

Heat injury

Heat Injury and Heat Exhaustion

There are many types of heat injury, ranging from mild heat cramps to life-threatening heat stroke.

Cause

When we exercise, our bodies cool off by sweating. As we perspire, we lose necessary body fluids. If we do not replace these fluids, we become dehydrated. This makes it difficult to sweat and cool down, which can result in a heat injury.

Mild Heat Injury

1. Heat Cramps

Heat cramps are painful cramps in the stomach, arm, and leg muscles. These cramps are caused by not replacing salt and fluids during intense, prolonged exercise in the heat.

treatment for Heat Cramps

- Stop exercise activity
- Gently stretch affected muscles
- Drink cool water or an electrolyte solution (low in sugar)
- For severe symptoms, treat as heat exhaustion (see below)

Moderate Heat Injury

1. Heat Syncope

Weakness, fatigue, and fainting are the chief symptoms of heat syncope. They are typically brought on by exercising hard in the heat. Too much salt and water are lost through perspiration, and are not replaced. Without treatment, heat syncope can put you at risk for heat stroke.

2. Heat Exhaustion (Water depletion)

Heat exhaustion is brought on by heavy sweating and results in extreme weight loss. As heat exhaustion sets in, perspiration decreases, and skin and body temperatures rise. Core body temperature typically rises to 104 degrees F. Additional signs of heat exhaustion include excessive thirst, weakness, headache, and sometimes unconsciousness.

3. Heat Exhaustion (Salt depletion)

Common signs of heat exhaustion due to salt depletion are nausea and

vomiting, frequent muscle cramps, and dizziness. Core body temperature is typically up to 104 degrees F.

Treatment for Heat Syncope and Heat Exhaustion

- Move the person to a cool, shaded area
- Remove tight clothing
- Give fluids, if the athlete is conscious
- Apply active cooling measures, such as a fan or ice towels, if the core temperature is elevated
- Refer to a physician to assess the needs of fluid/electrolyte replacement and further medical attention, especially if nausea and vomiting are present

Severe Heat Injury

Heat Stroke

Heat stroke is the most severe form of heat injury. When suffering from heat stroke, your body cannot cool itself. This is an acute medical emergency.

Heat stroke is medically defined as core body temperature greater than 104 degrees F. Organ system failure can result from this high of a body temperature.

Nausea, seizures, and confusion or disorientation often occur with heat stroke. Unconsciousness and coma are possible.

Heat stroke may occur with no preceding signs of heat injury. It can also occur as a progression from heat syncope and heat exhaustion. Again, this is a medical emergency.

Treatment of Heat Stroke

- Call 119 immediately for emergency services
- Monitor core body temperature and lower it as quickly as possible
- Decrease core body temperature through immersion in an ice bath
- Remove as much clothing as possible
- Apply ice packs to the armpits, groin, and neck areas
- Continue cooling efforts until an emergency crew arrives

Prevention

There are many ways to reduce your risk for heat injury.

General Guidelines

- See a doctor before starting a new exercise activity. Discuss recent illnesses or medications that could cause dehydration. Cardiac or pulmonary conditions can also contribute to heat injury.

- Take time to adapt to a new activity or climate. Coaches should plan pre-season conditioning programs. These should be held during weather conditions similar to a typical practice.
- Increase the intensity and duration of your exercise program gradually. If you participate in sports that require protective equipment, avoid wearing it at the start of training.

Edited by NDU medical office

Reference: American Academy of Orthopaedic Surgeons
<http://orthoinfo.aaos.org/topic.cfm?topic=a00319>