



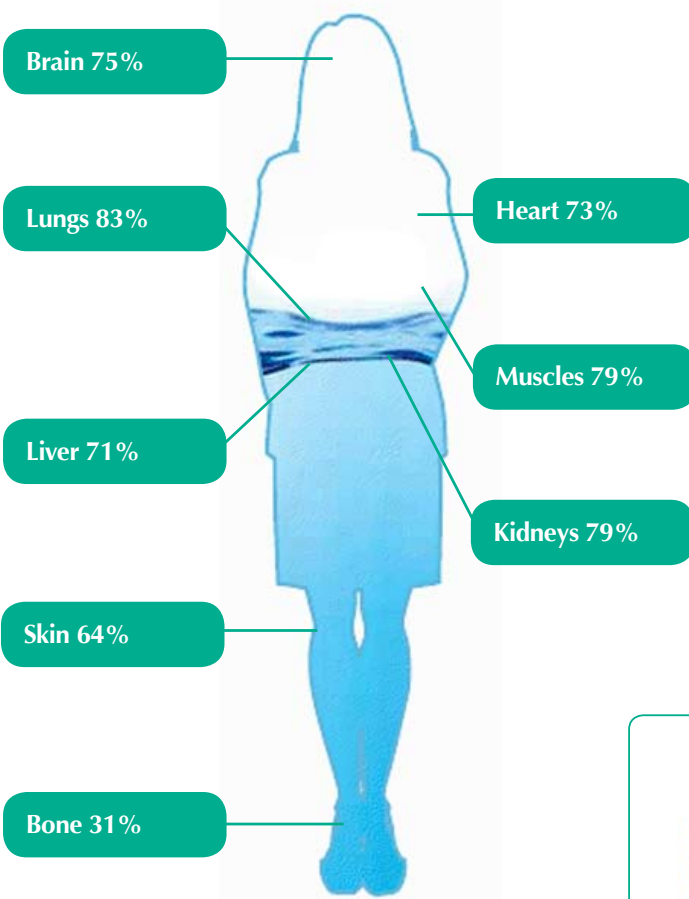
# The Essential Guide to Hydration

## Why we need water

Water is essential for life. It accounts for about 65% of our body weight and performs crucial roles such as carrying nutrients and waste products between our major organs, helping regulate body temperature, lubricating our moving parts, and acting as a shock absorber.<sup>1</sup>

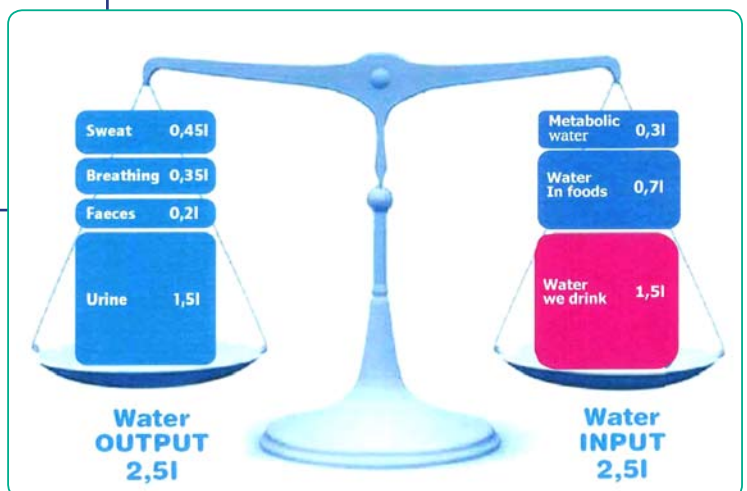
### Average water content is 65% in adults

The body is comprised of between 50 – 75% water, depending on a person's age and gender. In adults body water = 65%



Water in our bodies is found both inside cells (called intracellular water) and outside cells (called extracellular water). Blood is an example of extracellular water. Water moves easily between cells to wherever it is needed.

The human body works hard 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.<sup>2</sup> And because our brains are 75-85% water, poor hydration can have an adverse effect on how our brains function.<sup>3</sup> On average, we take in and excrete around three litres of fluid a day, although this varies considerably from person to person.



