



LOYOLA UNIVERSITY CHICAGO WEATHER CONDITION GUIDELINES (HEAT AND COLD)

Although OSHA does not have a specific standard that covers working in hot or cold environments, under the [Occupational Safety and Health Act \(OSH Act\) of 1970](#), employers have a duty to protect workers from recognized hazards, including heat and cold stress hazards that could cause potential harm in the workplace.

REFERENCES:

[Winter Weather - Cold Stress | Occupational Safety and Health Administration \(osha.gov\)](#)

<https://www.mayoclinic.org/diseases->

HEAT:

Occupational risk factors for heat illness include heavy physical activity, warm or hot environmental conditions, lack of acclimatization, and wearing clothing that holds in body heat. Hazardous heat exposure can occur indoors or outdoors and can occur during any season if the conditions are right, not only during heat waves.

HEAT ILLNESSES:

Heat Rash (Prickly Heat): A stinging skin irritation which turns a person's skin red when blocked sweat pores trap sweat. It appears in skin folds and where clothing rubs against the skin.

Symptoms include: heavy sweating, fatigue, muscle cramps, and thirst. Heat rash usually goes away when the skin cools down.

To help prevent heat rash:

- Dress in loose, lightweight clothing that wicks moisture away from the skin.
- If possible, use a fan to circulate the air.
- Avoid creams and ointments that can block pores.
- Avoid drugs that cause sweating, such as clonidine and beta blockers.

Heat Cramps: Involuntary muscle spasms that result from loss of water and electrolytes through sweating which can occur in the abdomen, arms, legs, or other muscles used during work or exercise in high temperatures. Heat cramps are the initial symptom of a more serious heat illness.

If a person is experiencing heat cramps:

- Rest briefly and cool down.
- Drink clear juice or an electrolyte-containing sports drink.
- Practice gentle, range-of-motion stretching and gentle massage of the affected muscle group.
- Do not resume strenuous activity for several hours or longer after heat cramps go away.
- Go to a health clinic if the cramps do not go away within one hour or so.



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Heat Stress (Exhaustion): A condition which occurs when the body cannot get rid of excess heat caused by combination of factors including, the environment, metabolic heat, and clothing. Heat stress is usually caused by hot weather and strenuous activity, but can also be caused by dehydration, over dressing, and alcohol use. If untreated, heat stress can lead to heat stroke.

Symptoms include: headache, nausea, dizziness, cool, clammy skin, pale face, weakness, and excessive sweating.

If a person is experiencing heat stress (exhaustion):

- Stop all activity and rest.
- Move to a cooler place.
- Drink cool water or sports drinks with electrolytes.
- Contact a doctor if the symptoms get worse or do not improve within one hour.
- If with someone who has heat exhaustion, seek medical help if they become confused or distressed, lose consciousness, or are unable to drink.

To help prevent heat stress (exhaustion):

- Wear loose fitting, lightweight clothing. Wearing excess clothing or clothing that fits tightly will not allow a person's body to cool properly.
- Protect against sunburn as sunburn affects a person's ability to cool itself. Use a wide-brimmed hat (if possible), sunglasses, and broad-spectrum sunscreen with an SPF of at least 15. Apply sunscreen generously and reapply every two hours.
- Drink plenty of fluids. Staying hydrated will help the body sweat and maintain a normal body temperature.
- Be careful with certain medicines. Certain medications can affect a body's ability to stay hydrated and dissipate heat.
- Where feasible, try to schedule physical labor for cooler parts of the day, such as early morning or evening.
- Get acclimated. People who are not used to hot weather are especially susceptible to heat-related illness. It can take several weeks for someone's body to adjust to hot weather.
- Be cautious if you are at increased risk. If you take medicines or have a condition that increases your risk of heat-related problems, such as a history of prior heat illness, be cautious. Act quickly if you notice symptoms of overheating.



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Heat Stroke: A medical condition which occurs when the body becomes overheated, usually because of prolonged exposure to or physical exertion in high temperatures. If left untreated, the brain, heart, kidneys, and muscles can be damaged. If there is not a quick response to lower a person's body temperature, complications may occur such as vital organ damage or even death.

Symptoms include: high body temperature, altered mental state or behavior, hot/dry skin, nausea, vomiting, flushed (red) skin, rapid breathing, racing heart rate, and headache.

If a person is experiencing heat stroke:

- Call 911.
- While waiting for emergency responders, take immediate action to cool the overheated person.
- Get the person into shade or indoors.
- Remove excess clothing.
- Do not give the person anything to eat or drink.
- Cool the person with whatever means available; put in a cool tub of water or a cool shower, spray with a garden hose, sponge with cool water, fan while misting with cool water, or place ice packs or cold, wet towels on the person's head, neck, armpits and groin.

