

There are many benefits to being well hydrated and when we're busy at work, it's important to make sure we drink plenty of water throughout the day. Being dehydrated can have a negative effect on our alertness and concentration at work, the quality of our work, even our personal safety and that of others around us. It is important to prioritise hydration in order to maintain our mental and physical performance.

The type of work we do affects our requirements for water. For example, strenuous work, especially on warm days, can lead to increased perspiration and higher water requirements.<sup>1</sup> Equally, working in an air conditioned office, can speed up moisture evaporation from our skin and lungs so we end up with increased water loss and need to drink more water accordingly.



This factsheet looks at these issues and gives advice about making it easy to make healthy hydration habits part of our work environments – no matter what job we do.

## What influences hydration at work?

Factors	Example
Access to water	Long-distance driving, working in controlled environments where you can't reach for a glass of water i.e. hospitals, schools, large offices and building sites.
Air conditioning	Offices, gyms, airports, shops
Barriers to water consumption eg. protective/layered clothing	Construction and emergency service workers. Face masks, helmets
Heavy work	Construction, agriculture, landscaping, armed forces
Warm environments	Working outdoors in the summer, catering staff, heated buildings, armed forces.
Working at altitude	Aircrew, armed forces

## Hydration and work output

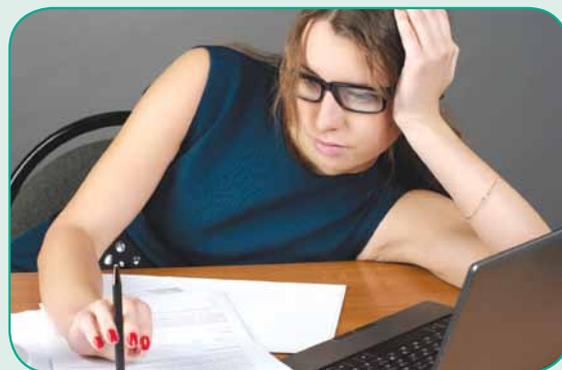
The brain is particularly sensitive to changes in water balance,<sup>2</sup> which in turn, can affect mental performance (e.g. concentration, alertness and short-term memory)<sup>3</sup> and overall work-related productivity.

One study looked at whether water deprivation had any affect on the mental performances and reaction times of male and female volunteers. The scientists found that when men and women were dehydrated, they were more likely to feel tired, sluggish, and to need significantly more effort and concentration compared with when they were adequately hydrated.<sup>4</sup>

Similar findings have been reported by other studies. In one trial, 5 adult volunteers drank very little fluid for either 13, 24 or 37 hours. During this time, tests were carried out to look at any body changes, and how the subjects felt. The volunteers reported that their concentration and attention (feelings of alertness) were greatly reduced.<sup>5</sup>

Results like these illustrate the importance of good hydration to everyone in their working environment and especially people employed as pilots, crane operators, train drivers, air traffic controllers and many others whose safety – and that of others - depends on alertness and concentration.

Headaches can be experienced by dehydrated subjects.<sup>5</sup> Although more research is needed, scientific research suggests that drinking water at regular intervals is a good way to help alleviate headache symptoms due to dehydration.<sup>6</sup>

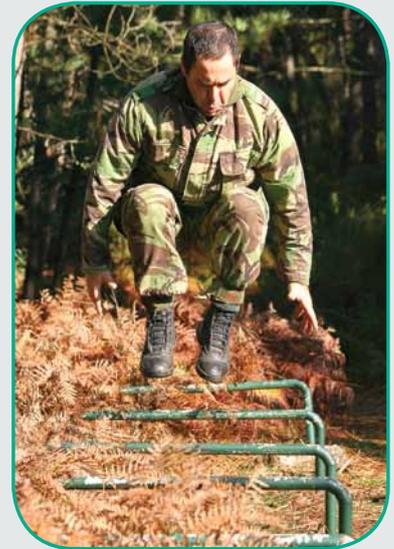


## Mood and behaviour

When we are lacking fluid, we can start to feel increasingly agitated, impatient and tense.<sup>5</sup> This was demonstrated in a study of U.S. Army officers during which they were asked to take part in intense training sessions in the heat for over 53 hours. During this time, hydration status, performance and mood were assessed.

The army officers lost more than 3 litres (around 5 pints) of body fluid through sweating during their training. Tests of vigilance, reaction times, memory and ability to reason all showed significant impairment. When asked about their mood, they reported feeling increasingly tense, confused, tired and depressed. Feelings of vigour were also significantly reduced.<sup>7</sup>

This is an interesting study showing that a reduced hydration status combined with hot weather, affects mood, concentration and overall mental well-being. Could this explain why those of us who use public transport in the summer months can easily lose our cool?



## Health and safety



Physical work and/or hot environments cause excessive sweating and eventually the water loss can exceed water intake, leading to an imbalance. Scientists have calculated that, in very hot environments i.e. industrial workplaces, sweat rates can exceed 2 litres per hour.<sup>8</sup> Fluid intakes are often hampered by the need to wear protective equipment such as face masks, but failing to replenish fluids at regular intervals could reduce work output and increase the risk of heat injuries.<sup>9</sup>

For these reasons, work safety organisations, such as the UK Health and Safety Executive (HSE) state that in the workplace there should be adequate supplies of water taking the temperature of the work environment and type of activity into consideration.<sup>10</sup> Equally, the U.S. Occupational Safety and Health Administration (OSHA) advise that workers exposed to heat stress drink fluids on a regular basis, e.g. around 250ml (one cup) of water every 20 minutes.<sup>11</sup> Drinking fluids at regular intervals will help to replenish lost fluids before dehydration sets in, which is important because by the time you actually feel thirsty, the body's water level is likely to already be lower than it should be.

## Hydration choices

Although lots of different beverages can help maintain optimal hydration status, water should ideally be the first choice beverage, followed by alternative options i.e. tea, coffee and sugar-sweetened beverages. This was the advice given by experts in the Healthy Hydration Glass shown in the figure below.



## Top Tips

1. People with strenuous jobs, particularly in warm conditions, should make sure that they are adequately hydrated by drinking before they feel thirsty.
2. Drinking chilled fluids (around 250ml) at regular intervals could help to reduce the risk of heat stress and work-related accidents.<sup>11</sup>
3. Adults in the workplace should aim for a total daily water intake of around 2 litres/day (women) and 2.5 litres/day (men).<sup>12</sup> This can be obtained from beverages and moisture-rich foods.
4. Urine colour is a useful way of checking your hydration status in the workplace i.e. dark yellow, concentrated urine is a sign of dehydration.
5. Drink small amounts of water at regular intervals, this could help reduce headaches caused by dehydration.<sup>6</sup>
6. If your job involves operating heavy machinery or making decisions affecting your safety, or the safety of others, don't risk dehydration and the possible decline in alertness and speed of reaction that may follow - be sure to stay well-hydrated at all times.



## Further information

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London WC2H 9QJ  
020 7395 1979  
[www.naturalhydrationcouncil.org.uk](http://www.naturalhydrationcouncil.org.uk)

## Other fact sheets in this series

The Essential Guide to Hydration  
Hangover vs. Hydration (or Partying Without Pain)  
Hydration and Weight Management  
Stay Hydrated Whilst on Holiday  
Back to School - Hydration for Children  
Pregnancy and Motherhood

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