

# You Really Don't Need to Drink Eight Glasses of Water Each Day

Analysis by [Dr. Joseph Mercola](#)

May 01, 2024

## STORY AT-A-GLANCE

- › The recommendation to drink eight 8-ounce glasses (known as 8x8 for short) of water a day is not scientifically backed
- › The best way to determine how much water you need is to listen to your body and let thirst be your guide
- › It's a myth that waiting to drink until you're thirsty is too late, because by then you're already dehydrated; your body's physiologic thirst mechanism is triggered before you're dehydrated

***Editor's Note: This article is a reprint. It was originally published May 27, 2017.***

The common mantra that you need to drink eight 8-ounce glasses of water a day to stay healthy and hydrated may be one of the biggest health myths out there. Most days I personally do not drink any water as I eat so much fruit. However, on the three days of week I sauna i typically drink a quart of water.

While drinking pure water as your primary beverage is undoubtedly one of the most important cornerstones of health, there's a misconception that you need to be chugging down water all day to stay well. In fact, a report from The National Academy of Sciences concluded that most Americans are not walking around dehydrated on a regular basis. They noted, "The vast majority of healthy people adequately meet their daily hydration needs by letting thirst be their guide."<sup>1</sup>

The report added that while 80% of Americans' total water intake comes from water and other beverages (including caffeinated beverages like coffee, which do "count" in your total fluid intake, contrary to popular belief), 20% comes from the food you eat.

## **Is There Scientific Basis for 8x8?**

The recommendation to drink eight 8-ounce glasses (known as 8x8 for short) of water a day is often stated as scientific fact. But is it actually based on science? In a review published in the American Journal of Physiology, Dr. Heinz Valtin of Dartmouth Medical School in Lebanon, New Hampshire, set out to answer this question.

He was unable to find any published literature notating the origin of the rule, but potentially traced it back to an apparently offhand comment made by the late influential nutritionist Fredrick J. Stare, who was said to be an early champion of drinking at least six glasses of water a day. A book by Stare contains this (unreferenced) passage:<sup>2</sup>

*"How much water each day? This is usually well regulated by various physiological mechanisms, but for the average adult, somewhere around 6 to 8 glasses per 24 hours and this can be in the form of coffee, tea, milk, soft drinks, beer, etc. Fruits and vegetables are also good sources of water."*

The New York Times suggested, meanwhile, that the source of the 8x8 myth may have been a Food and Nutrition Board recommendation made in 1945, which suggested people should drink 2.5 liters of water a day, which amounts to more than 84 fluid ounces. But, the Times continued, "They ignored the sentence that followed closely behind. It read, 'Most of this quantity is contained in prepared foods.'"<sup>3</sup>

## **Many Myths Regarding Water Consumption Prevail**

After a thorough review of the literature as well as discussions with experts, including nutritionists and colleagues, Valtin still could find no further basis for the water recommendation that's become a 21st-century mainstay. He wrote:<sup>4</sup>

*"Thus I have found no scientific proof that we must 'drink at least eight glasses of water a day,' nor proof, it must be admitted, that drinking less does absolutely no harm.*

*However, the published data available to date strongly suggest that, with the exception of some diseases and special circumstances, such as strenuous physical activity, long airplane flights, and climate, we probably are currently drinking enough and possibly even more than enough."*

Interestingly enough, Valtin also put to rest some myths regarding water consumption, such as that waiting to drink until you're thirsty is too late, because by then you're already dehydrated. In reality, your body's physiologic thirst mechanism is triggered before you're dehydrated.

As Valtin said, this makes perfect sense: "[T]hirst is so sensitive, quick, and accurate that it is hard to imagine that evolutionary development left us with a chronic water deficit that has to be compensated by forcing fluid intake."<sup>5</sup> Valtin even suggests the idea that dark urine means dehydration is a myth, noting that the depth of color in urine is inversely linked to urinary volume, which varies significantly from person to person.

While I believe [checking your urine's color](#) is a simple way to ensure you're drinking enough water (looking for a pale yellow color), Valtin notes that moderately yellow urine may be fine and should not necessarily be interpreted as "dark," although some people might take it that way. "Therefore," he states, "the warning that dark urine reflects dehydration is alarmist and false in most instances."<sup>6</sup>

## **Are We Becoming 'Waterlogged'?**

Dr. Timothy Noakes is a professor of exercise science and sports medicine at the University of Cape Town, South Africa, who is perhaps best known for the book, "Waterlogged: The Serious Problem of Overhydration in Endurance Sports" — the best resource I know of for this topic.

It suggests that overhydrating will actually worsen athletic performance, not improve it. According to Noakes, the first drinking guidelines put out by The American College of Sports Medicine (ACSM) said that runners should "drink regularly during exercise," which is fair advice. But then an individual working for the U.S. military published a paper saying that U.S. soldiers should drink 64 ounces of water per hour in order to improve performance.

