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**D**espite the claims of advertisers that drinking soda will increase your popularity, bring joy to your life and enable you to achieve physical superiority, it's just not true. Soda is bad news – and don't get me started on those beer commercials! The truth is, the single best sports drink for an athlete is simply water. Let me tell you why.

Our bodies are composed mostly of water – even muscle is 75 percent water – and all the body's functions depend on adequate fluid intake. This is because our body's reactions take place in an aquatic environment. Without sufficient water, our proteins and enzymes simply cannot function to their highest potential, and in turn the body cannot optimally perform its necessary tasks.

Do you ever get groggy in the middle of the day? Most mid-afternoon energy slumps can be attributed to dehydration, and reaching for a glass of water or two in the afternoon is a much healthier alternative to the stimulates found in coffee or soda.

Do you commonly suffer from colds and flu? When you are dehydrated, the body's immune system is compromised and less able to ward off colds and flu.



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Do you often get headaches? Headaches can be caused by the dilation of the blood vessels in the brain when it does not have enough water to maintain its function.

The immediate symptoms of dehydration include dry skin, constipation and fatigue. There are also many disease conditions that result from long-term dehydration, since all the body's systems are dependent on adequate water. The consequences of dehydration are endless. But what is considered *adequate* water intake?

# The Water Formula

**The general formula for adequate water intake is as follows:**

**Bodyweight in pounds divided by two equals number of ounces per day.**

**The formula for optimal function is as follows:**

**Bodyweight in pounds divided by 2 + 20% = number of ounces per day**

**Example: 140 lbs ÷ 2 = 70, 20% x 70 = 14, 70 + 14 = 84 oz per day**

**You can then divide by 8 to determine the number of 8-ounce glasses in a day if this is a format you are used to.**



## How Much Is Enough?

We have all heard about the benefits of drinking eight glasses of water a day, but actually that is an antiquated estimate and must be updated to reflect our modern environment.

The pollution we are exposed to through food and air has increased significantly, as has the amount of chemicals found in our food either through environmental contamination or through processing. Our “fast-food nation” promotes the consumption of beverages other than water, such as sodas, coffee, tea, diet drinks and alcohol – all of which I like to call *anti-water*. Even fruit juice, with its high sugar content, and processed vegetable juice, with its high sodium content, can increase the body’s need for water – these fluids cannot be included in our daily requirement of water intake. Our bodies need extra water to overcome the ill effects of polluting elements.

There are many other factors that determine our water needs, such as genetics, body size and bodyweight. Athletes, with their increased activity levels, obviously have an increased requirement, as will anyone who lives in a dry climate – imagine how difficult it is for our soldiers in Iraq, wearing heavy military gear and working in that hot environment, to stay hydrated.



There are many chemicals in the body that determine water usage, and histamine is one of the key regulators. These chemicals direct the water we drink to the areas in the body with the greatest need. When dehydration is chronic, histamine and other water-regulating chemicals such as prostaglandins and kinins are constantly elevated, which leads to symptoms of inflammation such as allergies, asthma, indigestion and chronic pain.

Histamine and other water-regulating chemicals also mediate allergic reactions. The digestive process requires ample water for adequate production of all the necessary secretions of the various organs involved. Cartilage has lots of water in its matrix, and the spaces between joints have fluid that must be maintained for lubrication and shock absorption. The intervertebral discs also require sufficient water to maintain their structure, and you could experience a decrease in height at the end of the day when dehydrated.

Urine and sweat are the most common means by which we lose body fluid, but respiration is also responsible for a significant amount of “insensible” loss, especially in dry climates; so monitor your fluid intake based on your activity level and where you live. As we age, our water-regulating systems become less efficient, so it becomes even more important to ensure adequate water and electrolyte balance.

# Drink to Lose?

Weight loss is one of the most attractive side benefits of drinking sufficient water. However, the body's initial response to increasing water consumption may be water retention, since the body will store nutrients that it is accustomed to rationing. Similarly, for those who skip meals regularly, the body is more apt to store calories so as to ration them for the starvation period it is used to experiencing.

To achieve the weight-loss benefits of adequate water intake, you will need to work through the initial period of water retention until all the body's systems have acclimated to the new, healthy level. Once the body has achieved proper hydration, the systems will be so efficient that you will often notice healthy weight loss without putting any extra effort into it. If the fat cells are well hydrated, they are more apt to be used by the body for fuel.

It's been said that one of the differences between dogs and people is that dogs cannot determine when they've had enough to eat, and people cannot determine when they've had enough to drink. Whether you take this seriously or as a joke, there's actually some truth here. Many people confuse thirst for hunger, so it's a good habit to respond to that first "hunger" signal with a glass of water and see if you are still hungry. Water can also act as an appetite suppressant by distending the abdomen, which sends a message of fullness to the brain.

It's a no-brainer: drink water to win *and* lose.

The quality of the water consumed is also an important issue. Be sure that the water you consume is clean and filtered – and when possible avoid water in plastic bottles. The off-gassing of discarded plastic bottles can leach chemicals into the water that can negatively affect your health and, of course, the discarded bottles harm the environment. Also, the ideal temperature of water in most situations is room temperature; however, during athletic performance it is often helpful to have cooler (but not ice-cold) water to help create a gradient for rapid absorption.

The accompanying table shows a formula for determining how much water you need. If the body is not used to handling this much water, it will need some time to adjust to the increased volume. If you drink significantly less than your optimal value, it is best to increase your consumption over a period of 2-4 weeks. There are also medical conditions that could be aggravated by increasing your water intake, so it is always best to check with your healthcare provider before changing your routine. The kidneys are responsible for filtering the increased fluids, so they need to be able to handle the new volume.

Thirst is considered a warning of dangerously low levels of water and is not the first indicator of a normal need for rehydration. Also, if your urine is not clear and odorless, this is a symptom of dehydration.

Don't wait for a dry mouth to tell you when to drink; top off regularly throughout the day. You can't live without water, and you can't perform your best if you are dehydrated. So drink up! And, whenever you can, fast-forward through those soda and beer commercials! 

