

Working in Outdoor & Indoor Heat Environments

Beat the Heat
July 10, 2024



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- This information has been developed by OSHA and is intended to assist employers, workers, and others to improve workplace health and safety. While we attempt to thoroughly address this specific topic, it is not possible to include discussion of everything necessary to ensure a healthy and safe working environment in this presentation.
- This information is a tool for addressing workplace hazards and is not an exhaustive statement of an employer's legal obligations, which are defined by statute, regulations, and standards.
- This document does not have the force and effect of law and is not meant to bind the public in any way.
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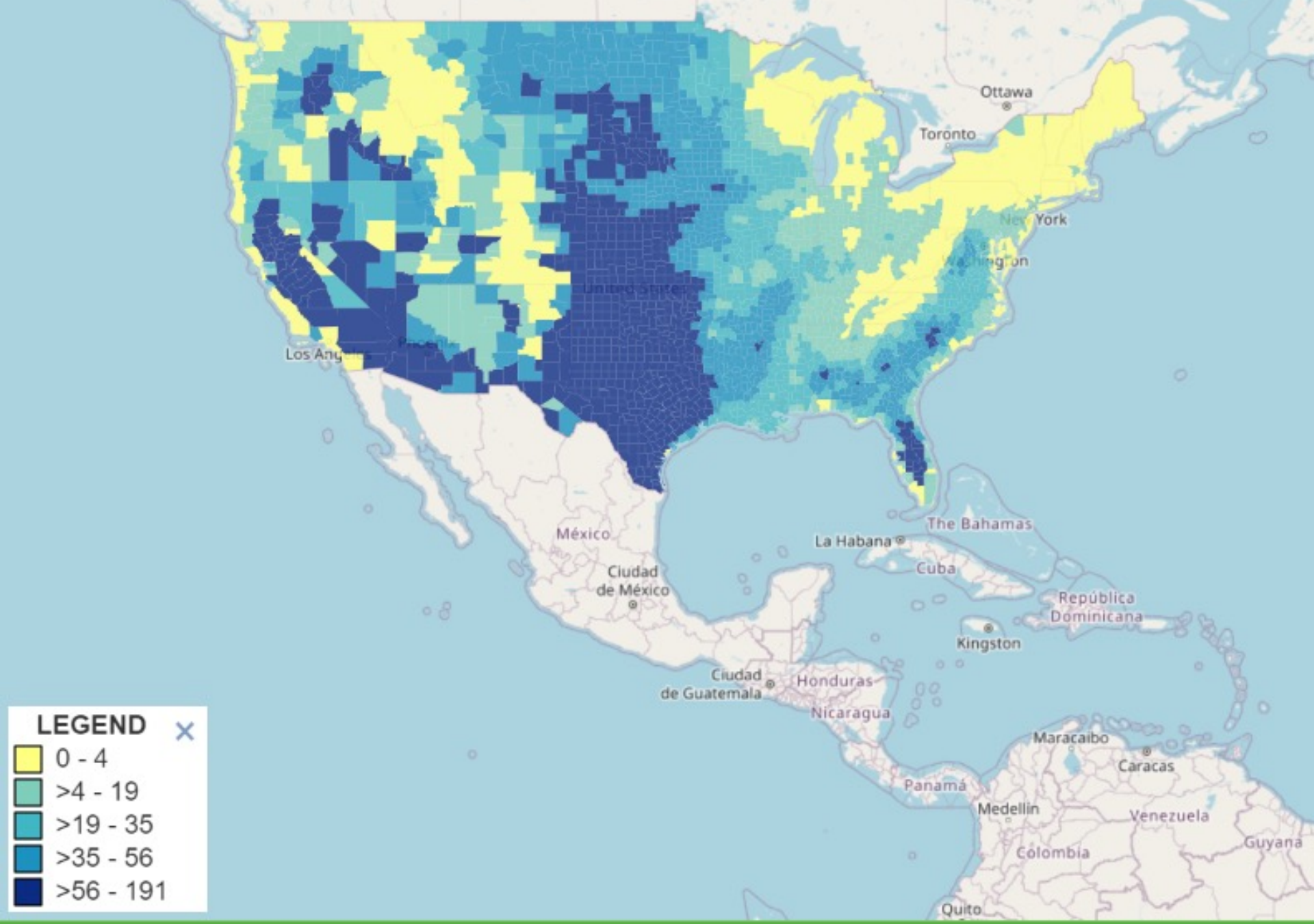
Road Map

