

Fireground Rehab

Prehospital goal: To properly manage exertional heat stress and fatigue

Indications: *Company level rehab:* Company level rehab should be implemented after consuming a 30-minute SCBA cylinder or 20 minutes of heavy work without SCBA. Company officers should ensure firefighters consume 10 – 16 ounces of water during the cylinder change prior to returning to the incident. Bottled water should be stored with spare SCBA cylinders to facilitate this process.

Formal rehab: A formal rehab sector should be established when a firefighter has consumed two 30-minute SCBA cylinders, one 45-minute or 60-minute SCBA cylinder, or has been working for 30-40 minutes in turnout gear without SCBA.

Work times are suggestions and should be modified based on temperature and humidity.

Rehab sector goals:

Shelter: Consider the elements. Avoid extremes of heat, cold, or high humidity. If possible, establish the rehab sector out of sight of the incident.

Rest: Most studies have shown that firefighters do not return to baseline temperature after 20-minutes of rehab even with active cooling and rehydration. If manpower allows, extend rehab to 30 minutes or reduce work times before returning to the rehab sector.

Provide hydration 📄

Provide temperature correction 📄

Provide food for long duration incidents

Monitor

Blood Pressure (subject seated)
Pulse (pulse oximeter acceptable)
Oral Temperature 📄

Skin evaluation

Examine the exposed skin for burns, redness, and wounds

Mental status

Individual should be alert and oriented with normal gait and clear speech.



📞 Contact medic command and consider transport for any of the following



Oral temperature greater than 102°F (38.9°C).
Oral temperature greater than 101°F (38.3°C) if other symptoms present
Irregular pulse
Resting pulse greater than 120

Systolic BP > 200 after rehab
Diastolic pressure > 130 anytime
Any signs of mental status change



Any firefighter with an estimated core temperature greater than 103°F (39.4°C) with signs and symptoms of exertional heat illness should immediately receive 1 – 2 liters of 0.9 NS IV and be transported to the emergency department. Consider cold water immersion followed by rapid transport and intravenous fluids for any firefighter with a core temperature over 104°F (40°C). Confirm this temperature rectally if possible

Firefighter may return to the incident if appropriate rehydration has occurred and the following vital sign criteria are met.

- Heart rate < 100
- Systolic BP between 100 and 160
- Diastolic BP < 90
- Oral temperature < 98.6°F (37°C)

Notes:

- **Thermometry**
 - The oral thermometer may underestimate core temperature especially if the subject is drinking fluids. Assume even a high quality thermometer will read 1°C too low.
 - Do not use the only ambulance staged at the incident for rehab
 - *Tympanic, temporal, and forehead sticker thermometers are not recommended for fireground rehab*
- **Hydration:** A typical firefighter will lose 0.5 – 2.0 lb (0.2 – 1.0 kg) during work in turnout gear. Subjects should consume 0.5 to 1.0 liters (16 – 33 oz) of water or sport drink on the scene. Another 0.5 to 1.0 liters (16 – 33 oz) of water or sport drink should be consumed immediately after the incident conclusion. For extended incidents sport drink should be provided. **At a minimum**, provide the subject with 8 – 16 oz. of water or sport drink.
 - Consider providing intravenous fluids for subjects with symptoms of exertional heat illness.
 - 1.5 to 2.0 liters of room temperature fluid should provide 0.5°C reduction in core temperature
 - If available, a rapid infusion of one liter of cold (4°C) saline should provide 1.0°C reduction in core temperature. *Note: Rapid cold saline infusion can be uncomfortable in hyperthermic individuals and should only be used to treat true heat emergencies.*
- **Cooling:** At a minimum, turnout coat and nomex hood should be removed and turnout pants pushed down to the knees while seated in rehab.
 - In hot environments (>90°F or 32°C) or in high humidity employ active cooling (e.g. forearm immersion). Cold towels and misting fans can be used to increase technician comfort but are unlikely to result in significant additional cooling.
 - Do **not** use fans when temperatures exceed 95°F (35°C) as this may inhibit thermoregulation.
 - Do **not** use fine water mist in high humidity (> 70% RH)
 - Passive cooling in moderate temperature (approximately 72°F or 22°C) and low humidity is an efficient means of cooling individuals. Air-conditioned vehicles (e.g. fire apparatus, ambulance, bus) or portable shelters can be used to create an optimal environment.

Quality Indicators

Response to Therapy

Temperature correction

Adverse Effects

Provision of adequate hydration