

Heat Injury

Identify and treat

There is a wide spectrum of symptoms related to heat exposure ranging from minor with simple heat rash and cramps to the most severe with a heat stroke, which can be rapidly life threatening if not treated.

Background

Air temperature above 95F is when to start being more aware. The higher the temperature and the longer the exposure increase the risk of heat injury. Children have a lower exercise tolerance. Heat injury is the third leading cause of death among American athletes. If treated early, the mortality rate is still 10-15%. If treated late, the mortality increases to 80%.

Symptoms

Confusion	Difficulty Speaking	Seizures
Hallucinations	Listlessness	Irritability
Dry Mouth and Tongue	No Tears when crying	High Fever
High body temp (>105.8F)	Fast Heart Rate	

Heat Cramps

Characterized by painful muscle spasms especially in the hamstring, shoulders and calves. It may feel like a mass in the muscle. You should remove the athlete from the high heat environment. You can remove unnecessary clothing. Try to stretch the cramped muscles and provide oral rehydration with electrolytes (ie gatorade)

Heat Exhaustion

The athlete's temperature is still typically below 104F. They are still able to sweat. The athlete may appear pale. Typical symptoms include dizziness, nausea, vomiting, headache, fatigue or possibly fainting. These athletes need to be placed

in a cool environment and allow to rest. You should try to elevate there legs, remove unnecessary clothing and hydrate. More severe cases may require IV fluids. They should be watched closely until the symptoms completely resolve.

Heat Stroke

These athletes may have a temperature over 106F. They will have mental status changes typically including some form of confusion. They may have trouble with coordination, bizarre behavior, agitations, seizures or decreased responsiveness. Classically the skin is warm and dry, but not always. In sports, sometimes they will have profuse sweating. This is a true medical emergency and is time dependent. Call 911. They need their body temperature immediately lowered. Immediately place in a cool environment and remove all unnecessary clothing. Lay them down. You can apply ice packs to the neck, groin and arm pits. Spray with tepid water and use fans. Try to avoid shivering.

Prevention

Maintain adequate hydration	Be aware of extreme heat	Avoid drugs/alcohol in extreme heat
Modify physical activity	Acclimatization over time	Drink even if not thirsty
Remove football helmets at frequent breaks	Organize cooling activities and breaks	Recognize signs and symptoms

References:

Ballarin, Daniel, MD. Heat-Related Illness. Pepid, LLC

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