

# Drink Up to Stay Healthy and Hydrated This Summer

## Tufts Health & Nutrition Letter, June 2017

Water, that is, along with these other smart sipping choices.

Every cell in your body needs water to function. Water transports nutrients and oxygen throughout the body, and carries away waste materials. Water makes up most of your body, ranging from about 75% of body weight in infancy to 55% of body weight at older ages. Your brain and heart are almost three-quarters water, your muscles and kidneys are almost 80% water, and even your bones are about 30% water.

Summer is an important time to keep your body's fluid needs in mind, says Dariush Mozaffarian, MD, DrPH, dean of Tufts' Friedman School and editor-in-chief of the *Health & Nutrition Letter*. "For older adults, there is the risk of subtle dehydration in hot weather, leading to lightheadedness and falls."

For staying hydrated, Dr. Mozaffarian adds, "Water is king. The best approach is to be sure to eat regular meals - food has plenty of natural and added salt, which you lose when sweating - and drink plenty of water. Fruits like watermelon, grapes, etc. are great options, too."

Sports drinks like Gatorade should be avoided, he says, unless you're engaged in extended vigorous activity in hot weather. And of course sugared sodas, sweetened ice tea and energy drinks are an "absolute no." The added sugars in these beverages come with little or no beneficial nutrients and plenty of risk for weight gain and diabetes.

**BEYOND THIRST:** As you age, you need to pay extra attention to your body's hydration needs. Older people often have a reduced sensation of thirst, so it's easier to miss the warning signs that you're becoming dehydrated. Older individuals also tend to have lower reserves of fluid in the body, may eat less regularly (and therefore consume less sodium), and may drink insufficient water following fluid deprivation to replenish the body's water deficit. Because of this, older people may need to pay more attention to their fluid intake, particularly during hot weather, and plan to drink regularly even when not thirsty.

The Adequate Intake (AI) of fluid - water from all food and beverage sources - for men over age 50 is 3.7 liters (almost 4 quarts) a day, which includes about 13 cups from beverages including water; the rest is typically obtained from food. For women over age 50, the AI is 2.7 liters (a little less than 3 quarts) a day, with about 9 cups coming from water and other beverages. So you actually need more than the popular notion of eight glasses of fluids a day - but it doesn't all have to be water.

In practice, according to national nutrition-survey data, men drink a combined total of about 11 cups of beverages per day, and women drink about 10 cups.

For most people, according to the Institute of Medicine, "fluid intake, driven by thirst... allows maintenance of hydration status and total body water at normal levels" - but keep in mind, as noted above, that as we age natural tendencies may not always be adequate. Despite what you may have heard, the water in caffeinated beverages such as coffee and tea does "count" toward keeping you hydrated, as discussed more below. So does the fluid content of foods, which may add up to about 22% of the average American's water intake.

In addition to drinking plenty of water and other healthy liquids to avoid dehydration this summer, you can actually reduce your risk by exercising regularly. Fit people of any age do sweat more, keeping the body cool, but also have more diluted sweat, losing fewer electrolytes as they perspire.

**FLUID FACTS:** So why is it so important to get enough water and other fluids? In summer, it's particularly crucial because of water's role in regulating the body's temperature, through sweating. Another reason older people need to be more aware of their body's fluid needs is that they are less able to compensate for the increased blood thickness that results from the loss of water through sweating.

Then there are the kidneys, which play a key role in regulating the body's fluid balance. Your kidneys work more efficiently when the body has plenty of water. Deprived of adequate fluids, the kidneys must work harder and are more stressed.

Other ways in which your body uses water include:

- Making saliva for food consumption and digestion
- Keeping mucosal membranes moist; these include membranes in your mouth, nose, eyelids, windpipe and lungs, stomach and intestines, and urinary system
- Serving as a "shock absorber" for your brain and spinal cord
- Transporting nutrients and oxygen throughout the body and removing waste
- Lubricating your joints.

