



Heat Illness

Heat illness is a term which refers to a group of conditions which occur when the body is heated at a high rate and cannot cool itself fast enough. When a young athlete who has a mild heat illness does not stop exercising and move to a cooler environment, they are at high risk for developing severe heat illness.

The types of heat illness include:

- **Heat Stress:** Body temperature is normal but an affected individual is uncomfortable and exercise performance is decreased.
- **Heat exhaustion:** An individual experiences fatigue and cannot perform well because his or her body temperature is too high.
- **Heat stroke:** This is the most severe form of heat illness. Heat stroke is a medical emergency resulting from a body temperature high enough to cause damage to cells in the body, including the brain, muscles, liver, kidney and heart. Heat stroke can lead to permanent injury or death.

Causes

As it becomes hotter and more humid, people are at increased risk for heat illness. In extremes high temperature and humidity, heat illness can occur even without activity. Heat illness most often occurs when an athlete is exercising vigorously outdoors for too long in conditions that they are not used to. Other factors that predispose to heat illness include being dehydrated, attempting to play a sport at a high level without proper conditioning, and wearing heavy clothing which does not allow sweat to evaporate easily, such as the protective gear in football.

Signs & Symptoms

Heat exhaustion can cause muscle cramping, feeling faint, headache, dizziness, chills, thirst, nausea, vomiting and profuse sweating due to elevated body temperature. Heat stroke occurs when body temperature has risen to above 104 degrees and the body is not able to cool fast enough. An individual with heat stroke is confused or delirious with flushed, dry, skin. Heat stroke causes severe dehydration. Some patients with heat stroke pass out or have a seizure.

Diagnosis

A medical professional can usually diagnose heat illness based on the patient's symptoms and physical exam. Taking a temperature at the time helps confirm the diagnosis. Laboratory tests often help guide treatment.

Treatment

Whenever there is a concern for heat illness, the young athlete should immediately stop all activities and be taken to a cooler place in the shade or indoors. Patients should also be given cool liquids if they are able to drink. If there are any signs that the individual is confused or 'out of it,' they need immediate medical attention. All unnecessary clothing should be removed. In more severe cases, intravenous fluids, immersion in ice water in order to bring the temperature down, and close monitoring in a hospital may be needed.



Prevention

Heat illness can be prevented by avoiding exposure to intense heat and with proper acclimatization. It can take two weeks for a body to adapt to heat and develop mechanisms to counteract it, so until then athletes should exercise daily at 50-70% of maximum effort in hotter weather, gradually increasing the time spent in the heat. Athletes should have frequent breaks (every 15-20 minutes) to drink water or sports drinks. Athletes should wear light, loose clothing and take frequent breaks in the shade.

If possible during hot days, events should be scheduled for early morning or evening when it is cooler. Coaches and event organizers should be prepared to cancel sporting events in the event of extreme heat and/or humidity.