What About Water?

Dr. Kate Thomsen and Silky

Water… So plentiful, so ordinary, so cheap (for many of us) that we take it for granted. Oddly, in nutrition education, it is not considered a macronutrient. A macronutrient is a chemical element or substance that is essential in relatively large amounts for the growth and health of a living organism. Only protein, carbohydrate and fat typically make up that category. Why is water left off that list? It is ESSENTIAL for every living being in large quantities. Some consider macronutrients to be energy providing nutrients and, in that case, water would be excluded. However, new research is finding that perhaps water does provide energy – a possible new function among the many other roles of water in the body. (Google Pollack Laboratory, University of Washington)

Our body composition is primarily water: men are ~ 59% water (42 – 48 liters) and women (more fat, less muscle) are ~ 56% water (38 – 45 liters). Water is the basis of our body fluids: plasma to transport blood cells and nutrients, lymph fluid to take away waste products, mucous to trap foreign particles, saliva and gastrointestinal secretions for digestion, cerebrospinal fluid to protect the brain, sweat for waste removal and temperature control, tears to lubricate the eyes, sexual fluids for reproduction, urine removing waste, peritoneal fluid to lubricate the abdominal organs, amniotic fluid to cushion the fetus, breast milk to feed a newborn, and the fluid inside and outside our cells.

If water is the basis for all these fluids then it is clear that adequate intake of water provides functions and benefits across many body systems. Two-thirds of our total body water is contained inside our cells and one-third is outside the cells. Drinking adequate water keeps our cells plump like a grape and not shriveled like a raisin. Plump cells have adequate space for the production of proteins and other cell functions. The brain is 80% water and muscles are 75% water and these tissues are often the first to show symptoms of dehydration.

Since there is no reserve of water in the human body, the body fluids must be continuously recycled. Fluid balance is maintained by equalizing fluid intake and output. Fluid intake occurs with ingestion of foods and fluids. Fluid losses occur via sweat, exhalation but mostly through urine. About 2500ml (3 quarts) of fluids are moving in and out each day. Health authorities have recommended the 8x8 rule as the guideline for daily water intake: that is 8 8oz glasses (64oz) per day. Studies have shown the range of daily fluid intake for an adult is 1.6 to 3.2 L (54 – 108 oz), depending on environmental conditions and physical activity levels during the day. Typically we get about 50% of our water from foods and 50% from liquids. Meat, fish, eggs and especially fruits and vegetables contain significant amounts of water. Watermelon, onion, celery and cucumbers will also add water to the body.

When losses exceed input (vomiting, diarrhea, extended exercise, lack of fluid intake), dehydration occurs. This can occur over the course of only a few hours. Loss of only 1.5 – 2% of total body water can cause a 10% decrease in athletic performance. It can double driving errors to a level similar to drunk driving or sleep deprivation. It can impair mood, memory and concentration. Dehydration has been associated with anxiety, fatigue and increased frequency of headaches. It can play a role in constipation, kidney stones and hangovers. It has been associated with bladder and colorectal cancer. Dehydration decreases saliva, allowing bacteria to flourish causing bad breath. It can cause muscle cramps. It dries out the skin, and can bring on dizziness, foggy brain, and irritability. Dehydration can mask itself as hunger and may promote sugar cravings. Alternatively, drinking ½ liter of water 30 minutes prior to meals has been shown to increase satiety and metabolic rate - aiding in weight loss.

When water intake is inadequate, body fluid is conserved through lowering urine output and constricting blood vessels to keep circulation stable with less volume. Common blood and urine tests can show dehydration and a bio-electrical impedance analysis more accurately reflects the fluid status of an individual. Signs of being dehydrated include: dark yellow, stronger smelling urine, elevated heart rate, lack of sweating, elevated blood pressure, dry mouth, tongue and lips, and dizziness. Average urinary frequency is 4 – 8 times per day. Urinating less frequently than this may be a clue to dehydration. . Mild dehydration is defined as a loss of 1 -2% of body weight. For a 150# person that is 3# or 3 pints of fluid. Moderate dehydration is a 2 – 4% loss and serious dehydration starts with a loss of 5% of body weight. After losing 11% of body weight, kidneys fail and death can occur with 15 – 20% of body weight lost as fluid.

