

Heat stress and sport - reducing the risks

A watt is the unit of power or energy expenditure per second. The human body generates about 100 watts from internal metabolic processes, but this can escalate to 1,000 watts during heavy exercise. Keeping a constant temperature of around 37°C is vital. To lose heat and maintain core temperature, blood vessels in the skin expand and bring body heat to the skin surface. Perspiration floods out of sweat glands and evaporates from the skin to cool the body.

Heat stress occurs when sweat can't evaporate fast enough to keep the body sufficiently cool. Many of the symptoms occur as a result of excessive loss of body salts and water.

At rest and in comfortable temperatures, a person sweats about two litres of fluid every 24 hours. During hot weather (35°C), this fluid loss can leap to around 10 litres over the same time period. Exercising in hot weather accelerates fluid loss even more.

Symptoms of heat stress

The symptoms include:

- Deterioration in sporting performance
- Muscle cramps
- Headache
- Dizziness
- Nausea
- Vomiting.

If the symptoms are ignored and left untreated, it can lead to a life-threatening complication known as heat stroke. Children and the elderly are particularly vulnerable to dehydration and heat stress.

Safety suggestions

Suggestions to prevent heat stress during exercise include:

- **Fitness** – a physically fit body is better able to manage the stresses of sport.
- **Acclimatisation** – keep up an exercise program during the cooler months, so that your body is prepared for sport during summer.
- **Avoid the hottest part of the day** – start sporting activities before 9 am or after 6 pm during summer, and try to avoid sport or exercise during the hottest part of the day.
- **Clothing** – wear loose, light-coloured and comfortable clothes made from natural fibres. Wear a visor or hat.
- **Fluids** – drink at least half a litre of fluids in the two hours before exercising. During your sport, aim to drink about 200 ml every 20 minutes or so. Choose a specially formulated sports drink if your sporting event goes for more than an hour. After the game, drink around half a litre of water.
- **Alcohol** – alcohol dehydrates the body, so avoid drinking any alcohol for at least one day before playing sport.
- **Rest breaks** – frequent breaks in the shade allow the body to cool down.
- **Check for symptoms** – be alert for the symptoms of heat stress or dehydration.

Calculating your fluid requirement

To work out how much water on average you need to drink, weigh yourself before and after your game. A loss of one kilogram equals a loss of one litre of fluids. If you find you have lost weight after your game, try to increase your fluid intake next time.

Managing heat stress

Suggestions to treat heat stress include:

- Rest in a cool, shaded place.
- Remove excess clothing.
- Drink plenty of liquids, either cool water or diluted sports drink.
- Sponge the body with tepid water and fan to promote evaporation.
- Don't douse the body with cold water or ice, as this will encourage the blood vessels in the skin to constrict and retain body heat.
- Seek medical assistance.
- If the person is confused, unconscious or has trouble breathing, call an ambulance immediately.

Where to get help

- Your doctor
- Always call an ambulance in an emergency Tel. 000
- NURSE-ON-CALL Tel. 1300 606 024 – for expert health information and advice (24 hours, 7 days)

Things to remember

- Heat stress occurs when sweat can't evaporate fast enough to keep the body sufficiently cool.
- Symptoms include muscle cramps, deterioration in sporting performance, headache and dizziness.
- Suggestions to prevent dehydration and heat stress during sporting activities include drinking plenty of fluids before, during and after the game, avoiding the hottest parts of the day, and taking frequent rest breaks.

This page has been produced in consultation with, and approved by:

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