

KEY TIPS ON HYDRATION

RECOGNISING SIGNS AND SYMPTOMS OF MILD DEHYDRATION

IS YOUR PHYSICAL PERFORMANCE
LOWER THAN USUAL?

DO YOU FEEL TIRED AND LETHARGIC?

ARE YOU CONSTIPATED?

THESE MIGHT
BE SIGNS OF
MILD DEHYDRATION



Fluids are continuously lost from the body. Water is lost via respiration and through the skin, renal system, and gastrointestinal tract¹ and this water needs to be replaced. The daily water requirement depends on a number of factors including the person's diet, environment, age and activity level¹. For adolescents over 14 years old and adults the European Food Safety Authority (EFSA) has given an adequate water intake of 2 L for females and 2.5 L for males*².

Dehydration occurs when the body loses more water than it takes in. **Mild dehydration** (equivalent to a 1-2%² decrease in body mass) may have an effect on performance and may lead to an increased risk of adverse health outcomes³:

Physical performance: Dehydration can adversely affect exercise performance and it is estimated from research that dehydration equivalent to 2% of body

mass loss is where a negative effect on endurance performance may occur⁴.

Cognitive performance: Acute dehydration - such as that resulting from 2 hours exercising in the heat - can indeed affect mental performance. However, in situations where less severe dehydration occurs (such as when refraining from drinking for a relatively short period of time) authors have generally failed to find evidence of cognitive impairment⁵.

Disorders and Disease: There is strong evidence for an association between chronic systematic mild dehydration and urolithiasis, urinary tract infection, hyperglycaemia in diabetic ketoacidosis, and mitral valve prolapse. Association with constipation, hypertension, coronary heart disease, stroke, venous thromboembolism, dental disease, gallstones, and glaucoma is less strong⁶.

SIGNS AND SYMPTOMS OF DEHYDRATION MAY INCLUDE:

- * thirst³
- * tiredness³
- * palpitations due to an increase in heart rate⁷
- * increased body temperature as a result of decreased blood flow to the skin and sweating compromising thermoregulation⁷

Although these signs and symptoms are neither specific nor sensitive, it is important to consider whether dehydration might be the cause.

Most people drink in response to thirst, and in many cases this is enough to avoid dehydration. However, it is important to take into account that the regulatory mechanism impairs with age, and it may not always be possible to drink when thirst arises.

Under special circumstances, when large amounts of water and electrolytes are lost due to vomiting, diarrhoea, or even sweating (e.g. after intensive sport or during hot weather), oral rehydration salt solutions or electrolyte solutions are needed.

In order to ensure an appropriate amount of water, it is important to take into account that of the total water consumed, about:

20-30%
typically comes from food and about
70-80%
from beverages
(all types, not just plain water)^{2,8}



However, this may vary greatly depending on the diet that an individual chooses^{2,8}

1. Panel on Dietary Reference Intakes for Electrolytes and Water (2005) Dietary reference intakes for water, potassium, sodium, chloride, and sulphate. National Academy Press: Washington DC. **2.** EFSA Panel on Dietetic Products, Nutrition, and Allergies (NDA); Scientific Opinion on Dietary reference values for water. EFSA Journal 2010; 8(3):1459. Available online: www.efsa.europa.eu/en/efsajournal/pub/1459.htm **3.** Kolasa KM, Lackey CJ, Grandjean AC. Hydration and Health promotion. Nutrition Today 2009;44:190-201. **4.** Cheuvront SN, Carter R, Sawka M. Fluid balance and endurance exercise performance. Curr Sports Med Rep 2003;2:202-8. **5.** Szinnai G, Schachinger H, Arnaud MJ, Linder L, Keller U. Effect of water deprivation on cognitive-motor performance in healthy men and women. Am J Physiol Regul Integr Comp Physiol 2005;289(1):R275-80. **6.** Manz F, Wentz A. The importance of good hydration for the prevention of chronic diseases. Nutr Rev. 2005;63:S2-S5. **7.** Kavrouras SA, Anastasiou CA. Water physiology. Nutrition Today 2010;45:S27-S32. **8.** Manz F, Johner SA, Wentz A, Boeing H, Remer T. Water balance throughout the adult lifespan in a German population. Br J Nutr 2011;1-9 [Epub ahead of print].