## States of hydration



Our bodies are constantly fluctuating between different states of hydration. When our water intake matches our bodies' requirements, this is described as optimal hydration. However, when water intake is less than our bodies' requirements, we start to become 'hypo-hydrated' and this can lead to poor hydration, usually called 'dehydration'.

Scientists, sports and health professionals sometimes measure hydration by measuring changes in body weight. Dehydration can be defined as a 2 to 3% drop in body weight in a typical warm environment.<sup>4</sup>

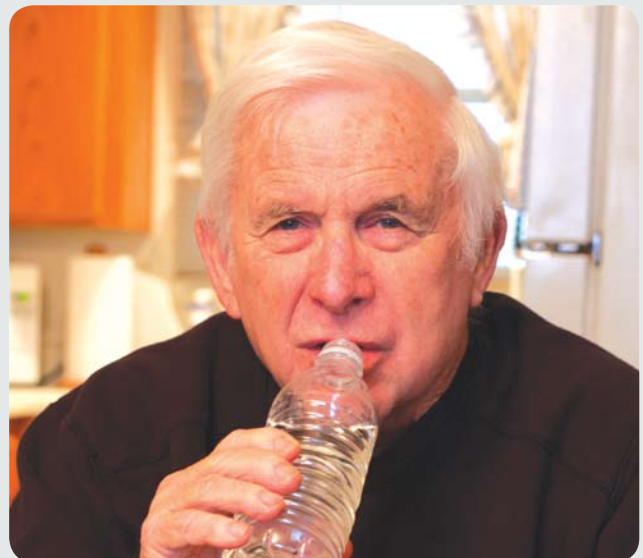
We are the greatest at risk of dehydration when we are too hot or too dry, have limited access to water, or need more water than usual. Warm or dry environments, such as centrally-heated homes or air-conditioned offices increase our need for fluid. We can lose additional fluid through sweating (due to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

## Consequences of poor hydration

Studies show that even a 1 to 2% reduction in body weight over the day can signal mild dehydration significant enough to reduce our ability to concentrate. Some common symptoms of mild to moderate dehydration are given below (the severity will vary depending upon body size and the external temperature):

- Increased thirst
- Dry, sticky mouth
- Tiredness
- Reduced concentration
- Headache
- Muscle tiredness
- Decreased urine output
- Dark yellow or brown urine
- Dizziness or light-headedness

In babies and young children, even mild dehydration can cause symptoms such as confusion, irritability and tiredness.<sup>5</sup> Young children are less effective at regulating their temperatures, and have a larger surface-to-weight ratio than adults so are less tolerant to fluid losses such as through vomiting or diarrhoea.



Older people are another group who are at increased risk of dehydration. This is because the thirst sensation lessens with age and very elderly people may avoid drinking too much because of issues with continence. As persistent dehydration can lead to confusion and even hospitalisation unless dealt with promptly, health professionals and caregivers should encourage the elderly to drink fluid at regular intervals throughout the day to maintain optimal levels of hydration.<sup>6</sup>

## Hydration and health

Experts recognise that a regular intake of water is vital for maintaining good health. Studies in adults show that even mild dehydration can reduce everyday mental performance and increase feelings of aggression or irritation.

And optimal hydration can even help prevent some common conditions, such as constipation, urinary tract infections, gallstones and glaucoma. It may also lower the risk of stroke and asthma. Emerging evidence also suggests that adequate hydration could play a role in the prevention of some cancers, including bladder and colon cancer.<sup>7</sup>



## How much is enough?

Like vitamins and minerals, our fluid requirements are individual and depend on factors such as body weight/size, physical activity and the temperature of our environment. However, a number of different expert bodies have made recommendations for fluid and these are a good starting point.

The Food Standards Agency has based its guidance on glasses of fluid a day (i.e. over and above any fluid that we may have from foods). Adults are recommended to drink 6 to 8 glasses a day to prevent dehydration (around 1.2 litres).<sup>8</sup>



Advice: Source BNF, Design: source NHC

### Dietary Reference intake values for total water in Europe<sup>9</sup>

Life-stage group:	Adequate intake of water (ml/day)		
	From food	From beverages	Total water
Boys 2-3 years	390	910	1300
Boys 4-8 years	480	1120	1600
Boys 9-13 years	630	1470	2100
Boys 14+ years	750	1750	2500
Girls 2-3 years	390	910	1300
Girls 4-8 years	480	1120	1600
Girls 9-13 years	570	1330	1900
Girls 14+ years	600	1400	2000

EFSA, 2008

The British Nutrition Foundation recently published healthy hydration guidelines for fluid intake. Water is the only fluid which they recommend drinking “plenty” of.

