



THE ESSENTIAL GUIDE TO HYDRATION

WHY WE NEED WATER

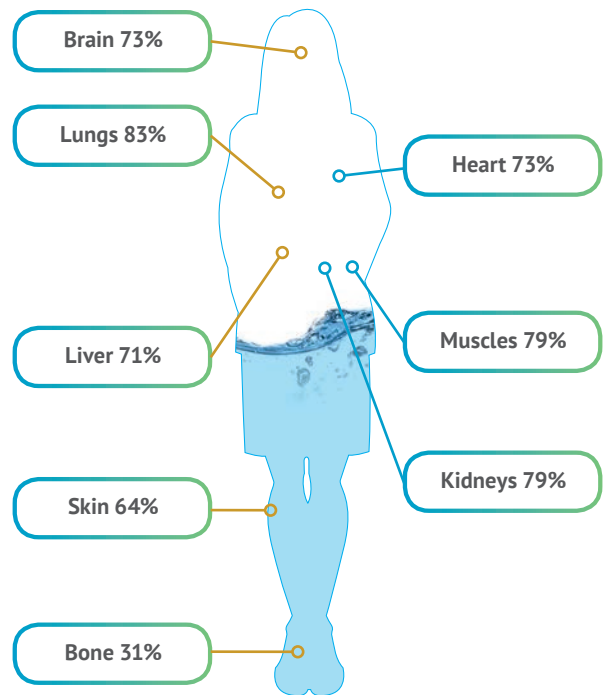
Water is essential for life. It accounts for about 60% of our body weight and performs crucial roles such as carrying nutrients and waste products between our major organs, helping to regulate body temperature, lubricating our joints and acting as a shock absorber.¹

Body water is found both inside cells, and is called, intracellular water. Intracellular water contains dissolved solutes (electrolytes) which are essential to maintaining healthy body functions. Water found outside cells is called extracellular water. Blood contains extracellular water which is transported around our body. Water moves easily between cells to wherever it is needed.

The human body works to maintain optimal hydration by using hormones to control how much we urinate and giving our brains signals to tell us that we are thirsty.² As our brains are 73%³ water, insufficient hydration can have an adverse effect on how our brains function.⁴ On average, we take in and excrete around two and a half litres of water a day, although this varies from person to person.

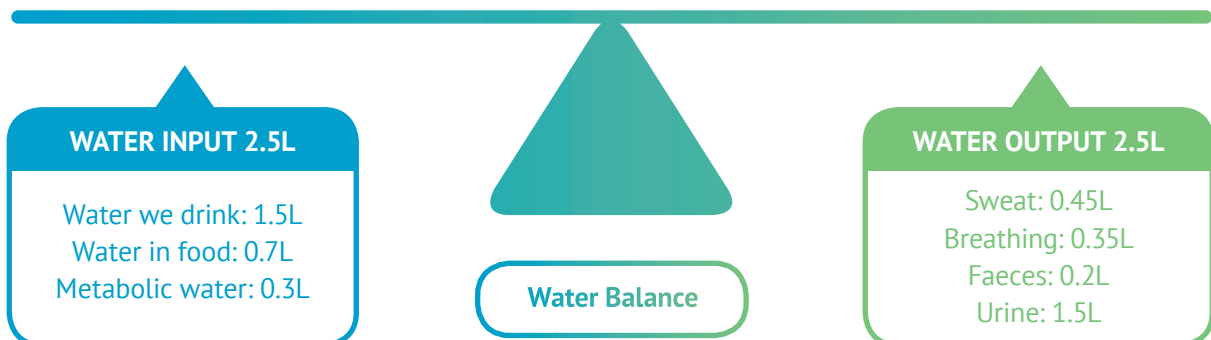
AVERAGE WATER CONTENT IS 60% IN ADULTS

The body is comprised of between 50-75% water, depending on a person's age and gender. In adults body water = 60%.



Source: Adapted from Mitchell HH et al (1945)³

TABLE 1: THE WATER BALANCE



Source: Adapted from Jequier and Constant (2010)¹

STATES OF HYDRATION

Hydration status may fluctuate throughout the day, however, our body will regulate itself over a 24-hour period⁵. Optimal hydration is when our water intake matches requirements. However, when water intake is less than our bodies' requirements, we start to become 'hypo-hydrated' and this can lead to insufficient hydration, or 'dehydration'.

We are at the greatest risk of dehydration when we are too hot or too dry, have limited access to water or lose more water than usual. Warm or dry environments, such as centrally-heated homes tend to increase our need for fluid. We can lose more fluid through sweating (due to exercise or hot climates), or by suffering vomiting and diarrhoea.