- Heat Related Illness & Occupational Heat Exposure
- Prevention
- Acclimatization: New or Returning Workers
- Heat Illness Prevention Program
- OSHA National Emphasis Program (NEP) for Heat
- General Duty Clause violation or Hazard Alert Letter (HAL)
- Resources

Heat Illness is Serious

- Hazardous heat exposure can happen indoors or outdoors, in any season
- Thousands of workers experience occupational heat illness each year
- Some cases are fatal





Annual number of days by state in 2021:

Heat Index \geq 90 degrees F over \geq 2 days

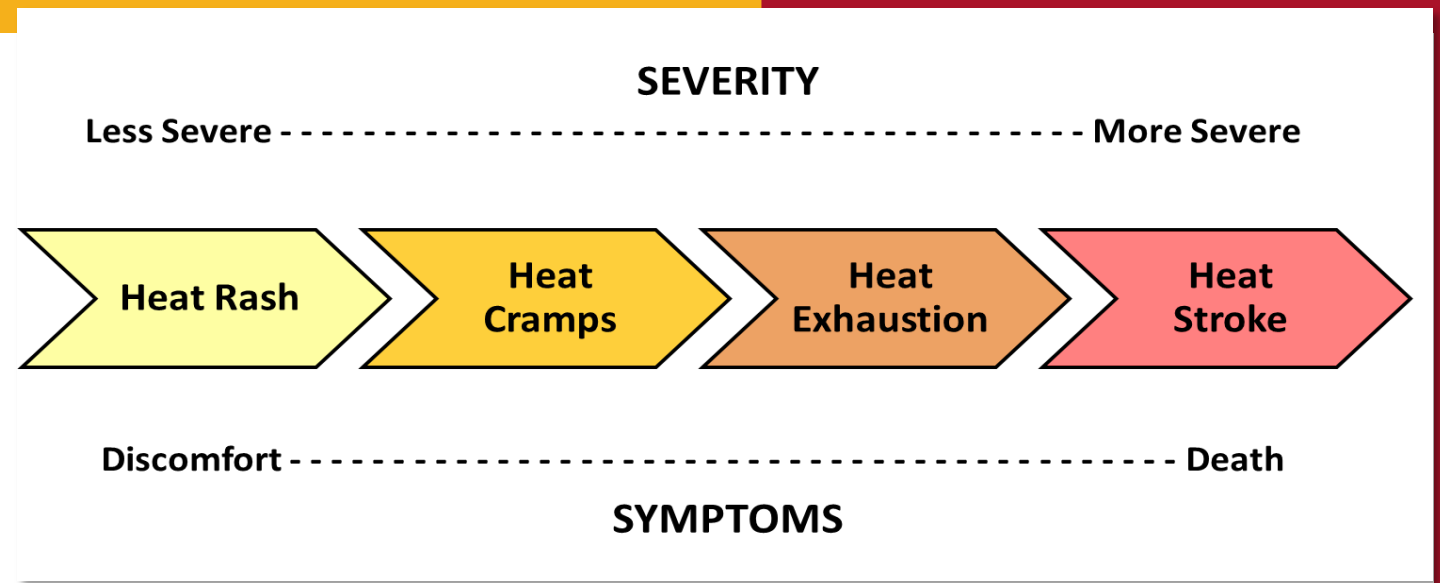
[National Environmental Public Health Tracking Network Data Explorer \(cdc.gov\)](https://www.cdc.gov/nceh/heat/index.html)

Common Workplace Exposures:

Outdoors	Indoors
Agriculture	Bakeries, kitchens, and laundries (sources with indoor heat-generating appliances)
Construction – road work, roofing, and other outdoor work	Electrical utilities (particularly boiler rooms)
Landscaping	Fire Service
Mail and package delivery	Iron and steel mills and foundries
Oil and gas well operations	Manufacturing with hot local heat sources, like furnaces (e.g., paper products or concrete)
Armored car services	Warehousing
	Indoor spaces when A/C is not working

