SPECIAL ARTICLE

Society of Critical Care Medicine
The Intensive Care Professionals

2025 SCCM Guideline for the Treatment of Heat Stroke

- Heat-related illness is a leading cause of weather-related fatalities that are increasing in prevalence.
- Heat stroke, the most severe form of heat-related illness, is defined as a core temperature >40°C with central nervous system symptoms and can lead to significant morbidity and mortality.

Methods: An international team of multidisciplinary clinicians was formed to develop evidence-based guidelines, using GRADE methodology, on the management of heat stroke.

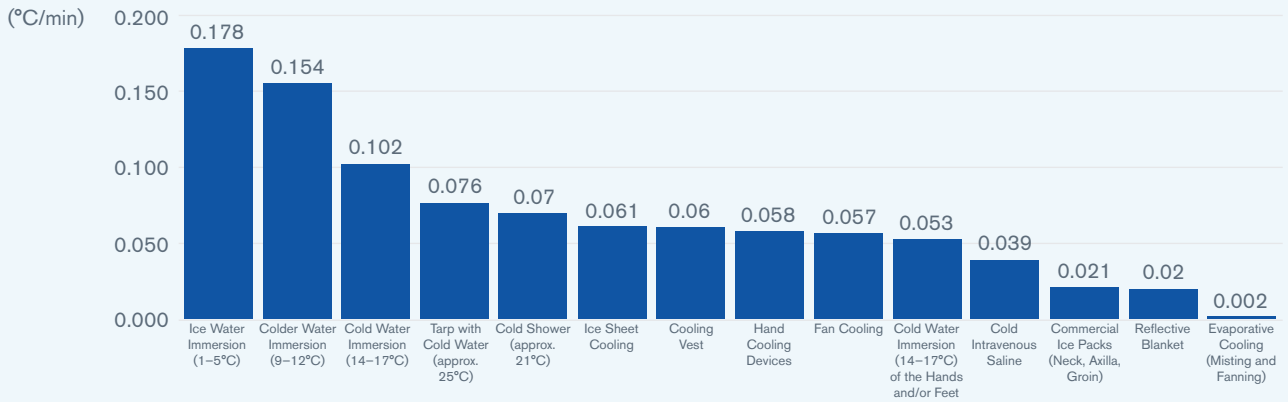
PICO: 1. Cooling modalities | 2. Medications to reduce temperature

1. We recommend active cooling methods over passive cooling in patients with heat stroke.
Strong recommendation; very low certainty of evidence

- Prioritize cooling methods that achieve the most rapid rate of cooling which is ice- or cold-water immersion.
  Good Practice Statement
- Use similar cooling strategies for either classic or exertional heat stroke.
  Good Practice Statement
- Prioritize cooling modalities that achieve a cooling rate ≥0.155°C/min and reach the target temperature within 30 min from recognition.
  Good Practice Statements

2. We recommend against the use of dantrolene in patients with heat stroke.
Strong recommendation; very low certainty of evidence

- Avoid routine use of acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDS) and salicylates for temperature reduction.
  Good Practice Statement
- Prophylactic antibiotics or prophylactic antiseizure medications should only be used in the context of research.
  Only in the Context of Research Statement



The figure above displays the weighted mean cooling rate (°C/min) for each available cooling method, from fastest (left) to slowest (right).

The table below displays each cooling method and the final core temperature achieved with that cooling method after 30 minutes for a given initial core temperature. Target final core temperatures (<39 °C) are colored green and near-target final core temperatures (39-40 °C) are colored yellow.

	Initial Core Temperature (°C)						
	40.0	40.6	41.1	41.7	42.2	42.8	43.3
Cooling Method	**Final Core Temperature (°C)**						
Ice Water Immersion (1-5°C)	34.7	35.3	35.8	36.4	36.9	37.5	38.0
Colder Water Immersion (9-12°C)	35.4	36.0	36.5	37.1	37.6	38.2	38.7
Cold Water Immersion (14-17°C)	36.9	37.5	38.0	38.6	39.1	39.7	40.2
Tarp with Cold Water (approx. 25°C)	37.7	38.3	38.8	39.4	39.9	40.5	41.0
Cold Shower (approx. 21°C)	37.9	38.5	39.0	39.6	40.1	40.7	41.2
Ice Sheet Cooling	38.2	38.8	39.3	39.9	40.4	41.0	41.5
Cooling Vest	38.2	38.8	39.3	39.9	40.4	41.0	41.5
Hand Cooling Devices	38.3	38.9	39.4	40.0	40.5	41.1	41.6
Fan Cooling	38.3	38.9	39.4	40.0	40.5	41.1	41.6
Cold Water Immersion (14-17°C) of the Hands and/or Feet	38.4	39.0	39.5	40.1	40.6	41.2	41.7
Cold IV Saline	38.8	39.4	39.9	40.5	41.0	41.6	42.1
Commercial Ice Packs (Neck, Axilla, Groin)	39.4	40.0	40.5	41.1	41.6	42.2	42.7
Reflective Blanket	39.4	40.0	40.5	41.1	41.6	42.2	42.7
Evaporative Cooling (Misting and Fanning)	39.9	40.5	41.0	41.6	42.1	42.7	43.2

To convert Celsius to Fahrenheit, multiply by 1.8 and add 32.