CONSEQUENCES OF INSUFFICIENT HYDRATION

Mild dehydration may occur when we lose about 1 per cent of our body weight due to water restriction. Some common symptoms of mild to moderate dehydration are given below⁶:

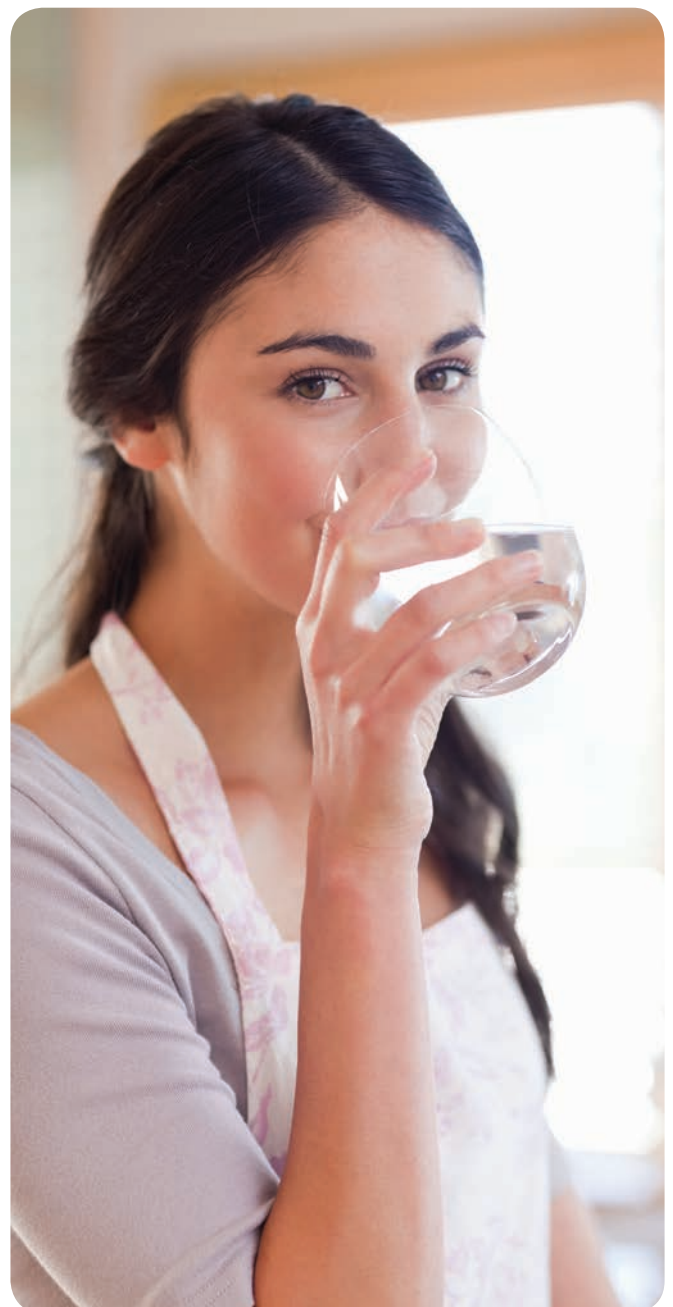
- **Constipation**
- **Dark yellow or brown urine**
- **Dry, sticky mouth**
- **Few or no tears when crying**
- **Headache**
- **Increased thirst**
- **Muscle tiredness**
- **Sleepiness or tiredness**
 - **children may be less active than usual.**

Research shows that losses of 2% or more can reduce cognitive (mental) performance.⁷

Inadequate water intake can also contribute to chronic kidney diseases.⁸

Elderly people in particular are at increased risk of dehydration, due to a number of factors. The thirst sensation lessens with age, while using multiple drugs and medicines can also affect water balance which means they might become dehydrated more easily or without realising.⁹ It can be difficult for elderly people to physically reach or handle drinks and some actively restrict the amount they drink due to worries about not reaching the toilet on time.¹⁰

Persistent dehydration can lead to confusion and even hospitalisation unless dealt with promptly, therefore, health professionals and caregivers should encourage the elderly to drink fluid at regular intervals throughout the day.¹¹