Heat Related Illness (HRI) Continuum

- Heat Rash
- Heat Syncope
 - Fainting / Passing out
- Heat Cramps
- Heat Exhaustion
- Heat Stroke
- Increased risk for heat related illness when
 - Body temperature is greater than 100.4 F
- HRI can occur at lower temperatures
- Called a continuum because no sharp demarcation between heat exhaustion and heat stroke, heat rash can predispose someone to heat exhaustion and heat stroke



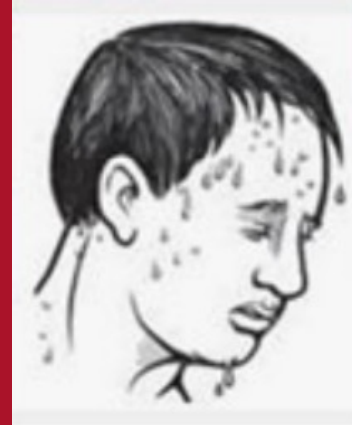
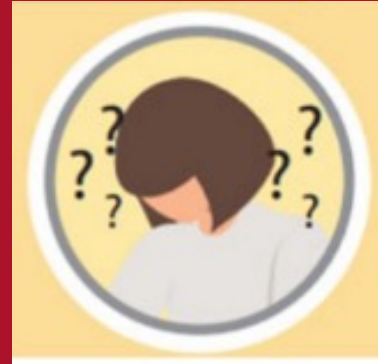
Heat Related Illnesses: Heat Exhaustion

- Fatigue
- Irritability
- Thirst
- Nausea or vomiting
- Dizziness or lightheadedness
- Heavy sweating
- Elevated body temperature or fast heart rate



Heat Related Illnesses: Heat Stroke

- Confusion
- Slurred speech
- Unconsciousness
- Seizures
- Heavy sweating or hot, dry skin
- Very high body temperature
- Rapid heart rate



Heat Stroke is a Medical Emergency



- ❖ Body can no longer regulate temperature
- ❖ Sudden collapse and death
- ❖ Any delay in treatment increases risk of permanent illness and death
- ❖ Important to be able to recognize HRI in self and others

Heat Stroke – Life threatening - Treatment

- Seek medical treatment immediately!
- Move individual to shady area
- Remove outer clothing
- Cool rapidly as possible
 - Immerse in cool water, place in cool shower, fan body, ice sheets and packs to armpits and groin, cold water immersion arms/hands
- Monitor body temperature
 - Record for medical personnel
 - Goal reduce to 101 -102 degrees as emergent treatment
- Give fluids to drink only if worker is awake and alert
- If medical treatment is delayed, call hospital emergency room for further instructions
- Do not leave individual alone



Protect Yourself and Others



Prevention 101

- Drink Cool Water

- 1 cup of cool water every 15 minutes, even if you are not thirsty



- Take Breaks

- Rest for enough time to recover from heat given the conditions



Prevention 101

- Find a Cool Area

- Purposefully take breaks in a shady or cooler location



- Dress for the Heat

- Wear light-colored, loose-fitting, breathable clothing if possible



Prevention 101

- Watch out for Each Other
 - Monitor yourself and coworkers for signs of heat illness



- PPE
 - Be aware that bulky protective clothing and equipment increases your sensitivity to heat exposure