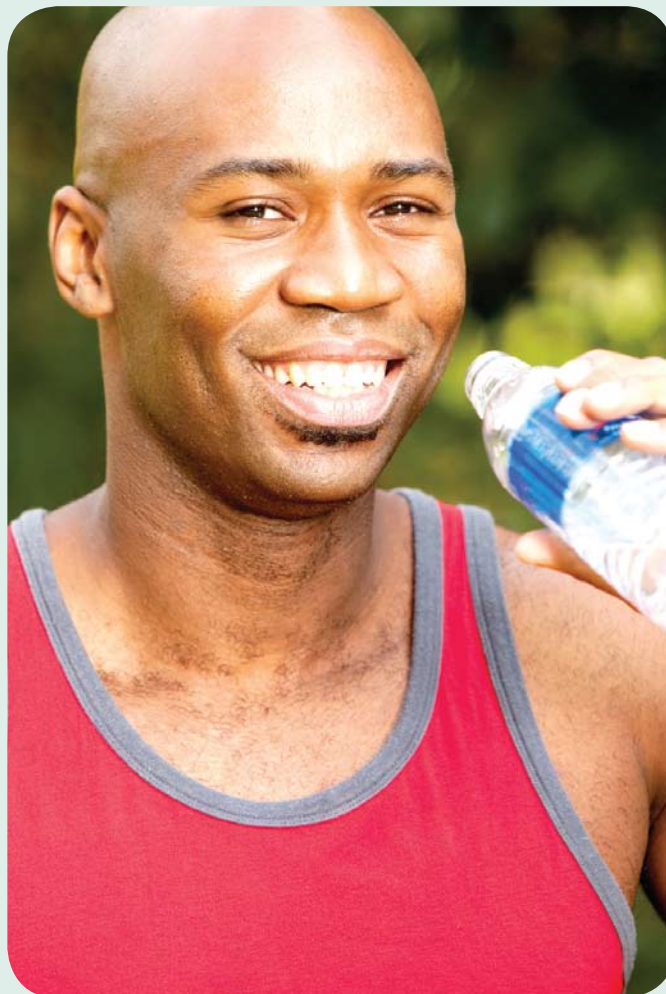
European guidelines assume an even greater water requirement; up to 1.75 litres of water for men and boys aged 14+ and 1.4 litres water for women and girls aged 14+.

They break out into age groups and also stipulate the amount of water which should be obtained from foods. Of course, people living in warm climates or those who are very active (through work or sport) will tend to have higher fluid requirements.

In certain situations, care must be taken to balance fluid intake with important salts required by the body otherwise a condition known as hyponatraemia may happen.<sup>10</sup> Examples include prolonged bouts of exercise or severe diarrhoea and vomiting. In these cases, rehydration mixes, which include salts, are recommended.

## Ten tips for healthy hydration

1. Make sure you always have access to water, even when out and about
2. Bottled water is handy when you are at work or on the move
3. Drink an amount of fluid that is right for you. The recommendations in this leaflet are a good starting point but should be adapted to your own needs
4. Drink water at regular intervals throughout the day
5. Quench your thirst with water first before going on to enjoy other beverages such as tea, coffee, squash and fruit juices
6. Remember that water-containing foods can contribute to your daily fluid intake, for example yoghurt, soups, stews, fruit and vegetables
7. Alcohol is dehydrating and should be balanced with plenty of non-alcoholic fluids, such as water. Avoid binge drinking.
8. Excessive amounts of caffeine can also be dehydrating
9. Remember to drink more when you exercise or spent time in hot environments
10. Young children and older people can dehydrate quickly so offer them drinks on a regular basis.



### Further information

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020 7395 1979  
[www.naturalhydrationcouncil.org.uk](http://www.naturalhydrationcouncil.org.uk)

### Other factsheets in this series

Water and Weight Management  
Hangover vs. Hydration (or Partying Without Pain)

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