## Page 2: What We Drink and Reality Check

Since your brain is about three-quarters water, it's not surprising that staying hydrated helps your brain function, too. Your brain needs water to manufacture hormones and neurotransmitters. Research on the effects of dehydration on the brain is inconsistent, however, with short-term impacts greatest on your mood and alertness.

If you suffer from osteoarthritis (the most common form), you can help fight the inflammation associated with that disease by staying hydrated. The Arthritis Foundation recommends "prehydrating" - drinking water before you exercise, not just after you've worked up a sweat - to help people with arthritis engage in physical activity with less discomfort. Increasing fluid intake may also help reduce the recurrence of gout.

**WHAT WE DRINK:** According to a 2011 report by the USDA's Agricultural Research Service, based on data from national nutrition surveys, drinking water and other beverages provides more than 80% of Americans' daily intake of total water, with the rest coming from eating food. Beverages can also be a significant source of healthy nutrients (e.g., from milk) or empty calories (e.g., from soda). Regular soft drinks and other sweetened drinks and alcoholic beverages are among the top five sources of calories for Americans age 19 and older. Overall, beverages provide 18% (385 calories) of total calories, and regular soft/other drinks contribute one-third (134 calories) of that amount. Beverages provide high proportions of adults' daily intakes of added sugars, but also of vitamin C (from fruit juices) and vitamin D and calcium (from milk).

As you might guess from the proliferation (and litter) of bottled water in recent years, on any given day, the percentage of adults drinking plain water at least once is higher than any other beverage. Other beverages consumed by high percentages of adults are coffee and regular soft/other drinks. At breakfast, the beverage most frequently reported by adults is coffee; at lunch, dinner and snacks, it is plain water.

Compared to younger adults, older adults drink more coffee and less plain water, regular soft/other drinks, and alcoholic beverages. The total intake of beverages is higher for adults under age 60 versus those 60 and older.

All beverages other than plain water contribute to hydration, but water remains your best choice. An Institute of Medicine (IOM) expert panel concluded that most Americans get plenty of water not only from plain water but also from food, milk, juice, and even coffee, tea, and alcoholic beverages. The share of that fluid intake coming from caloric beverages has sharply increased in recent years, however, contributing to the obesity epidemic. Total daily fluid intake by US adults increased from 79 fluid ounces in 1989 to 100 ounces in 2002 - with the increase coming entirely from caloric beverages.

**REALITY CHECK:** It's vital to consume enough fluid from all sources to keep your body hydrated, but claims that gulping even larger quantities can further benefit your health are mostly unsupported by science. In an overview in *Nutrition Reviews*, Tufts experts Irwin H. Rosenberg, MD, and Kristen E. D'Anci, PhD, and Barry Popkin, PhD, of the University of North Carolina concluded, "Little research supports the notion that additional water in adequately hydrated individuals confers any benefit."

So forget about the claims of "water cures" touted in popular magazines and books. You can't "cure" heart disease, diabetes, cancer or chronic pain simply by drinking lots of water. In fact, even the evidence linking healthy hydration to reduced risk of chronic diseases or conditions is relatively thin. The exception, not surprisingly, is that strong evidence links good hydration with reduced risk of kidney stones and other stones in the urinary system.

Despite what you may have heard, drinking lots of water may also not help with gastrointestinal function. Water is important when consuming fiber because it helps fiber bulk up and do its job. But according to the experts in *Nutrition Reviews*, "Inadequate fluid consumption is touted as a common culprit in constipation, and increasing fluid intake is a frequently recommended treatment. Evidence suggests, however, that increasing fluids is only of usefulness in individuals in a hypohydrated state [lacking adequate water], and is of little utility in euhydrated individuals [having normal water content]."

So there's no need to go overboard in guzzling water - but plenty of reason to make sure you're getting enough. This summer and all year long, you can help keep yourself healthy and hydrated by avoiding the extra calories of sugary drinks and opting instead for the inexpensive and ubiquitous choice of plain H<sub>2</sub>O.