Though the paper was not based on concrete evidence, it was widely embraced by the military, and then filtered through to the American College of Sports Medicine's guidelines for runners. ACSM still recommends drinking "ahead of thirst," a move that Noakes says impairs exercise performance.

He uses the example of African hunters who were able to chase down an antelope for four to six hours in midday heat, without a source of fluids until after the hunt ended (when they would drink the animal's blood and intestinal water). While most runners drink only when thirsty, some (over 36%) instead drink more than their thirst dictates, often to a set schedule.<sup>7</sup>

This, in turn, not only may reduce their athletic performance but also put them at risk of exercise-associated hyponatremia (EAH). In hyponatremia, your cells, including those in your brain, swell with too much water, which can be fatal. There are also reports of asymptomatic hyponatremia, which can have consequences of its own. According to Valtin:<sup>8</sup>

*"[D]ilution of the plasma as reflected in mild, largely asymptomatic hyponatremia is said to be common in general practice. Moreover, nonfatal hyponatremia has been reported in a variety of circumstances. In the majority of patients, hyponatremia reflects an excess of water in the body rather than a decrease in sodium.*

*Therefore, urging a high fluid intake on absolutely every person may well run the danger of inducing water intoxication and potentially serious sequelae, not only in the elderly but also in healthy young persons."*

# The Benefits of Drinking Enough Water

There are clearly disadvantages to not drinking enough water, as your body is made mostly of water. In fact, your body consists of about 42 liters (11 gallons) of water, which accounts for between 50% and 70% of your body weight. Your blood is 85% water, your muscles 80% water, your brain 75% water and even your bones are 25% water,<sup>9</sup> which signals the importance this fluid plays in your health.

What happens if you don't drink enough? The No. 1 risk factor for [kidney stones](#) is not drinking enough water, for starters. There is also some research showing that high fluid intake is linked to a lower risk of certain types of cancer, such as bladder cancer and colorectal cancer.<sup>10</sup>

Even the risk of fatal coronary heart disease has been linked to water intake, with women who drank five or more glasses of water per day reducing their risk by 41% compared to women who drank less. Men, meanwhile, reduced their risk by 54%.<sup>11</sup> Your body also needs water for blood circulation, metabolism, regulation of body temperature and waste removal.

If you are dehydrated, even mildly, your mood and cognitive function may suffer. In fact, according to a study published in the journal *Physiology & Behavior*, dehydrated drivers made twice the amount of errors during a two-hour drive compared to hydrated drivers.<sup>12</sup> So the issue isn't that water isn't important for optimal functioning; it's that you may not need to chug water and carry a bottle with you wherever you go in order to stay adequately hydrated.

It's unclear how many Americans are truly dehydrated, but it's more common among the elderly and children. One study even suggested more than half of American children are dehydrated, while about one-quarter do not drink water on a daily basis.<sup>13</sup> However, some have suggested that the value of the study used to denote dehydration may have been overly conservative – 800 mOsm (mean urine osmolality)/kg or higher, when 1,200 mOsm/kg may still be within the normal range.<sup>14</sup>

# So How Much Water Do You Need?

Drinking eight 8-ounce glasses of pure water a day may not be likely to cause you harm; it's just that the evidence is lacking on whether that is the magic number for everyone, and most likely it appears that it is not. The reality is that some people may be dehydrated and would benefit from drinking more water each day, and from making water their primary source of fluids.

However, as the Times put it, "[A]s people in this country live longer than ever before, and have arguably freer access to beverages than at almost any time in human history, it's just not true that we're all dehydrated."<sup>15</sup> Your water requirements vary depending on your age, activity level, climate and more. But you needn't get bogged down with trying to figure out the exact amount your body needs or tracking how many glasses you've consumed in a day.

There's no need for that because your body will let you know. Simply using thirst as a guide to how much water you need to drink is a simple way to help ensure your individual needs are met, day by day. As mentioned, you can also use the color of your urine as a guide. If it is a deep, dark yellow then you are likely not drinking enough water.

If your urine is scant or if you haven't urinated in many hours, that too is an indication that you're not drinking enough. Based on the results from a few different studies, a healthy person urinates on average about seven or eight times a day. Ultimately, however, listening to your body and letting your thirst be your guide is your best solution for getting the water your body needs each day.

## Sources and References

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- <sup>1</sup> [The National Academy of Sciences February 11, 2004 \(Archived\)](#)
- <sup>2, 4, 5, 6, 8, 9, 10</sup> [Am J Physiol Regul Integr Comp Physiol. 2002 Nov;283\(5\):R993-1004. \[PDF\]](#)
- <sup>3, 14, 15</sup> [The New York Times August 24, 2015](#)
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