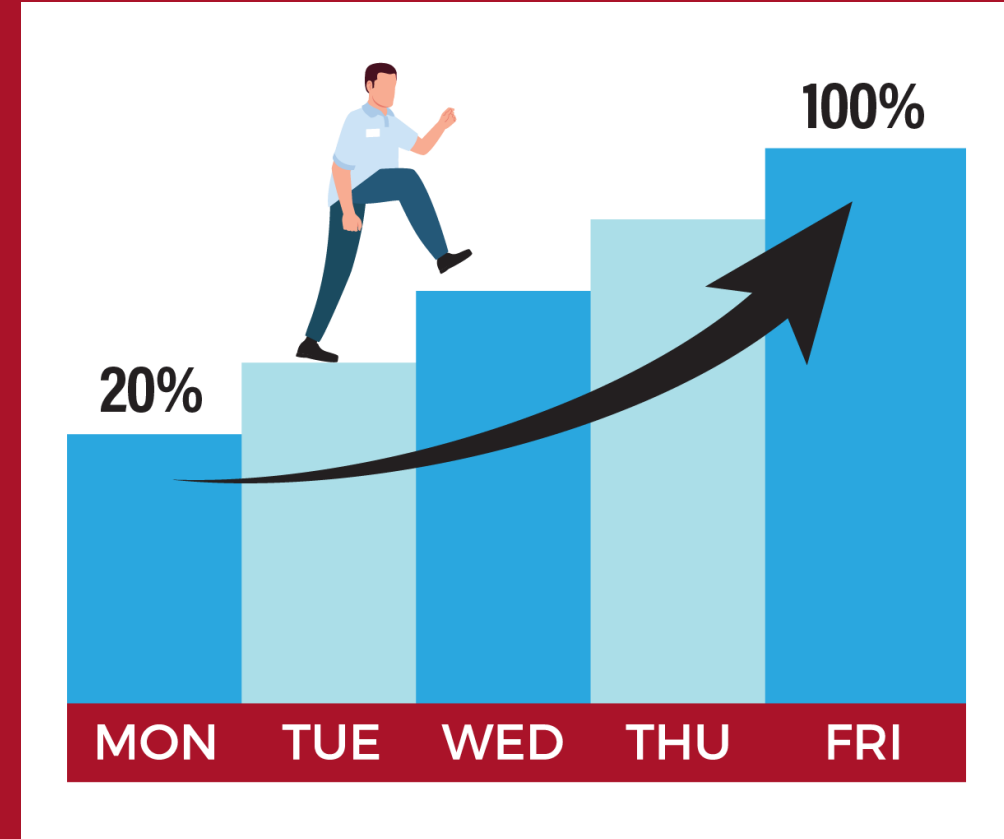
Ease into Work

- Nearly 3 out of 4 fatalities from heat illness occur during the first week of work
 - How can we prevent this?



Ease into Work: Acclimatization

- New and returning workers, and those experiencing a rapid change in ambient temperature
- Follow the 20% rule:
 - Begin with a 20% workload on the first day
 - Increase by no more than 20% each following day



New Employees:

Workers who are new to working in warm environments are at increased risk of heat-related illness.

See the [Protecting New Workers](#) section of this website for more details.

- **Especially during a worker's first few days, absolutely all symptoms should be taken seriously.**
- **Workers who develop symptoms should be allowed to stop working. Initiate first aid.**
- **They should receive evaluation for possible heat related illness.**

Prevention: Protecting New Workers

Throughout this section, the term "workers who are new to working in warm environments" includes the following groups:

1. New, temporary, or existing employees who start new work activities:

- in warm or hot environments
- while wearing additional clothing (e.g., chemical protective clothing)
- with increased physical activity

Prevention: Protecting New Workers

2. Workers returning to work environments with potential exposure to heat hazards after an absence of one week or more for example returning from any kind of extended leave.
3. Workers who continue working through seasonal changes when temperatures first begin to increase in the spring or early summer.
4. Workers who work on days when the weather is significantly warmer than on previous days (i.e., heat wave).



Know the Risk Factors

Occupational Risk Factors

- Warm or hot and humid conditions
- Low fluid consumption
- Heavy physical activity
- Direct sun exposure (no shade) or direct radiant heat (indoors)
- Limited air movement (no breeze or fans)
- Use of protective clothing and equipment
- Lack of available water

Personal Risk Factors

- Medical conditions, such as
 - Obesity
 - Diabetes
 - High blood pressure
 - Heart disease
- Lower levels of physical fitness
- Individual behaviors (such as low fluid consumption)
- Use of certain medications
- Alcohol use
- Drug use
 - Opioids
 - Methamphetamine
 - Cocaine
- Older workers
- Pregnancy

Prevention 101

Have a plan

- Develop a heat illness prevention plan and communicate it to supervisors and workers.
- Include:
 - [Heat Hazard Recognition](#)
 - Monitoring protocols for heat illness
 - [Engineering controls, Work Practices, PPE](#)
 - Acclimatization protocols
 - Work- or rest- schedules
 - Protocols for emergencies and first aid
 - Training for workers and supervisors
 - [Heat Illness Prevention Training Guide: A Lesson Plan for Employers](#)



Creation of a Heat Illness Prevention Plan

Important elements to consider when creating the heat plan are:

1. Who will provide oversight on a daily basis?
2. How will new workers gradually develop heat tolerance?
3. Temporary workers may be more susceptible to heat and require closer supervision.
4. Workers returning from extended leave may also be at increased risk.

