

TEMPERATURE AND ENVIRONMENTAL EMERGENCIES

UPDATED 3/2025

ALL PROVIDERS / EMT

- ☐ Scene and patient management
 - Remove patient from hot or cold environment, when possible
 - Focused history and physical exam
 - Body temperature and blood glucose assessment.
 - Assess level of consciousness; apply the *Altered Mental Status Guideline* if applicable.
 - Assess for underlying causes; medications, toxins, CNS lesions or other medical conditions.
- ☐ Cardiac monitor, ETCO₂, and pulse oximetry monitoring
- ☐ **Treatment Plan**
 - **Heat Related**
 - Temperature elevation **WITHOUT** altered mental status (**Heat Exhaustion**)
 - Slow cooling with ice packs, wet towels, and/or fans to areas near carotid, femoral, brachial arteries.
 - If the patient is alert and not nauseated, oral rehydration with water or balanced electrolyte solution.
 - Severe muscle cramps may be relieved by gentle stretching of the muscles.
 - Temperature elevation **WITH** altered mental status (**Heat Stroke**)
 - Aggressive cooling to unclothed patient utilizing fine mist water spray and fans in conjunction with ice packs to groin and axilla while maintaining modesty (NOT Recommended for children and infants)
 - Aggressive cooling should be stopped if shivering begins.
 - Monitor closely for dysrhythmia, recognize and treat with the appropriate *Cardiac Arrest or Cardiac Chest Pain Guideline*
 - Room temperature IV fluids should be administered for both heat exhaustion and heat stroke
 - Benzodiazepines may be used to control shivering
 - **Cold Related**
 - Protect patient from further heat loss (application of blankets, removal of wet clothing, warm environment, etc.).
 - Suspicion of cardiac arrest in cold environment, assess for 30-45 seconds to confirm pulselessness.
 - Measure body temperature and treat accordingly
 - **Severe: <86°F (30°C)**
 - Use active external rewarming (heated oxygen, warm packs to neck, armpits, groin, etc.)
 - Administer warm IV fluids
 - Cardiac arrest: Chest compressions and ventilations.
 - Limit defibrillation attempts to 3 and no external pacing.
 - The likelihood of successful defibrillation improves as the patient is warmed.
 - Pediatric cardiac arrest due to hypothermia (temperature <30 C/86 F):
 - Direct transport to Primary Children's Medical Center and **do NOT rewarm** this patient.
 - Adult cardiac arrest due to hypothermia (temperature <30 C/86 F):
 - Direct transport to University of Utah Medical Center or Intermountain Medical Center and **do NOT rewarm** this patient.
 - Handle the patient gently during transport, rough movement may precipitate dysrhythmias.
 - **Moderate: 86-93°F (30-34°C)**
 - Use warm packs to neck, armpits, and groin
 - Warm IV fluids
 - **Mild: >93°F (34°C)**
 - Warm with blankets, warm environment, etc.
 - Frostbite precautions – Do not rub or use dry external heat. Re-warm with 40°C water if possible.
 - Warm IV fluids

☐ **Key Considerations**

- Avoid refreezing of cold extremities. If refreezing cannot be avoided during transport, do not start the thawing process.

ADULT

PEDIATRIC

Pediatric weight-based dosing should not exceed Adult dosing.

AEMT

AEMT

- ☐ Advanced airway, vascular access and fluid therapy

Heat Emergencies

- Cool fluid therapy: 500 – 1000 cc NS/LR bolus

Cold Emergencies

- Warm fluid therapy: 500 – 1000 cc NS/LR bolus

- ☐ Advanced airway, vascular access and fluid therapy

Heat Emergencies

- Cool fluid therapy: 20 mL/kg NS/LR bolus

Cold Emergencies

- Warm fluid therapy: 20 mL/kg NS/LR bolus

PARAMEDIC

PARAMEDIC

☐ **Cold emergencies**

- Withhold anti-arrhythmic meds until temperature >86°F (30°C)
- Warm fluid therapy: 500-1000cc NS/LR bolus

☐ **Heat Emergencies**

- Cool fluid therapy: 500 – 1000 cc NS/LR bolus

☐ **Benzodiazepines for shivering:**

- **Midazolam**
 - **IN/IM/IV/IO – 5 mg**, may repeat once in 5 minutes, if needed. Total max dose: 10mg
- **Diazepam**
 - **IV/IO – 5 mg**, may repeat every 5 minutes, if needed. Total max dose: 20mg
 - **Intramuscular (IM) – 10 mg**, may repeat once in 10 minutes, if needed. Total max dose: 20 mg (IM not preferred unless no other options)
- **Lorazepam**
 - **IV/IO/IM – 1-2mg**, may repeat every 5 minutes, if needed. Total max dose: 4mg

☐ **Cold emergencies**

- ☐ Withhold anti-arrhythmic meds until temperature >86°F (30°C)
- ☐ Warm fluid therapy: 20mL/kg NS/LR bolus

☐ **Heat Emergencies**

- ☐ Cool fluid therapy: 20mL/kg NS/LR bolus

☐ **Benzodiazepines for shivering:**

- ☐ **Midazolam**
 - **IN/IM: 0.2 mg/kg** (max 5 mg), may repeat once in 5 minutes, if needed. Total max dose: 10 mg
 - **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat once in 5 minutes, if needed. Total max dose: 10 mg
- ☐ **Diazepam**
 - **IV/IO - 0.1 mg/kg** (max 5 mg), may repeat every 5 minutes, if needed. Total max dose: 10 mg
 - **Intramuscular (IM): 0.2 mg/kg** (max 10 mg), may repeat every 10 minutes, if needed. Total max dose: 20 mg (IM not preferred unless no other options)
- ☐ **Lorazepam**
 - **IV/IO/IM – 0.1mg/kg** (max 2 mg) may repeat every 5 minutes, if needed. Total max dose: 4 mg.