

# Hydrate: Water in the Human Body

In this edition of *DentaltownUK*, **David Bretton** explains why he believes increasing water intake is one of the best habits that you can develop to improve your health



**W**ater is one of the most important nutrients available: It accounts for 60 to 80 percent of our body weight and it is the single most abundant chemical substance in the body. (Brain tissue, for example, is about 85 percent water.) Without water, there is no life; we can survive for a couple of weeks without food, but for only a matter of days without water.

Water is found in the human body in our vital organs, blood, urine, gastrointestinal

juices, perspiration, synovial fluid, lean muscle, fat and bone.

Water plays a vital role in most bodily functions:

- Maintaining the health and integrity of all cells in the body
- Transporting vital nutrients and oxygen to cells
- Improving circulation
- Absorbing nutrients, and digestion
- Chemical reactions
- Excreting byproducts of the body's metabolism, excess electrolytes and urea
- Regulating temperature (sweating)
- Lubricating and cushioning joints—helps act as a shock absorber
- Moistens mucous membranes and the skin

## Water intake and output

The body is unable to store water; therefore, we must take in fresh water daily. Most of our water intake comes from our diet, but we also produce a small amount of water through cellular metabolism. Water intake varies hugely between individuals, mainly determined by their diet. Typically someone would consume approximately 2,500 milliliters per day.

As we try to maintain our hydration levels, our bodies are constantly losing water. Water is lost mainly through urine



(around 60 percent), but it's also lost through sweating, the lungs, the skin and faeces. The average human body loses 2,000–2,500ml per day—much more in hot weather and during exercise. Depending on intensity and temperature, we could lose approximately 1,000–2,000ml per hour during exercise.

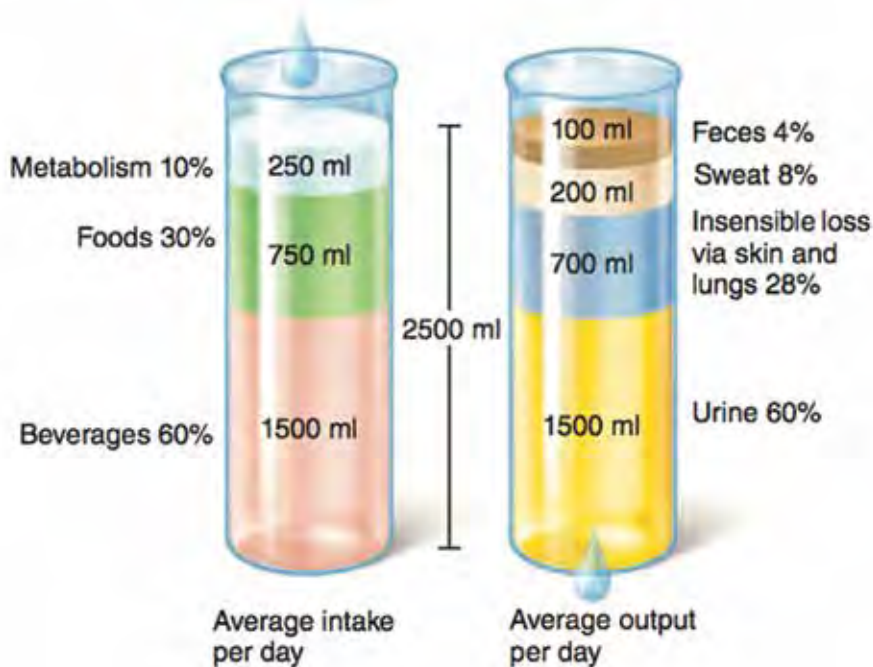
We must ensure that our water intake is sufficient; when water intake and output are in balance, the body is adequately hydrated. Everyone should aim to consume a minimum of about 2 liters per day, and more-active people may require up to around 5L per day!

### Good and bad rehydrators

Throughout our days, in an attempt to stay hydrated we consume many drinks. Some drinks are better for us than others. The best rehydrators are fluids where the sugar content is equal to (isotonic) or less than (hypotonic) the blood. The best rehydrator will always be drinking water.

Bad rehydrators are drinks where the sugar content is greater than (hypertonic) the blood. Through osmosis, this causes water to be drawn out of the blood and into the gut, causing dehydration rather than rehydration. Many fruit juices and sugary sports drinks are hypertonic.

Other drinks we should avoid when



trying to stay hydrated are drinks that contain diuretics (substances that increase urine output). The main diuretics found in our diets are in caffeine (tea, coffee and soft drinks) and alcohol.

### Assessing hydration levels

Observing the colour of our urine is perhaps one of the best indicators we have of our hydration levels. Clearer urine indicates that we are hydrated, while more concentrated urine suggests we are dehydrated. Thirst is not a good indicator for hydration levels, because it's a response to dehydration.

### Dehydration

Dehydration occurs when there is a deficit of total body water. Dehydration occurs when water intake is insufficient or when water output is excessive (for example, haemorrhage, prolonged vomiting or diarrhoea, and profuse sweating).

Losing just of 2 percent of your body

weight in water—for a 60-kilogram person, this is 1.2L of water) will seriously compromise physical and mental performance. A loss of 5 percent—for a 60kg person, this is 3L of water—can be fatal. Early signs of dehydration are poor concentration, headaches, fatigue, reduced muscle function, dry mouth and decreased urine output.

### The take-home message

Water is essential. The large number of vital roles it plays in our bodily functions explains why increasing water intake is one of the best habits you can develop to improve your health. Keeping hydrated helps our bodies function optimally both mentally (improved concentration and energy) and physically (improved fat-burning ability).

To make sure you're consuming enough water daily, it's a good idea to keep a bottle of water close at hand. I keep a bottle of water with me daily and aim to drink 3–4L per day. ■

