

Health Impacts of Extreme Heat

Medical condition	Symptom(s)	Causes	Safety tips
Heat cramps	Muscle spasms. Muscles usually affected include the abdomen, calf, thighs, and shoulder muscles. Body temperature normal or elevated core temperature up to 104°F.	Drinking liquid without electrolytes, dehydration, electrolyte deficiency.	Stop all activities, relocate to a cool location, rest and drink electrolyte-containing fluids. Seek medical attention if symptoms persist.
Heat edema	Swelling in the ankles, feet, and hands. Body temperature normal or elevated core temperature up to 104°F.	Occurs in people who are not acclimatized to heat. Increased blood flow to the skin in limbs.	Remove the affected person from the heat. Elevate and apply compressive stockings to the affected limbs.
Heat exhaustion	Profuse sweating, weakness, rapid breathing, dizziness, nausea/vomiting, muscle cramps, normal mentation. Body temperature normal or elevated core temperature up to 104°F.	Drinking liquid without electrolytes, dehydration, electrolyte deficiency.	Stop all activities, relocate to a cool location, rest, and drink electrolyte-containing fluids. It can be difficult to determine if someone has heat stroke and not exhaustion. If symptoms do not quickly improve, or if the person is unable to orally rehydrate, seek medical attention.
Heat rash	Red cluster of pimples, blisters, itching, red rash on the skin that usually occurs on the neck, chest, breast, and/or groin.	Blockage of sweat ducts.	Remove the affected person from heat. Minimize exposure of skin to sun. Keep the affected area dry. Seek medical attention if rash does not improve.
Heat stroke This is a life threatening, adverse effect of exposure to extreme heat.	Oral body temperature of 104°F and above. Often sudden onset of symptoms; confusion or loss of consciousness, rapid and strong pulse, hot, red, and dry skin headache, dizziness, nausea/vomiting.	Body is unable to maintain heat diffusion through the skin. Normal regulation of body temperature is no longer intact. Mortality can be as high as 50%.	Call 911 immediately if you see anyone with these symptoms and have a body temperature of 104°F and above. While waiting for first responders, the affected person should be taken to a cool shady area. Cool the person with immersion in cool water, spraying the person with cool water while fanning the person vigorously, or placing ice packs on neck, axilla, and groin. The person is unlikely to be able to tolerate oral fluids.

Medical condition	Symptom(s)	Causes	Safety tips
Heat syncope	Dizziness, fainting. Body temperature normal or elevated core temperature up to 104°F.	Increased blood flow to the skin resulting in decreased blood flow to the central nervous system.	Lay the affected person gently on the floor and provide lots of fluid. Seek medical attention.
Heat tetany	Respiratory problems, such as breathing difficulty, muscular problems, including spasms or numbness or tingling of muscles. Body temperature normal or elevated core temperature up to 104°F.	Hyperventilation. Respiratory alkalosis.	Remove the affected person from the heat and advise the person to breathe slowly.

Adapted from the following sources:

Bernhardt, J. M., Quinn, L., & Cox, R. (2024). The Heat-Related Illness Screening Tool: A Case Study for Populations at Risk. *Nursing Economic\$, 42*(2), 59–98. <https://doi.org/10.62116/NEC.2024.42.2.59>

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Danzig, R. M., Raunig, J. M., & Acholonu, C. J. (2024). Exertional Heat Illness—From Identifying Heat Rash to Treating Heat Stroke. *Pediatric Annals*, 53(1), e17–e21. <https://doi.org/10.3928/19382359-20231113-04>

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