

19. HOT WEATHER PROBLEMS

Exercise in a hot weather can cause a wide range of problems that are best avoided by careful preparation and prevention (see Prevention in hot weather, p26). Recognition of early symptoms is essential, as they are not painful and therefore easy to ignore.

Heat exhaustion and heat stroke

Heat exhaustion and heat stroke are due to long periods of physical exercise in hot conditions resulting in loss of body fluid and salts.

Heat exhaustion

This can be thought of as dehydration due to exercise in hot weather. While recovery in mild cases of heat exhaustion can be rapid, weakness may persist for days. If the illness was moderate to severe, the victim may be unwell for days and evacuation may be needed.

Symptoms and signs

Same as dehydration: tiredness, weakness, dizziness, headache, etc, PLUS:

- ™ muscle cramps
- ™ temperature is usually normal but may be up to 39°C
- ™ the victim may feel faint or even faint briefly (see 'Heat stroke' next page).

Treatment

- ™ Provide shelter from the sun, cool shade, good ventilation, insulation from hot ground.
- ™ Lay the victim flat on their back with legs raised if they feel faint, or on their side if they do faint.
- ™ Cool them: fan them while spraying, wiping, sponging or splashing with water (the victim may be semi-naked or covered with a wet sheet). If their temperature is raised, apply wet cloths (not cold, no ice) to the neck, armpits, groin and upper abdomen while continuing to fan and spray the victim.
- ™ Re-hydrate (see p158 for type and rate of fluid replacement).
- ™ If there is any loss of consciousness (other than brief fainting), treat urgently as heat stroke.

Heat stroke

This is an emergency. Heat stroke is life threatening, causing death by overheating of the brain and other vital organs. The heat loss mechanisms of the body fail and there is a rapid rise in body temperature. It represents the extreme end of the spectrum of heat-induced problems and can develop if early symptoms are undetected or untreated and exercise is continued. Once the initial collapse and over-heating have been dealt with, exclude other causes of fever and unconsciousness (e.g. malaria, septicaemia, meningitis).

Symptoms and signs

- ™ Signs and symptoms of heat exhaustion, PLUS:
- ™ sudden collapse and onset of unconsciousness
- ™ hot, red and dry skin, high fever (over 40°C) (or the victim may be pale and shivering)
- ™ rapid bounding pulse and rapid irregular breathing
- ™ dizziness, confusion, clumsiness
- ™ fits may occur.

Treatment

- ™ *This is an emergency:* cool the victim rapidly as described for heat exhaustion. Even if they are shivering, continue cooling (if you can, measuring core temperature is very helpful).
- ™ Give oxygen (6 to 8L/min).
- ™ When the victim is able to swallow safely:
 - ▶ re-hydrate (see p158 for type and rate of fluid replacement)
 - ▶ give them a sugary drink to correct low blood sugar.
- ™ Treat for shock and evacuate urgently.
- ™ Do NOT give aspirin or paracetamol to lower their high temperature.

Other hot weather problems

Dilutional hyponatraemia (low blood sodium level)

This typically occurs in endurance-type situations where there are long periods of sweating exercise when NO food has been eaten but LOTS of plain water has been drunk. As a result, sodium concentration in the blood can drop too low, *with little or no dehydration.*