

Sports Medicine – Heat Illness (Procedures)

Summary

CSU Athletics procedures for the treatment for student athletes dealing with heat illnesses. Policy includes definition of different forms of heat illness, explanation of symptoms, and treatment for each.

Purpose

To provide guidance on treatment of heat illnesses.

Procedure

Procedures:

Exercise-Associated Muscle (Heat) Cramps:

- **Definition:** Presents during or after intense exercise sessions as an acute, painful, involuntary muscle contraction.
- **Cause:** Fluid deficiencies (dehydration), electrolyte imbalances, neuromuscular fatigue.
- **Signs & Symptoms:** Dehydration, thirst, sweating, transient muscle cramps, fatigue.
- **Treatment:** Stop activity, replace lost fluids with sodium-containing fluids, and begin mild stretching with massage or muscle spasms.

Heat Syncope:

- **Definition:** Can occur when a person is exposed to high environmental temperatures; usually occurs during the first 5 days of acclimatization before the blood volume expands or in persons with heart disease or those taking diuretics; occurs after standing for long periods of time, immediately after cessation of activity, or after rapid assumption of upright posture after resting or being seated.
- **Cause:** Peripheral vasodilation, postural pooling of blood, diminished venous return, dehydration reduction in cardiac output, cerebral ischemia.
- **Signs & Symptoms:** Dehydration, fatigue, tunnel vision, pale or sweaty skin, decreased pulse rate, dizziness, lightheadedness, fainting.
- **Treatment:** Move the athlete to a shaded area, monitor vital signs, elevate legs above the head, rehydrate.

Exercise (Heat) Exhaustion:

- **Definition:** Inability to continue exercise associated with and combination of heavy sweating, dehydration, sodium loss, and energy depletion; difficult to distinguish from exertional heat stroke without measuring rectal temperature.

- **Cause:** Hot and humid conditions
- **Signs & Symptoms:** Normal or elevated core-body temperature, dehydration, dizziness, lightheadedness, syncope, headache, nausea, loss of appetite, diarrhea, decreased urine output, persistent muscle cramps, profuse sweating, cool clammy skin, weakness, hyperventilation.
- **Treatment:** Remove excess clothing to increase the evaporative surface and facilitate cooling, with fans, ice towels, ice bags, remove athlete to the shade or cool environment, replace fluids.

Exertional Heat Stroke:

- **Definition:** Elevated core temperature (104°F) associated with signs or organ system failure due to hypothermia, central nervous system neurological changes are often the first marker of exertional heat stroke; condition is life threatening and can be fatal unless promptly recognized and treated.
- **Cause:** Occurs during physical activity when temperature regulation system is overwhelmed due to excessive endogenous heat production or inhibited heat loss; due to overwhelming of organ tissues that may induce malfunction of the temperature-control center in the brain, circulatory failure can be fatal and lead to death.
- **Signs & Symptoms:** High core body temperature (>104°F); central nervous system changes: dizziness, drowsiness, irrational behavior, confusion, irritability, emotional instability, hysteria, apathy, aggressiveness, delirium, disorientation, staggering seizures, loss of consciousness, coma; dehydration, weakness, hot and dry skin; tachycardia (100-120 bpm), hyperventilation, vomiting, diarrhea.
- **Treatment:** Activate emergency medical response; lower core-body temperature as quickly as possible; remove clothes and equipment, immerse body in cool pool or tub (aggressive cooling is critical in treatment); monitor vital signs and other signs and symptoms; place ice bags over major vessels (armpit, groin, neck).

Exertional Hyponatremia:

- **Definition:** Low sodium level; can result in death if not treated properly.
- **Cause:** Activity exceeding 4 hours, combinations of excessive fluid intake and inappropriate body water retention or insufficient fluid intake and inadequate sodium replacement.
- **Signs & Symptoms:** Core-body temperature (<104°F), nausea vomiting, extremity swelling, low sodium level, progressive headache, confusion, significant mental compromise, lethargy, altered consciousness, apathy, pulmonary edema, cerebral edema, seizures, coma.
- **Prevention:** Matching fluid intake with sweat and urine loss, rehydrate with fluids containing sufficient sodium.
- **Treatment:** Immediate transfer to emergency facility via emergency medical response; do not administer fluids until a physician is consulted.

Related USG Policy

N/A

Last Update

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Responsible Authority

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