Creation of a Heat Illness Prevention Plan

Important elements to consider when creating the heat plan are:

5. How will the employer ensure that first aid is adequate and the protocol for summoning medical assistance in situations beyond first-aid is effective?
6. What engineering controls and work practices will be used to reduce heat stress?
7. How will heat stress be measured?

Creation of a Heat Illness Prevention Plan

Important elements to consider when creating the heat plan are:

8. How to respond when the National Weather Service issues a heat advisory or heat warning?
9. How will we determine if the total heat stress is hazardous?
10. What training will be provided to workers and supervisors?

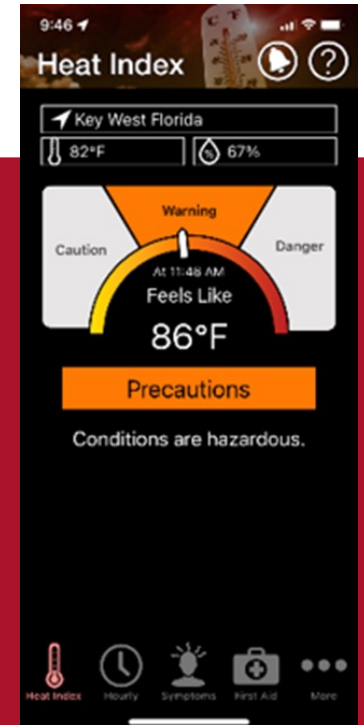
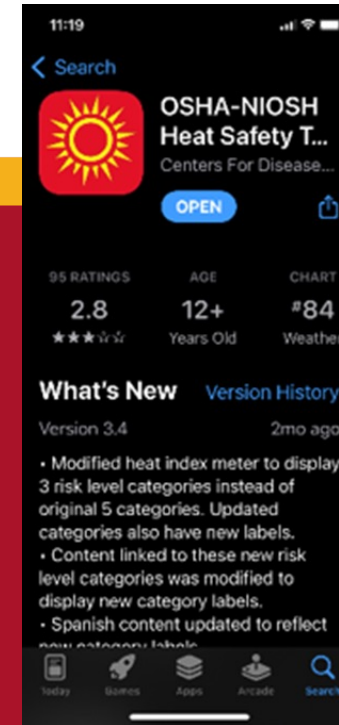
Day-to-Day Supervision

- Heat conditions can change rapidly and management commitment to adjusting heat stress controls is critical to prevent heat illness.
- An individual at the worksite should be responsible for monitoring conditions and implementing the employer's heat plan *throughout the workday*.
- This individual can be a foreman, jobsite supervisor, plant manager, safety director, or anyone else with the proper training.

Day-to-Day Supervision

Proper training includes knowing how to:

- Identify and control heat hazards
- [OSHA-NIOSH Heat Safety Tool](#)
- Recognize early symptoms of heat stress
- Administer first aid for heat-related illnesses
- Activate emergency medical services quickly when needed
- [Additional Resources*](#)



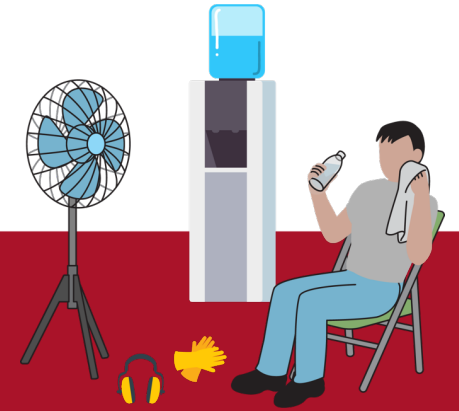


First Aid for Heat Illness

Heat Illness Symptoms

- If a worker experiences:
 - Headache or nausea
 - Weakness or dizziness
 - Heavy sweating or hot, dry skin
 - Elevated body temperature
 - Thirst
 - Decreased urine output

- Take these actions:
 - Give water to drink
 - Remove unnecessary clothing
 - Move to a cooler area
 - Cool with water, ice, or a fan
 - Do not leave alone
 - Seek medical care if needed



Know the Signs of a Medical Emergency

- Abnormal thinking or behavior
- Slurred speech
- Seizures
- Loss of consciousness



ACT QUICKLY in a Medical Emergency

1. Call 911 immediately
2. Cool the worker with water or ice immediately
3. Stay with the worker until help arrives and continue cooling efforts



Remember...