To help prevent heat stroke:

- Wear loose fitting, lightweight clothing. Wearing excess clothing or clothing that fits tightly will not allow a person's body to cool properly.
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COLD:

Cold Stress: Cold stress occurs by driving down the skin temperature and eventually the internal body temperature. When the body is unable to warm itself, serious cold-related illnesses and injuries may occur, and permanent tissue damage and death may result.

What constitutes cold stress and its effects can vary across different areas of the country. In regions that are not accustomed to winter weather, near freezing temperatures are considered factors for "cold stress." Increased wind speed also causes heat to leave the body more rapidly (wind chill effect). Wetness or dampness, even from body sweat, also facilitates heat loss from the body.

Types of cold stress include: trench foot (immersion), frostbite, hypothermia, and chilblains.

Trench foot (Immersion): A non-freezing injury of the feet caused by prolonged exposure to wet and cold conditions. It can occur in temperatures as high as 60°Fahrenheit, if feet are constantly wet. Injury occurs because wet feet lose heat 25 times faster than dry feet.

Symptoms include: redness of the skin, numbness, tingling, pain, swelling, leg cramps, blisters, bleeding under the skin, and Gangrene.

If a person is experiencing trench foot (immersion):

- Call 911 immediately in an emergency; otherwise seek medical assistance as soon as possible.
- Remove wet shoes/boots and wet socks.
- Dry the feet and avoid working on them.
- Keep affected feet elevated and avoid walking on feet as this may cause tissue damage.

Frostbite: Frostbite is caused by the freezing of the skin and tissues and can cause permanent damage to the body. In severe cases, it can lead to amputation. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

Symptoms include: reddened skin develops gray/white patches in the fingers, toes, nose, or ear lobes, tingling, aching, a loss of feeling, firm/hard areas, and blisters may occur in the affected areas.



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If a person is experiencing frostbite:

- Get into a warm room as soon as possible.
- Unless necessary, do not walk on frostbitten feet or toes.
- Follow the recommendations described for hypothermia.
- Protect the frostbitten area (ie: wrap loosely in a dry cloth and protect the area from contact until first responders arrive).
- DO NOT rub or massage the affected area (rubbing causes damage to the skin and tissue).
- DO NOT try to re-warm the frostbitten area before getting medical help (do not use heating pads or place in warm water). If a frostbitten area is rewarmed and gets frozen again, more tissue damage will occur. It is safer for the frostbitten area to be rewarmed by medical professionals.
- Give warm sweetened drinks, if alert (no alcohol)

Hypothermia: Occurs when the normal body temperature (98.6°Fahrenheit) drops to less than 95°F. Exposure to cold temperatures causes the body to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up the body's stored energy and result in hypothermia or abnormally low body temperature. Hypothermia is at very cold temperatures, but it can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or immersion in cold water.

A body temperature that is too low affects the brain, making a person unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know what is happening and will not be able to do anything about it.

Symptoms include: An important mild symptom of hypothermia is uncontrollable shivering, which should not be ignored. Moderate to severe symptoms of hypothermia include: loss of coordination, confusion, slurred speech, heart rate/breathing slow, unconsciousness and possible death.

If a person is experiencing hypothermia:

- Call 911 immediately in an emergency:
- Move the person to a warm room or vehicle.
- Remove any wet clothing and replace with dry clothing. Wrap the entire body (including the head and neck) in layers of blankets and with a vapor barrier (ie: tarp, garbage bag) Do not cover the face.
- Give warm sweetened drinks, if alert (no alcohol) to help increase the body temperature. Never try to give a drink to an unconscious person.
- Place warm bottles or hot packs in armpits, sides of chest, and groin.
- If the person has no pulse, cardiopulmonary resuscitation (CPR) should be provided and continued until the person responds or medical aid becomes available.



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Chilblains: Painful inflammation of small blood vessels in the skin caused by the repeated exposure of skin to temperatures just above freezing to as high as 60°Fahrenheit.

Symptoms include: redness, itching, blistering, inflammation, and possible ulceration in severe cases.

If a person is experiencing chilblains:

- Avoid scratching.
- Slowly warm the skin.
- Use corticosteroid cream to relieve itching and swelling.
- Keep blisters and ulcers clean and covered.

Cold Weather Protection Tips:

- Wear layers of loose-fitting, lightweight, warm clothing.
- Waterproof and windproof jacket as an outer layer.
- Wear a hat that will cover the ears to help maintain body heat.
- Cover all body parts to help maintain body heat.
- Try to stay dry and out of the wind.
- Cover your mouth to protect your lungs from extreme cold.
- Mittens, snug at the wrist, are better than gloves.
- Waterproof footwear with good traction.