and temperature is the primary reason why water samples should be tested on a regular basis. The study says that the pH value of the water is not a measure of the strength of the acidic or basic solution, and alone cannot provide a full picture of the characteristics or limitations with the water supply.

While the ideal pH level of drinking water should be between 6-8.5, the human body maintains pH equilibrium on a constant basis and will not be affected by water consumption. For example, our stomachs have a naturally low pH level of 2 which is a beneficial acidity that helps us with food digestion.