Who is at risk of dehydration? Actually everyone in this fast paced society where we seem to be in constant motion and too busy to pay attention to our thirst signals. We work under hot lights, in offices with dry heat, wearing synthetic non-breathable clothes, traveling in hot vehicles and low humidity airplanes.

A 2015 American Journal of Public Health article concludes that over 50% of American children are dehydrated and 25% do not drink water on a daily basis. This mildly chronic dehydration state can have significant repercussions for the physical, cognitive and emotional functioning of these children both currently and in the future.

Aging increases the risk of dehydration. The body signal of thirst for water is frequently blunted with age. Many people take a diuretic (water pill) for blood pressure control. This causes increased urinary output and mild chronic dehydration. People who experience incontinence will often restrict fluids thinking that it will decrease the incontinence. Actually, restricting fluids causes concentrated urine that irritates the bladder and may cause further incontinence or infection. People who retain fluid in their legs may be employing the same strategy, restricting fluid. The cause of fluid retention in the legs is not excessive fluid intake and the resolution is not achieved by restricting fluid.

People will restrict fluid in an attempt to sleep through the night rather than getting up to urinate. Getting up to go to the toilet once a night is considered normal. However, this generally increases with age. It is normal to get up twice a night in one's seventies and up to four times a night in one's nineties! When nocturnal wake- ups prevent good sleep, restricting fluid intake after 7 or 8pm is a better strategy than restricting total fluid intake.

Women who are breast feeding, athletes, and those experiencing diarrhea and/or vomiting need to increase fluids. People who don't sweat with exercise also need to increase fluids.

Mild chronic dehydration is very common. Review all the body fluids and their functions at the start of this article and imagine the long term effects of being a few pints down. Is it really that hard to develop some new habits around hydration? Seems it would be well worth it in the long run. Increased water intake is a very inexpensive way to improve your health.

Dr. Kate Thomsen's office for holistic health care is located in Pennington, NJ. She is board certified in Family Medicine, certified in Integrative/Holistic Medicine, and an Institute for Functional Medicine Certified Practitioner. She has been practicing Functional Medicine for over 15 years. For more information see www.drkatethomsen.com or call the office at 609-818-9700.

Kate Thomsen MD, MPH

Integrative and Holistic Health and Wellness

• Divide your body weight in pounds by 2 (150lbs /2 = 75lbs). This equals the amount of ounces of water one should drink every 24 hours (75oz).

• Start with two 8 oz glasses of water first thing in the morning when you are most thirsty.

• If you add lemon to your water drink it through a straw – a glass straw. (www.glassdharma.com). Acidic lemon can erode tooth enamel. Rinse your mouth with plain water after the lemon water and don't brush your teeth for 60 minutes.

• Don't like the taste of water? Add 1 oz juice to every 7 oz water.

• Drink purified water as much as possible. Your tap water may look good and be cleared of bacteria but it typically contains many pharmaceutical drugs in the ppb and ppt range, heavy metals, pesticide runoff and microplastics. My new favorite water filter is from PUR2O. (www.PUR2O.com)

• Stop drinking out of plastic bottles. BPA and other plasticizers are endocrine disruptors. Get a stainless steel or glass water bottle.

• Eat more plants! Plants are 80 – 90% water. Try Green juicing. Use coconut water as the foundation of your smoothies. Eat water storing roots like Yucca.

• Throw 3 TB chia seeds in 1 cup warm water. Stir to disperse, cover and place in refrigerator overnight. Remove the gelatinous chia gel from the refrigerator and use 1 cup to mix with 1 cup of other liquid (coconut milk?). Chia seeds absorb 9 – 10 times their weight in water. That's a sure fire way to rehydrate!!!

THE INSTITUTE FOR FUNCTIONAL MEDICINE® 2013 CERTIFIED PRACTITIONER

Office of Dr. Kate Thomsen
252 West Delaware Ave.
Pennington, NJ 08534
609-818-9700
WWW.DRKATETHOMSEN.COM
Additional articles on holistic health topics can be found on the website