- Symptoms can worsen quickly!
- When in doubt, call 911
- [Two-page Fact sheet from CDC.gov/NIOSH](https://www.cdc.gov/niosh)
- [OSHA Heat Related Illness and First Aid](#)



Employer Responsibility



- Under OSHA law, employers are responsible for providing workplaces free of known safety hazards like hot and humid conditions.

OSH Act of 1970: General Duty Clause

Section 5(a)(1) violation

SEC.5.Duties

(a)Each employer --

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.



OSHA INSTRUCTION

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration

DIRECTIVE NUMBER: CPL 03-00-024 **EFFECTIVE DATE:** April 8, 2022

SUBJECT: National Emphasis Program – Outdoor and Indoor Heat-Related Hazards

ABSTRACT

- Purpose:** This Instruction describes policies and procedures for implementing a National Emphasis Program (NEP) to protect employees from heat-related hazards and resulting injuries and illnesses in outdoor and indoor workplaces. This NEP expands on the agency's ongoing heat-related illness prevention initiative and campaign by setting forth a targeted enforcement component and reiterating its compliance assistance and outreach efforts. This approach is intended to encourage early interventions by employers to prevent illnesses and deaths among workers during high heat conditions, such as working outdoors in a local area experiencing a heat wave, as announced by the National Weather Service. Early interventions include, but are not limited to, implementing water, rest, shade, training, and acclimatization procedures for new or returning employees.
- Scope:** This Instruction applies OSHA-wide.
- References:** Section 5(a)(1) of the Occupational Safety and Health Act (OSH Act), 29 U.S.C. § 654.
OSHA Instruction, CPL 02-00-164, *Field Operations Manual (FOM)*, April 14, 2020.
(See [Section III](#) for additional references.)
- Cancellations:** None.
- State Plan Impact:** Notice of Intent Required, Adoption Encouraged. Federal Program Change, Notice of Intent Required, Equivalency Required. See [Section VI](#).
- Action Offices:** OSHA Regional and Area Offices, State Plan and OSHA On-Site Consultation programs
- Originating Office:** Directorate of Enforcement Programs, Office of Health Enforcement

ABSTRACT-1

[National Emphasis Program - Outdoor and Indoor Heat-Related Hazards \(osha.gov\)](https://www.osha.gov)

National Emphasis Program - Outdoor and Indoor Heat-Related Hazards (osha.gov)

As of **7/2/24**, **5,464** total Heat NEP Federal inspections since 4/8/22.

Industry percentage of the **5,464** Inspections:

- **50%** construction
- **13%** manufacturing
- **1%** maritime
- **3%** agriculture
- **33%** other NAICS (other NAICS such as transportation, warehousing, healthcare, food services, waste management, and remediation services)

Heat inspections since start of NEP 5(a)(1) general duty violations and Hazard Alert Letters (HALs)

Fiscal Year 2022:

- FY22 Total issued 5(a)(1) 4/8/22 to 9/30/22, **3**
- FY22 Total issued HAL 4/8/22 to 9/30/22, **50**

Fiscal Year 2023:

- FY23 Total issued 5(a)(1) 10/1/22 to 9/30/23, **22**
- FY23 Total issued HAL 10/1/22 to 9/30/23, **476**

Fiscal Year 2024:

- FY24 Total issued 5(a)(1) 10/1/23 to **7/2/24**, **30**
- FY24 Total issued HAL 10/1/23 to **7/2/24**, **198**

