

Bayfield-Ashland Counties EMS TOXINS / ENVIRONMENTAL Environmental	EE-6 HYPERTHERMIA and HEAT EXPOSURE
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SYMPTOMS: Minor to very painful muscle cramps, headache, nausea, vomiting, elevated temperature.

DEFINITIONS:

- A. **Heat cramps** are minor muscle cramps usually in the legs and abdominal wall. Patient temperature is normal.
- B. **Heat exhaustion** has both salt and water depletion usually of a gradual onset. As it progresses tachycardia, hypotension, elevated temperature, and very painful cramps occur. Symptoms of headache, nausea and vomiting occur. Heat exhaustion can progress to heat stroke.
- C. **Heat stroke** occurs when the cooling mechanism of the body (sweating) ceases due to temperature overload and/or electrolyte imbalances. Patient temperature is usually greater than 104°F. When no thermometer is available, it is distinguished from heat exhaustion by altered level of consciousness.
- D. **Heat syncope** is a transient loss of consciousness with spontaneous return to normal mentation attributable to heat exposure.
- E. **Heat edema** is dependent extremity swelling caused by interstitial fluid pooling.

ASSESSMENT and TREATMENT

ALL LEVELS

- 1. Perform primary assessment.
- 2. Manage airway as indicated.
- 3. Move victim to a cool area and shield from the sun or external heat source.
- 4. Remove as much clothing as is practical; loosen any restrictive garments.
- 5. Perform secondary assessment. Obtain and monitor vital signs (pulse, respirations and blood pressure) including temperature, appearance of skin (flushed, hot, dry, sweaty, first or second degree burns from sun exposure) and signs of poor perfusion or shock.
- 6. Document environmental conditions and situational history.
- 7. If alert and oriented, give small sips of cool liquids.
- 8. If temperature is greater than 104°F (40°C) or if altered mental status is present, begin active cooling:
  - a. Mist the exposed skin continually with tepid water while fanning the victim (most effective).
  - b. Using truncal ice packs are acceptable, but less effective than evaporation.
  - c. DO NOT apply wet clothes or wet clothing, as they may trap heat and prevent evaporative cooling.
  - d. Continue cooling efforts until the patient's temperature is less than 102.2°F (39°C) and the patient demonstrated improvement in mental status.
- 9. Transport all patients suffering from life threatening heat illness to the hospital.

EMR-O; EMT-R

- 10. If altered mental status, check blood glucose level. Treat based on [Hypoglycemia guideline \[M-9\]](#).

EMT-O

- 11. Place on ECG cardiac monitor.

AEMT-R

- 12. Consider isotonic IV/IO fluid bolus 20ml/kg normal saline.

AEMT-O

- 13. Consider fluid bolus 20ml/kg lactated Ringer's as appropriate.

INT-R

- 14. Monitor for arrhythmia and cardiovascular collapse ([Cardiovascular guidelines \[C-1,2 and 4\]](#)).