KEY TIPS ON HYDRATION

european hydration institute

CLIMATE AND ENVIRONMENT

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Living, working and exercising in challenging climatic or environmental conditions influences our requirements for water due to changes in water losses from respiration and sweating. Sweat production, is affected by[1]:

- Environmental temperature
- Air movement
- Humidity
- Intensity and duration of physical activity
- Clothing

Therefore, sweat rates vary greatly and can be quite low (< 0.5L/h) or reach >3L/h for some individuals.

HOT ENVIRONMENTS

Hot environments promote sweating, which helps keep the body cool, but increases the need for both fluid and sodium (salt) replacement.

WHO IS AT RISK?

- People exercising or taking part in sport in hot climates, e.g. cyclists, runners.
- Outdoor labourers, e.g. agricultural workers, construction workers, road workers.
- Workers who need to wear protective clothing, e.g. firemen, oil workers, military.
- Indoor workers in hot environments, e.g. factory workers, plant or machinery workers, greenhouse personnel.

COLD ENVIRONMENTS

Contrary to expectations, physical work or exercise in cold temperatures can increase water requirements as wearing heavy or impermeable clothing can promote sweating[2]. Additionally, for those exposed several hours per day to cold dry air, increased water loss might occur through breathing. This means that water requirements can be underestimated.

WHO IS AT RISK?

- People exercising or taking part in sport in cold climates, e.g. skiers, alpine walkers, runners.
- Staff working in cold climates, e.g. ski lift workers, power industry workers, construction workers, mountain rescue teams.
- Indoor staff in cold environments, e.g. workers in refrigerated areas.

HIGHER ALTITUDES

Thin, dry air at altitude contributes to water losses as a consequence of hyperventilation and hypoxia-induced diuresis (water losses related to low blood oxygen levels)[3]. Access to water is often restricted when exercising or working at high altitude.

WHO IS AT RISK?

- Climbers above 1,600m.
- Workers at high altitude, e.g. construction workers, air crew, mountain rescue teams.

AWARENESS FOR HEALTHCARE PROFESSIONALS

Our fluid intakes are made up of **20-30%** **from foods and** **70-80%** **from beverages**

1. People exposed to chronic heat stress will lose both water and sodium through increased sweating.
2. Water requirements in more extreme climatic and environmental conditions can be much higher than Adequate Daily Intakes[4].
3. Sweating and sodium losses vary widely affecting individual fluid and sodium requirements.
4. People being exposed to cold dry air over several hours might have increased water losses through breathing.
5. Certain workers may have limited access to fluids or palatable water, leading to difficulties accessing sufficient fluids for health[5].
6. People can benefit from education about when and how to replace lost fluids and salt.
7. Providing a range of different beverages to suit all tastes can encourage fluid intakes.

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