LE ZOOM NUTRIACTIS® #JULY





WATER: ESSENTIAL TO THE BODY, BUT WHY?

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Water is the most important constituent of the human body, accounting for around 60% of an adult's body weight. Because of its multiple functions, it is essential to the survival of humans, who can only live for a few days without consuming water. The body starts to show the first signs of dehydration after only 24 hours without water intake.

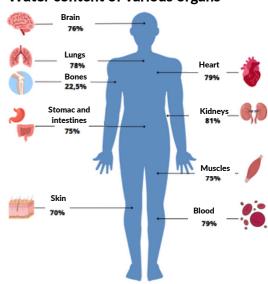


The importance of water

The body constantly eliminates water through breathing, sweating and excretions (urine, faeces). Water consumption is essential to maintain intake above needs and thus keep the body healthy by:

- being a main component of our cells and helping them function properly
- participating in many of our body's chemical reactions
- transporting various molecules, such as nutrients, to the cells
- enabling good blood circulation
- helping to eliminate body waste (e.g. CO2 and toxins)
- participating in the thermoregulation (maintenance of body temperature)

Water content of various organs



Recommandations



During the day, 2 to 2.5 liters of water are eliminated by the body, a loss that must be compensated in order to maintain the body's equilibrium.

It is recommended to drink at least **1.5 to 2 liters of water per day** (for adults). It is also recommended to drink even before feeling thirsty, especially for older adults, because their sensation of thirst is generally reduced.

However, the elimination of water by the body and therefore water requirements depend on many factors (temperature, age, physical activity...) and can therefore vary.

Water consumption

- Water
- Water-rich food (fruits, vegetables, etc.)

Water usage in the body

- Cell constituent
- Chemical reactions
- Transporter
- Blood circulation
- Waste elimination
- Thermoregulation

Water loss

- Urine
- Sweating
- Breathing
- Stool

Dehydration

Dehydration is defined as **the elimination of water and electrolytes by the body, which is not compensated by intake.** Dehydration is usually caused by diarrhea, vomiting, heavy sweating, chronic illnesses such as diabetes, heavy use of diuretics (which increase urine production, such as coffee, tea or herbal infusions) or medication, but it may also be caused by not drinking enough water.



Symptoms of dehydration:

- · Thirst, dry mouth
- Fatigue, exhaustion
- Dry skin, reduced skin elasticity
- ↓ of urine (and/or dark urine), ↓ sweating
- Reduced physical performance
- Headaches, dizziness, disorientation, faintness
- Disturbances in thermoregulation (hot/cold sensation)
- Behavioral changes (irritability, agitation...)

Dehydration may increase the risk of :

- Urinary tract infections
- Kidney stones
- Gallstones
- Constipation
- Cardiovascular diseases
- Hypertension
- Metabolic diseases such as diabetes

Tips to increase your water consumption

To increase your water consumption and reach the recommended levels, here are a few tips to help you:



Keep a water bottle with you and make sure it's visible (e.g. on your desk).

Set reminders on your phone

(e.g. every 2 hours)



Set up **rituals**: for example, drink a cup of water when you wake up in the morning, then a cup when you arrive at work, and one when you get home...



Use an app or a connected watch to track your water consumption



Flavor your water by adding: aromatic herbs (mint, basil...) or pieces of fruit (strawberry, peach...) or vegetables (cucumber, tomato...).



Eat water-rich food (fruits and vegetables - except dried fruits)



Drink before you feel thirsty (still water, carbonated water)



Drink more soups (hot or cold)

Water consumption disorders and Eating Disorders (ED)

ED can be associated with changes in beverage consumption (increase or decrease) on a daily basis, known as water consumption disorders.



Potomania

Potomania is characterized by the **irrepressible and permanent need to drink large quantities of beverages**, usually water (> 3L/day). Potomania induces an excessive water intake which will disrupte the normal body water balance (intake/elimination).

