

Hyperthermia, Heat Injury, and Heatstroke

Heat injuries are a significant cause of morbidity and occasional mortality. Rising temperatures, humid environments, and comorbid conditions all contribute to the risk.

HEATSTROKE

- Imbalance of heat generation vs heat clearance, defined as temperature $>40^{\circ}$ with neurologic manifestations
- Two types include nonexertional (classic) and exertional

EVALUATION

1. Evaluate for triggers and comorbid conditions
2. Basic laboratory assessment to include toxicology screen
3. Exclude other conditions and mimics



TREATMENT

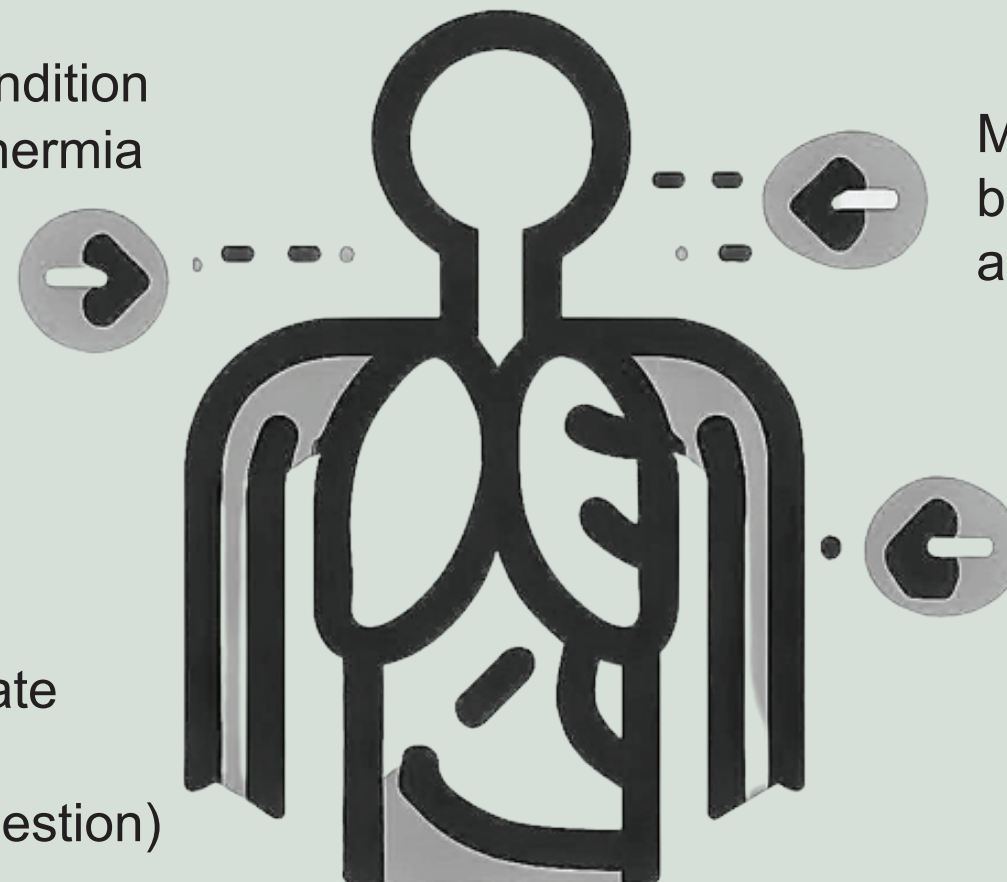
- Continuous temperature monitoring
 - Reduce core temperature to 38° as rapidly as possible, and stop active cooling at 38° - 39°
1. Surface cooling \gg Cooling rate of about 0.1°C per minute
 2. Internal cooling \gg Refrigerated crystalloid: Each liter of chilled crystalloid cools the patient by roughly 1°C



**Avoid use of antipyretic agents*

Heatstroke is a potentially fatal condition that occurs in the setting of hyperthermia (core temperature typically $>41^{\circ}$)

Diagnostic work-up includes accurate assessment of core temperature and reversible triggers (ie, toxic ingestion)



Multimodal cooling strategy should be implemented with both internal and surface cooling approaches

Preventative measures should be implemented, such as activity modification, ensuring adequate hydration for those at risk