HEAT STROKE

Heat stroke is the most critical form of heat-related illness and is a life-threatening emergency. It results from excessive, intense exposure to a warm environment, in which lack of perspiration inadequately lowers body temperature.

When body temperature rises slightly, heat is removed through the skin. Blood vessels near the skin dilate to carry warm blood to the surface where heat then escapes and the body cools. Diaphoresis also cools the body; however, it does so to a much greater extent. At the onset of heat stroke, perspiration ceases because the body fluid levels are low. When this occurs, the body cannot cool itself effectively, and the temperature rapidly escalates. Heat stroke results when the body systems are overwhelmed by heat and begin to stop functioning properly.

Heat stroke can strike at any time to anyone; however, some are at higher risk than others. Risk factors include strenuous activity outdoors or in poorly cooled areas, extremes of age, previous heat stroke, respiratory or cardiovascular disease and other conditions that cause poor circulation, as well as diuretic use.

As with many illnesses, individuals may experience varying symptoms. The most common symptoms of heat stroke include elevated body temperature (106° F), red, hot, dry skin, progressive loss of consciousness, tachycardia, weak pulse, tachypnea, shallow breathing, headache, dizziness and hallucinations. Without prompt care, the patient's circulatory system begins to fail, leading to inadequate organ perfusion, multiple organ system failure and, eventually, death.

It is important for the casualty to be cared for immediately, as heat stroke can cause permanent damage or death. There are some immediate first aid measures one can take while waiting for help to arrive. First, remove the patient from the hot environment and administer cool liquids to drink. (Alcohol and caffeine can hinder the body's temperature-regulating mechanism and, therefore, should be avoided.) The individual should not be allowed to drink too quickly, however. While sweating, both water and electrolytes are lost through the skin. If water is replaced too quickly, electrolyte abnormalities can persist and cause added injury.

Next, remove any tight-fitting clothing from the person. This can be accompanied by cooling the body by any means necessary. Applying cool wet towels to the patient's skin and fanning the patient will help increase evaporation. If ice packs are the only cooling agents available, place them on areas such as the person's wrists, ankles, underarms, neck and groin to cool the large blood vessels.

The easiest way to prevent heat stroke is to avoid being outside during the time of day when temperatures are most intense. If this is unavoidable, activity level should be changed according to the temperature and frequent breaks taken. Dressing appropriately and drinking large amounts of fluid can also reduce the risk of developing heat stroke.