

## Heatstroke

Heatstroke is a life-threatening condition that results in very high body temperature and dysfunction of many organ systems.

Heatstroke is the most severe form of heat-induced illness. Two features distinguish heatstroke from other heat disorders: body temperature usually is higher than 104° F, and symptoms of brain damage develop. Heatstroke may occur when a person is exerting himself in extreme heat or is in a closed, hot environment. For example, heatstroke can develop during prolonged periods of hot weather when people stay in rooms that are not air-conditioned. Older people and young children are most vulnerable to heatstroke.

Heatstroke occurs because the body cannot lose heat rapidly enough in extreme heat. Because the body cannot cool itself, body temperature continues to rise rapidly to dangerously high levels. Certain skin disorders and certain drugs increase the risk.

Heatstroke can temporarily or permanently damage vital organs, such as the heart, lungs, kidneys, liver, and brain. The higher the temperature, especially when higher than 106° F, the more rapidly problems develop. Death may occur.

### Symptoms and Diagnosis

Heatstroke typically develops in older, sedentary people living in poorly ventilated rooms during a heat wave. Heatstroke may develop slowly over hours to days or quickly, especially in people exerting themselves in hot, humid environments. Dizziness, light-headedness, weakness, fatigue, headache, blurred vision, muscle aches, nausea, and vomiting (which are also symptoms of heat exhaustion) are common warning symptoms.

During heatstroke, the skin becomes hot, flushed, and dry. Sweating may not occur despite the heat. A person may become confused and disoriented and may have seizures or lapse into a coma. The heart rate and breathing rate increase. The pulse rate is usually rapid. The blood pressure may be high or low. Body temperature usually exceeds 104° F and may be so high that it exceeds the markings on a typical thermometer.

### Treatment

The body must be cooled immediately. While awaiting transportation to the hospital, a person should be wrapped in cold, wet bedding or clothing; immersed in a lake, stream, or cool bathtub; or cooled with ice. At the hospital, body cooling is usually accomplished by removing the clothes and covering the

exposed skin with water or ice. To speed evaporation and body cooling, a fan may be used to blow air on the body. Body temperature is measured frequently, often constantly. Cooled fluids may be given intravenously. To avoid overcooling, cooling is stopped when the body temperature is reduced to about 102° F.

Seizures or coma may also need treatment. Heatstroke is best treated in an intensive care unit of a hospital. After recovery, body temperature may fluctuate abnormally for weeks. The brain may not fully recover, leaving a person with personality changes, clumsiness, or poor coordination.