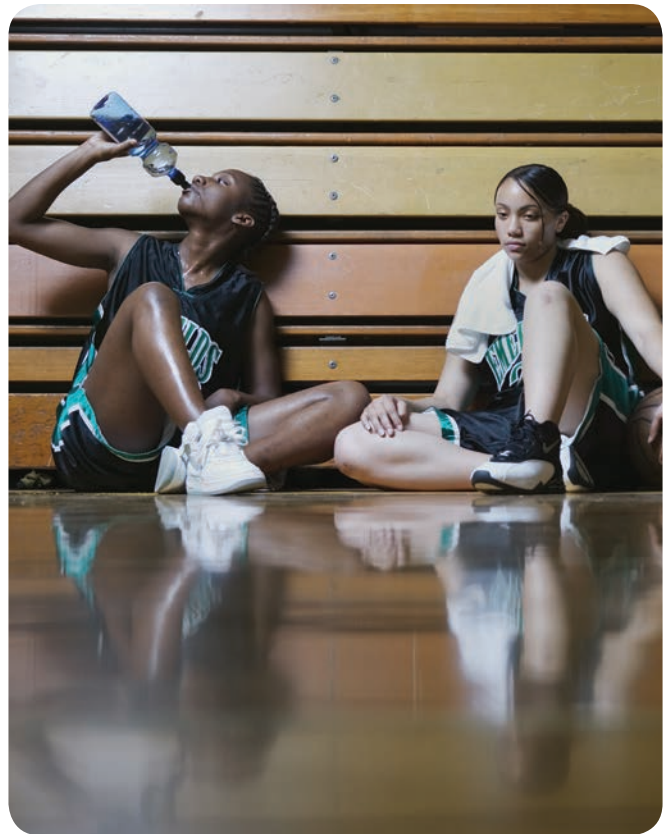


THIRST AND URINE COLOUR

Thirst is one of the indicators of hydration status. The body’s fluid balance itself is regulated by thirst sensations, and fluid and salt concentrations, hormones and nerve signalling pathways all have important roles to play in this.¹² For these reasons healthy individuals often receive advice from health professionals to “drink to thirst”. However, it should be recognised that age and whether we are healthy can affect how much we can rely on thirst.¹³

Another indicator of whether we are adequately hydrated is urine colour. As a general rule of thumb, if you are healthy and well-hydrated the urine will tend to be straw-coloured, and becomes progressively darker the more dehydrated we become. Once it becomes honey-coloured this a sign that not enough water has been drunk. Urine that is dark brown in colour can indicate severe dehydration. Please note, certain medications and foods, such as beetroot, may change the colour of your urine.

Note: If urine colour remains dark after increasing water intakes, medical advice should always be sought.



HOW MUCH WATER DO WE NEED?

Like vitamins and minerals, our fluid requirements are individual and depend on factors such as body weight and size, age and gender, levels of physical activity and the temperature of our environment. European guidelines, however, provide a useful insight into how much water our bodies need each day.

The European Food Safety Authority (EFSA) states that water contributes to the maintenance of normal physical and cognitive functions and normal thermoregulation.¹⁴ Based on the EFSA’s scientific opinion on adequate water intake, women should

aim for total water intakes of 2 litres per day and men 2.5 litres per day.¹⁵ The same guidelines also apply to older individuals.

Remember, these guidelines include water from beverage and food sources. Ideally 70-80% of this should come from drinks and 20-30% from foods.¹⁵ Food with a high water content; such as melon, soups and stews, will make the greatest contribution to overall water intake. As hydration levels fluctuate during the day, it is advisable to sip water regularly throughout the day.

TABLE 2

Gender	Age Group	Amount of fluid from drinks and food (litres/day) ¹	Amount of fluid from drinks only (litres/day) ¹
Boys and girls	4 to 8 years	1.6	1.1 – 1.3
Girls	9 to 13 years	1.9	1.3 – 1.5
Boys	9 to 13 years	2.1	1.5 – 1.7
Women	14 years +	2.0	1.4 – 1.6
Men	14 years +	2.5	1.75 – 2.0

Source: Adapted from EFSA’s recommendation for water intake¹⁴; Table 2.

Key: 1. It is estimated that 70-80% of the recommended fluid comes from drinks and 20-30% from food.
2. Estimated amounts of fluid from beverages only.

HYDRATION FOR ATHLETES

For people participating in high intensity exercise, it is possible to reach a state of over hydration if you consume too much fluid in a short period of time. In extreme cases this can cause a condition known as hyponatraemia, but, this is very rare.



GLOSSARY OF MEDICAL TERMINOLOGY

Hypo = under

Hyper = over

Hypo-hydrated = water intake is less than body's requirements. This can lead to poor hydration or dehydration.

Hyper-hydrated = water intake is more than body's requirements. This is also known as over-hydration.

Hyponatremia = low sodium levels in the blood plasma.

Hypernatremia = high sodium levels in the blood plasma.

TOP TIPS FOR HEALTHY HYDRATION

- 1 Whilst you can meet your body's water requirements from other drinks, water is one of the healthiest ways to hydrate as it has no calories or sugar.
- 2 Foods can also contribute to your daily water intake. Those with a high water content; for example melon, soups, stews, fruit and vegetables, will make the greatest contribution.
- 3 Drink at regular intervals throughout the day, in order to meet your body's water requirements.
- 4 The elderly and children are more at risk of dehydration since they are not always regulating their water intake properly.
- 5 Make sure you always have access to water, even when you are out and about.
- 6 You may need to drink more water when you exercise or spend time in hot and dry environments.



Natural Hydration Council

FURTHER INFORMATION

Natural Hydration Council

www.naturalhydrationcouncil.org.uk

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Other fact sheets in this series:

Hydration for Children
Hydration and Exercise

Hydration for Recreational and
Physical Activities

Hydration and Urinary Tract Health
Hydration and Kidney Health
Hydration and Dental Health

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