People suffering from potomania can drink more than ten liters per day. Potomania is common in people suffering from ED, it can be used as a strategy to suppress hunger and feel more full. Sometimes, excessive water consumption is also used to induce compensatory behaviours (vomiting). Potomania is not without health risks: it can cause water retention, nausea and vomiting, headaches, electrolyte imbalance (disturbance of minerals in the body), kidney problems, cerebral edema (accumulation of fluids in the brain) and, in the most severe cases, death.

Water restriction

Unlike potomania, hydric restriction is characterized by **insufficient or non-existent hydration**. This water consumption disorder needs to be treated rapidly. If water intake is lower than the quantity of water eliminated by the body, there's a risk of **severe dehydration**, which **can lead to coma**.



Conclusion

Water consumption is therefore essential to maintain a healthy body. It's essential to listen to your body and to adapt your water intake to your needs, and therefore to the water eliminated by your body. For an healthy adult, it is recommended to drink a minimum of 1.5 to 2 liters of water per day.





References

ANSES.Eau de boisson : bonnes pratiques de consommation. https://www.anses.fr/fr/content/eau-de-boisson-bonnes-pratiques-de-consommation

Boron, W. F., & Boulpaep, E. L. (2016). Medical physiology E-book. Elsevier Health Sciences.

Hooper L, Abdelhamid A, Attreed NJ, Campbell WW, Channell AM, Chassagne P, Culp KR, Fletcher SJ, Fortes MB, Fuller N, Gaspar PM, Gilbert DJ, Heathcote AC, Kafri MW, Kajii F, Lindner G, Mack GW, Mentes JC, Merlani P, Needham RA, Olde Rikkert MGM, Perren A, Powers J, Ranson SC, Ritz P, Rowat AM, Sjöstrand F, Smith AC, Stookey JJD, Stotts NA, Thomas DR, Vivanti A, Wakefield BJ, Waldréus N, Walsh NP, Ward S, Potter JF, Hunter P. Clinical symptoms, signs and tests for identification of impending and current water-loss dehydration in older people. Cochrane Database of Systematic Reviews 2015, Issue 4. Art. No.: CD009647. DOI: 10.1002/14651858.CD009647.pub2. Accessed 14 June 2023.

Jéquier, E., & Constant, F. (2010). Water as an essential nutrient: the physiological basis of hydration. European journal of clinical nutrition, 64(2), 115-123.

Lacey, J., Corbett, J., Forni, L., Hooper, L., Hughes, F., Minto, G., Moss, C., Price, S., Whyte, G., Woodcock, T., Mythen, M., & Montgomery, H. (2019). A multidisciplinary consensus on dehydration: definitions, diagnostic methods and clinical implications. Annals of medicine, 51(3-4), 232–251. https://doiorg.proxy.insermbiblio.inist.fr/10.1080/07853890.2019.1628352

Manger bouger L'eau, indispensable à notre santé : conseils et astuces pour s'hydrater. https://www.mangerbouger.fr/manger-mieux/bien-manger-sans-se-ruiner/bien-manger-en-preservant-la-planete-sans-se-ruiner-c-est-possible/l-eau-indispensable-a-notre-sante-conseils-et-astuces-pour-s-hydrater

Nakamura, Y., Watanabe, H., Tanaka, A., Yasui, M., Nishihira, J., & Murayama, N. (2020). Effect of Increased Daily Water Intake and Hydration on Health in Japanese Adults. Nutrients, 12(4), 1191. https://doiorg.proxy.insermbiblio.inist.fr/10.3390/nu12041191

Popkin, B. M., D'Anci, K. E., & Rosenberg, I. H. (2010). Water, hydration, and health. Nutrition reviews, 68(8), 439–458. https://doi.org/10.1111/j.1753-4887.2010.00304.x

Watso, J. C., & Farquhar, W. B. (2019). Hydration Status and Cardiovascular Function. Nutrients, 11(8), 1866. https://doi.org/10.3390/nu11081866