

Hydration

The body is composed of approximately 60% water, and an adequate amount of body water is essential for proper body function. The body keeps cool by sweating, though this results in the loss of body fluids and electrolytes. The amount of fluid lost depends not only on the environmental temperature but on the humidity as well. Although there are some electrolytes lost in sweat, particularly sodium and chloride, there is a much greater proportion of water lost. Therefore replacing the water is far more important than the replacement of electrolytes.

The amount of water lost through sweat increases with exercise intensity. As water is lost, core temperature begins to increase. Weather plays an important role as well. More humid environments prevent the evaporation of water from the skin and cause an increase in core temperature. As a result, metabolic and cardiovascular functioning are affected. Research has indicated that with as little water loss as 1 to 4% of body weight, physical performance is reduced. Many activities (marathons, football, soccer) can result in a 6 to 10% water loss! By the time you are thirsty, you probably have already lost more than 2% of your body weight.

It makes sense then to assure that hydration is occurring prior to and even during activity. Generally, the more intense the activity and the more humid the environment, the more water will be needed. However, great amounts of fluid taken prior to an activity may cause stomach upset. Experts suggest fluid intake in small amounts at frequent intervals before, during and after activity to ensure adequate hydration.

What kinds of symptoms result from drinking too little water? Most commonly: constipation, dry and itchy skin, acne, nose bleeds, repeated urinary tract infections, dry and unproductive coughs, constant sneezing, sinus pressure and headaches.

You might ask how a lack of water intake can cause this wide array of symptoms. Water is required by every cell in the body as nourishment and to remove wastes. When water becomes scarce, the body tries to limit the amount it loses through breathing, mucous production, urination, perspiration and bowel movements.

Several cups of water are lost daily through breathing because the lungs require humid air to do their work. In the winter when drier air prevails outside, even more water is lost. It is estimated that on an average day in the fall, 3-4 cups of water are lost through breathing. On a cold, dry winter day as much as 2-3 **more** cups of water may be lost in this way. The body has to moisturize the air before it reaches the lungs and does so through the mucous membranes lining the nasal passages and the bronchi. As available fluid decreases, the mucous lining becomes drier. This in turn irritates the lungs, causing them to become more reactive to dust, mold particles and other irritants, and less resistant to viruses and bacteria. The result: dry cough and bronchitis.

The mucous membranes of our lungs and gut are an important component of our resistance to disease. They provide an effective barrier to bacteria, viruses and pollutants when intact. But a number of substances (such as aspirin) are known to harm this barrier. What is less well known is that a lack of water in the body makes the all-important mucous less viscous and can cause constipation, irritable bowel syndrome and a slowed movement of the bowels contents. The mucous lining in the sinus passages is similarly vital as a defense against disease. When it becomes drier, sinusitis, nose bleeds and allergic symptoms worsen.

Obviously, we all lose some water through urination and urination is required for the removal of various toxins from the body. When fluid volume is diminished, the ability of the body to remove toxins through urination is also diminished. It is a common misunderstanding that the more water we drink, the harder it is on the kidneys. In fact, except for people with some uncommon kidney problems, the opposite is true. Water-soluble toxins cannot be easily removed through the bowels, especially when a lack of water also causes constipation. These toxins then must be eliminated in other ways such as through the skin. The increase in body toxin levels can cause headaches and fatigue. The attempt by the body to remove excess levels of unwanted chemicals through the skin can cause acne and will aggravate eczema.

The easy solution to all these problems is to drink more water. Coffee, tea and soda all contain caffeine that is a known diuretic and will actually accentuate the symptoms of fluid loss. Fruit juices are more concentrated in sugar than your body's fluids and so the body will attempt to dilute them in the gut thereby causing a loss of water from other areas of the body. **People who exercise vigorously should drink one glass of water for each 30 minutes of exercise.** Drink one extra glass of water for each cup of coffee or black tea (including ice tea) you have.

There has been much debate and a great deal of confusion regarding what to drink before, during and after fitness or sport activities. As a general rule, **prior to activity** it is most beneficial to consume water or diluted unsweetened juices in small amounts, frequently. It is important to keep blood glucose levels low and stable. Drinks that contain large amounts of sugar and sweeteners will increase blood glucose levels and may create gastrointestinal discomfort along with feelings of fatigue.

After intense activity lasting more than 60 minutes, drinks with moderate to high sugar content are suitable to replace glycogen, nutrients and fluid. Avoid drinks that are high in caffeine because they tend to have a diuretic effect. It is also important to continue to drink fluids long after the activity has ceased to allow for adequate replenishing of fluid.

Clear and frequent urination is a good indication of hydration. Because our mechanism for detecting thirst kicks in long after water is needed, it is important to provide the body with water prior to activity, throughout and even after.

HYDRATION FACTS

75% of Americans are chronically dehydrated. It is probable that similar percentages apply to 90% of the world population.

In 37% of Americans, the thirst mechanism is so weak that it is often mistaken for hunger.

Even mild dehydration will slow down one's metabolism as much as 3%.

One glass of water shuts down midnight hunger pangs for almost 100% of the dieters studied in a University of Washington study.

Lack of water is the #1 trigger of daytime fatigue.

Research indicates that 8-10 glasses of water a day could significantly ease back and joint pain for up to 80% of sufferers.

A mere 2% drop in body water can trigger fuzzy short-term memory, trouble with basic math, and difficulty focusing on the computer screen or on a printed page.