Fact Sheet: Heat Exhaustion/Stroke

Symptoms of heat exhaustion generally develop after prolonged periods of outdoor activity in high heat. If left untreated, heat exhaustion may turn into a more serious condition called heat stroke, which can be life threatening. Heat stroke is defined as having a body temperature of 104°F or higher, not related to fever. At this point, your body cannot regulate temperature, as sweating has stopped.

Symptoms

- **Heat Exhaustion**
  - Cool, moist skin with goose bumps when in the heat
  - Heavy sweating
  - Dizziness
  - Fatigue
  - Weak, rapid pulse
  - Low blood pressure when standing
  - Muscle cramps
  - Nausea
  - Headache

- **Heat Stroke**
  - High body temperature
  - Nausea
  - Sweating has stopped
  - Rapid pulse
  - Rapid breathing
  - Flushed skin
  - Loss of consciousness
  - Confusion
  - Skin hot, dry to the touch
  - Shock

Prevention

- Look up the heat index prior to planned work.
  - At a heat index higher than 91°F monitor for heat exhaustion and plan for regular rest/water breaks.
  - Consider rescheduling work when the heat index is above 103°F.
  - Do not perform work if the heat index is over 115°F.

- Schedule work for cooler parts of the day.

- Use a buddy system to monitor for symptoms throughout the work.
To prevent heat exhaustion, drink plenty of fluids. Drink 1 cup of cool water at least every 20 minutes, even if you are not thirsty.

- Wear loose fitting, breathable clothing.
- Take frequent rest breaks preferably in a cool building, but at least in a fully shaded area. More frequent, shorter periods of exposure to heat are better than fewer, longer exposures.

- Shorten work periods and increase rest periods:
  - As temperature rises
  - As humidity increases
  - When there is no air movement
  - When protective clothing or gear is worn
  - For more strenuous work

- Slowly acclimatize personnel to working in hot weather by starting with less strenuous tasks and more frequent breaks.

- Consider that some health conditions can put workers at greater risk of heat-related illness. These include diabetes, kidney and heart problems, pregnancy, and being overweight. Encourage personnel to consult with physician about how their health may be affected by expected working conditions.

**First Aid Treatment**

Abnormal thinking or behavior, slurred speech, seizures or loss of consciousness are signs of a medical emergency. Call 911 immediately, cool the worker with water or ice and stay with them until help arrives.

- Remove the person from the heat source, preferably into a cool building, but at least to a fully shaded area.
- Remove excess clothing.
- Cool the patient with whatever means are available.
- Immerse the patient in a cool tub of water or a cool shower, sponge with cool water, or place cold, wet towels on the person's head, neck, armpits and groin.
- Do not cover their entire body or torso with wet towels/clothing, as this may prevent efficient heat loss.
- If they are able to drink, give them cool water.
- Seek emergency medical attention if you suspect someone is experiencing heat stroke, as heat stroke can cause damage to the liver, kidneys, and affect blood clotting.

**References and Additional Resources**

- OSHA [Heat Illness Prevention](https://www.osha.gov/SLTC/heatillness/prevention.html)
- Adapted from [Heat Exhaustion/Stroke Fact Sheet](https://essr.umd.edu/about/research-safety/field-research-safety/planning), by University of Maryland: Department of Environmental Safety, Sustainability & Risk with permission.