

Editorial

Importance of Drinking Water for Human Body

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Editor

Drinking water contains several electrolytes (substances in solution that conduct an electric current) including calcium, chloride, fluoride, magnesium, potassium and sodium. Water is necessary for all digestion and absorption functions, and lubricates mucous membranes in the gastrointestinal and respiratory tracts. Even though it contains no calorie content, water is the medium for most chemical reactions in the body, especially those metabolic reactions involved in energy production. The body uses water as a coolant, helping to regulate body temperature during exercise, fever and in hot environments. Water also serves as a cushioning component between joints, in the spinal cord and in the brain.

Water is colorless, tasteless and odorless. Because of its numerous and diverse functions in the body, it is often regarded as the most important nutrient. Most people can survive no more than 7 days without water (Williams, 2005)¹. Although there is rigorous proof of its need for optimal health, scientists still have a difficult time objectively advising people how much they need to drink daily to maintain this favorable health.

Water is stored in either intracellular fluid (ICF) or extracellular fluid (ECF) compartments. The ICF accounts for about 65% of the body water while the ECF (35%) is the blood plasma and lymph (a transparent, slightly yellow fluid that carries lymphocytes), which serve as the medium of transport for wastes and nutrients throughout the body. Minerals such as chloride, potassium and sodium participate in the maintenance of the ICF and ECF levels; a process governed by hormonal messages from the brain and the kidneys. If any molecule becomes too concentrated in one fluid compartment, it will pull water from the other compartment to dilute itself.

Eight 8-ounce glasses is equal to 1,893 milliliters, or 2 quarts, or one-half a gallon, or approximately 1.9 liters. Most fitness professionals, nutritionists and personal trainers for years have encouraged clients to drink eight 8-ounce glasses of water a day. Surprisingly, no scientific evidence can be found that supports this "8 X 8" recommendation. In a superbly researched and written review, Heinz Valtin (2002) traces the origin of this recommendation to two possible sources².

Portis and Sundaram (2001)³ summarize several factors that may contribute to kidney stone formation including age (it is more common in adults versus elderly, but more common in elderly versus children), gender (it is two to three times more common in males than females), race (it is more common in Whites versus

those of Asian ethnicity, who are more often affected than Blacks), climate (it occurs more frequently in hot, arid climates), and medications (drugs that treat swelling such as for congestive heart disease and cirrhosis of the liver). Portis and Sundaram continue that the most important factor influencing kidney stone formation is decreased fluid intake.³

The research on hydration and mental performance is in its formative years. However, the science is clear that decrements in visuomotor (visual perception by the brain), psychomotor and cognitive performance can occur when 2% or more of the body weight is lost due to water restriction, heat or physical exertion (Grandjean and Grandjean, 2007).⁴

The hydration goal during exercise is to prevent excessive water loss and disparities in electrolyte balance in the working muscle cells. Hydration recommendations during exercise can be quite variable depending on a person's sweat rate, mode of exercise, exercise duration, weather conditions, opportunities to hydrate, training status, heat acclimatization and exercise intensity. Because of the above circumstances, a customized hydration strategy is recommended that includes periodic hydration segments during the workout session. Sawka and colleagues (2007) clarify that prolonged exercise is difficult to balance electrolyte and water deficits.⁵

After exercise, the goal is to replenish any fluid or electrolyte shortfall. Sawka et al. (2007) suggest a resumption of normal meals and snacks (that contain adequate sodium) with sufficient water to restore the body.⁵ The authors state the sodium losses are quite different between individuals and difficult to assess, but a variety of food choices supply the depleted electrolytes. Lastly, fluids are best absorbed by the cells of the body post-exercise when ingested gradually, as opposed to in single large amounts.

According to ancient Chinese medicine and Indian culture, starting the day with a glass of hot water helps kick-start the digestive system and provides a range of health benefits. However, it's not a case of the hotter, the better. To protect the epithelial cells in your mouth and throat, keep water at a temperature of no lower than 120 degrees Fahrenheit. Drinking hot water alone will not help you lose weight, but it will help the process. Experts recommend starting your morning with warm water and lemon to boost your metabolism, allowing your body to burn more calories throughout the day. Drinking warm water also cleanses your gut and prevents bloating, helping you shed any extra water weight you may be carrying.

Clears sinuses: Everyone's looking for home remedies for a stuffy nose – so give a drink of hot water a try. It may help alleviate some of the symptoms of a respiratory tract infection. Clinical trials suggest that drinking hot water benefits nasal congestion quicker than drinking cold water does because the higher temperature speeds up the rate at which mucus may travel. “The temperature of fluids we drink may possibly make a difference in the way we manage and deal with certain upper respiratory infection symptoms.

Easier on your teeth: Your teeth may thank you for switching from cold to warm water. Warm water is better for the teeth and restorations, and is more easily absorbed. “Certain white filling materials contract in response to cold water, causing fillings to debond off the tooth. Again, make sure your water isn't too hot. Any extreme temperature on the teeth can be detrimental, so try to drink your water at room temperature to keep your pearly whites happy.

Better for digestion: Warm water has a vasodilator effect, meaning it widens the blood vessels and stimulates the blood flow to rush toward the intestine, aiding the digestive process. “Drinking it on an empty stomach in the morning speeds right through your digestive system to the bowels where it is needed. But the digestive health benefits of warm water don't stop there. It has a faster hydrating effect, so when it is followed by a meal the temperature helps emulsify fats, making them more digestible.

Helps clear out toxins: A drink of hot water raises the core body temperature, stimulating the sweating process, which is one of the way the body eliminates toxins. When consumed on a regular basis with lemon added to it, hot water helps balance all the acidic foods we ingest daily. If you're not a fan of lemon, try green tea, which may decrease free radical activity in the body.

Natural pain relief: While drinking cold water causes muscles to contract, drinking warm water increases blood flow to the tissues, allowing muscles to relax. This can help with all kinds of pain, from joint aches to menstrual cramps. Drinking warm water before going to bed also has a soothing effect, which may help you fall asleep faster, and it will make you feel fuller – no midnight cravings! – and more rejuvenated in the morning.

Improves circulation: Just like taking a warm bath can help your circulatory organs carry blood more effectively throughout your body, drinking hot water can improve circulation. That means healthier blood pressure and lowered risk of cardiovascular disease.

Eases constipation: Constipation occurs when there is little or no bowel movement and is often caused by a lack of water in the body. If you start each day with a drink of warm water (before eating anything) you can help improve your bowel movements and reduce the likelihood of constipation. The elevated temperature stimulates the intestinal peristalsis and helps with sluggish bowel movements and constipation. If you can stand it, sip warm water throughout the day for even greater benefits.

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