



# Portage County EMS Patient Care Guidelines



## Heat Emergencies

**Note:**

- Consider other causes of hyperthermia besides environment exposure, including:
  - Neuroleptic malignant syndrome (NMS): patients taking antipsychotic medications
  - Sympathomimetic overdose: cocaine, methamphetamine
  - Anticholinergic toxidrome: overdose (“Mad as a hatter, hot as a hare, blind as a bat, red as a beet”) common with ODs on psych meds, OTC cold medications, Benadryl, Jimson weed, etc.
  - Infection: fever (sepsis)
  - Thyrotoxicosis: goiter (enlarged thyroid)
- Heat emergencies can cause seizures and cardiac arrhythmias. Refer to appropriate *Guidelines*.

Problem	Cause	Core Temperature	Clinical Findings and History
Heat Cramps	Dehydration; Electrolyte imbalances	99 – 101.3 F	Most common in children and athletes Severe localized cramps in abdomen or extremities Normal vital signs Usually occur suddenly during or after strenuous physical activity
Heat Exhaustion	Inadequate fluid intake and excessive fluid loss	99 – 104 F	General fatigue, weakness, anxiety, intense headaches, profuse sweating, nausea and vomiting, and limited to no urine output
Heat Stroke	Dangerous Core Temperature	> 105 F	<b>Altered mental status</b> , decreased level of consciousness, skin color temperature and moisture is not a reliable finding, increased pulse and respirations, hypotension,
Hyponatremia	Electrolyte depletion or dilution		Inadequate food or electrolyte intake, excessive water intake, frequent urination, altered mental status, ataxia, nausea and vomiting, headache

Priorities	Assessment Findings
Chief Complaint	Variable
LOPQRST	What led up to this? Where was the patient found? Ambient temperature? Physical activities?
AS/PN	Consider other causes of altered mental status—i.e. drug use, hypoglycemia, head injury, toxin inhalation or ingestion.
AMPL	Check for medications that could be contributory (beta blockers, psychiatric medications, sedatives, narcotics or barbiturates). Inquire about fluid consumption and frequency of urination
Initial Exam	Check ABCs and correct immediately life-threatening problems.
Detailed Focused Exam	<b>Vital Signs:</b> BP, HR, RR, Temp, SpO <sub>2</sub> If possible, obtain an oral or rectal temperature in the field with a digital thermometer. <b>General Appearance:</b> overdressed for environment, sweating, evidence of trauma? <b>Skin:</b> pale, cool clammy OR hot, red, dry OR hot, red, moist <b>Lungs:</b> breath sounds <b>Heart:</b> Rate and rhythm?

	<b>Neuro:</b> Loss of coordination, impaired judgment, altered mental status, decreased level of consciousness; seizures
Data	SpO <sub>2</sub> , Blood glucose, 12-lead EKG, ETCO <sub>2</sub>
Goals of Therapy	<ol style="list-style-type: none"> <li>1. End the heat challenge and increase heat loss from conduction, convection, radiation, and evaporation</li> <li>2. Support ABCs</li> </ol>
Monitoring	SpO <sub>2</sub> , Cardiac monitoring, capnography

**EMERGENCY MEDICAL RESPONDER/  
EMERGENCY MEDICAL TECHNICIAN**

- End the heat challenge. Remove the patient from the hot environment into an area with shade, air conditioning, air movement, etc.
- Protect the patient from hot surfaces, i.e. running track or asphalt road
- Remove excessive clothing
- No food or fluids if the patient has altered consciousness, nausea, vomiting, or is otherwise not in control of his/her own airway
- Administer oxygen 2 – 4 LPM per nasal cannula if SpO<sub>2</sub> < 94%. Increase flow and consider non-rebreather mask to keep SpO<sub>2</sub> > 94%
- Begin rapid cooling
  - If possible, aggressively mist patient with tepid water and fan (preferred method)
  - Apply ice packs in neck, armpits, and groin
  - As a last resort, cover patients with cool, wet sheets
  - Prepare for rapid transport
- Additional heat stroke considerations
  - Do not delay transport to begin cooling patient on-scene
  - Start cooling enroute to the hospital
- Obtain blood glucose. If < 60 mg/dL refer to *Altered Level of Consciousness Guidelines*

*Give a status report to the ambulance crew by radio ASAP.*

**ADVANCED EMERGENCY MEDICAL TECHNICIAN/  
INTERMEDIATE/ PARAMEDIC**

- IV/IO normal saline
  - 500 – 1000 mL bolus for heat exhaustion or heat stroke patients
  - Consider using cooled IV fluids
- Consider a second IV/IO.
- Do not delay transport to initiate an IV. Peripheral IVs may be quite difficult to start in a diaphoretic patient.
- No oral fluids without electrolyte replacement (i.e. Gatorade, PowerAde)

*Contact Medical Control for the following:*

- Additional fluid orders

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