



Is Your Brain Dehydrated?

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You may have heard on the news that Catherine, Duchess of Cambridge, had to be hospitalized because of hyperemesis gravidarum, a very severe form of morning sickness. One of the treatments is intravenous fluids to help rehydrate mother and baby.

By definition, dehydration occurs when you lose more fluid than you take in and your brain and body don't have enough water and other fluids to carry out normal functions. Each day you lose fluid through elimination of urine and stool and through breathing. Every time you exhale you lose moisture. If you wear glasses you've likely "breathed" on the lenses and then wiped them clean with a soft cloth.

In a country where there is plenty of safe drinking water, what can contribute to dehydration?

1. Failure to drink enough fluids on a daily basis
2. Illness with nausea, diarrhea, and vomiting
3. Working in hot conditions
4. Over exercising with excessive sweating
5. Aging with a decrease in thirst sensation

As you know, blood brings micronutrients to the brain and carries waste products away. About 55% of blood is composed of plasma, which is mostly water (92% by volume). The exact percentages at any given time may vary by arterial versus venous blood and by whether or not the person is dehydrated. Since the brain depends heavily on blood flow, dehydration can cause your brain to function less effectively. Studies have shown that a 1% level of dehydration can result in a 5% decrease in cognitive function.

What could decreased cognitive function look like? You might have difficulty solving math problems (e.g., making change in the grocery store) or have trouble focusing on your work or even experience fuzzy thinking. Dr. Dave Carpenter, author of *Change Your Water, Change Your Life*, has listed a dozen of the more common symptoms of chronic dehydration including: constipation, high blood pressure, acid-alkaline imbalance, weight gain, and so on.

According to Dr. Corinne Allen, founder of the Advanced Learning and Development Institute, about 85% of the brain is composed of water. It has no way to store water, however, so it needs a continuous supply for the production of hormones and neurotransmitters. And it's not just the brain. Water is the main component of the human body. Here are some estimates:

- Overall body: two thirds water
- Muscles: three fourths water
- Bones: one fifth water

Symptoms of dehydration can range from dry mouth, dry skin, sense of thirst, sleepiness, fatigue, to headache, decreased urine output, and constipation, to name just a few. Most of the time, dehydration can be reversed by drinking enough fluids to replace what was lost. Severe dehydration, however, can be life-threatening, and may require immediate medical treatment. It's usually better to think ahead and prevent dehydration whenever possible. For example, I carry water with me when I travel so I have an easily accessible supply.

According to Mayo Clinic, food provides about 20% of one's total fluid intake on average. That percentage may go up slightly in cold weather if you are eating hot soup on a regular basis. Juices and other liquid beverages contribute, as well. Water is still a best bet because it's calorie-free, inexpensive, and readily available.

At a brain symposium several years ago, the presenter was emphasizing the relationship of water to brain function. "Think of it this way," he said. "Your brain must have water to do its job. If you don't give it a good supply, your brain will direct the body to steal some fluid from your bladder, as it has the largest potential reservoir of fluid in the body at any given time." He paused and then delivered a line I've used many times since: "That sure puts a different spin on the term *pea brain!*"

Avoid being a *pea brain*. Give your brain and body the pure water they need on a daily basis. They will thank you. In turn, you can thank them for helping you look good, feel energetic, and think quickly.

Note: Contact your healthcare professional to discuss your need for water, especially if you have a medical condition that may require limiting intake.

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