

HEAT DISORDERS AND HEALTH EFFECTS

HEAT STROKE occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of work load and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict. First aid includes moving the individual to a cool location, removing their outer clothing, wetting the skin, and increasing air movement to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible and followed by immediate medical treatment.

HEAT EXHAUSTION The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, because fainting can result creating a hazard to the individual. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency. Individuals suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

HEAT CRAMPS usually occur when performing hard physical labor in a hot environment. Heat cramps are attributable to the body's loss of salt through sweating. Resting and drinking water and fluids rich in electrolytes can help. Salt tablets should not be used for this purpose. They tend to cause retention of salt and water in the digestive system, thus depriving the rest of the body. A replenishing fluid such as Gatorade® may be taken frequently.

HEAT COLLAPSE In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable. For prevention, the individual can become acclimatized or encouraged to remain somewhat active.

HEAT RASHES are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

HEAT FATIGUE Causes temporary impaired physical or mental performance, most commonly when individuals are introduced to new tasks in hot environments. A program of acclimatization – allowing the body to adapt to conditions – and training for work in hot environments is advisable. There is no treatment for heat fatigue except to remove the heat stress before a more serious heat-related condition develops.