Employee Rights

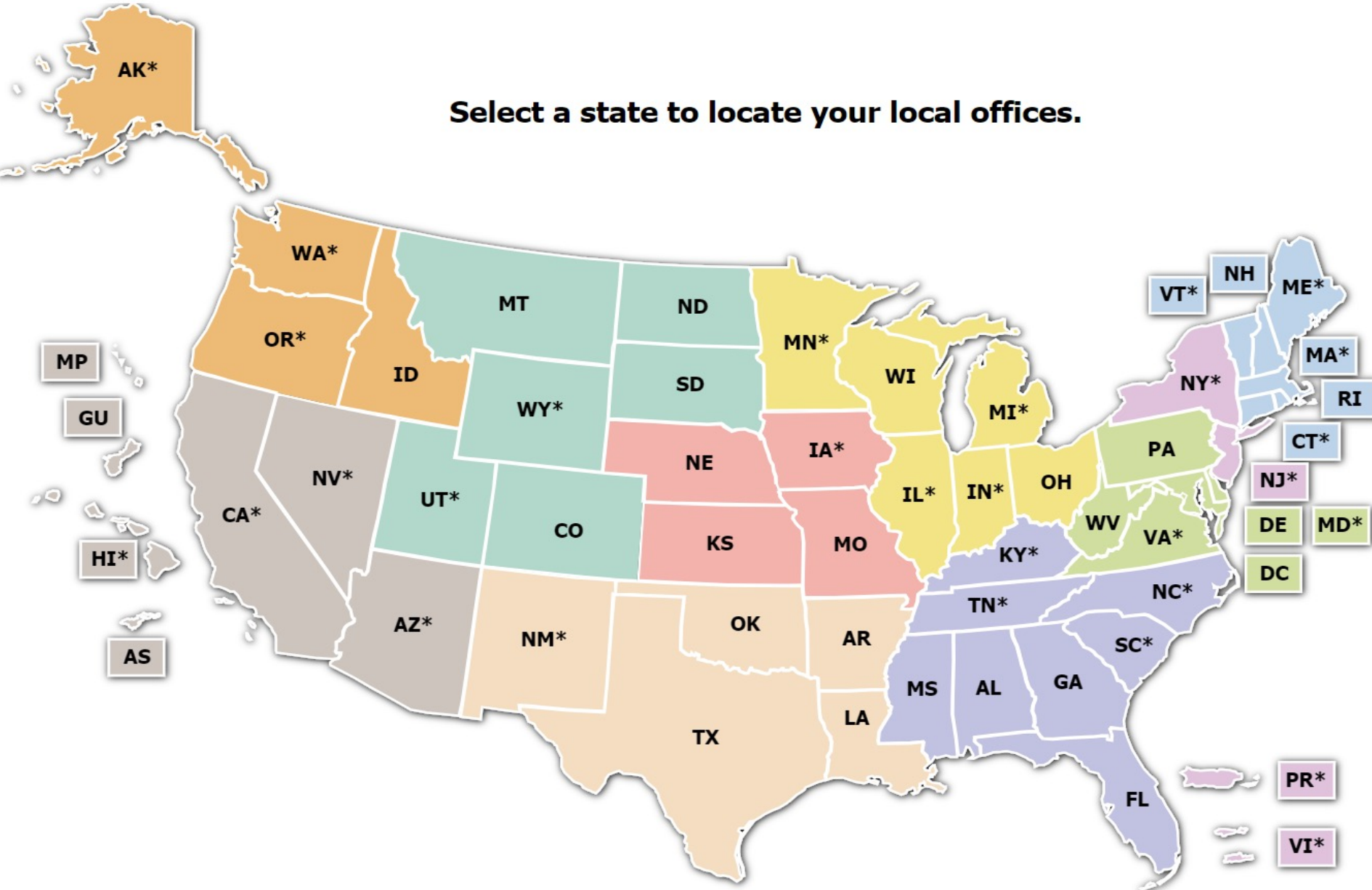
- Federal law entitles employees to a safe workplace.
- Employees have the right to speak up about hazards, including heat, without fear of retaliation. (www.whistleblowers.gov)
- If employees believe working conditions are unsafe, they can visit <https://www.osha.gov/workers> for information on how to file a confidential complaint with OSHA and ask for an inspection.

Find Resources & More Information

- OSHA Heat Illness Prevention www.osha.gov/heat
- OSHA Technical Manual www.osha.gov/otm
- NOAA's National Integrated Heat Health Information System (NIHHIS) www.heat.gov
- Working in Outdoor & Indoor Heat Environments www.osha.gov/heat-exposure
- Heat Illness Prevention for Managers www.osha.gov/heat-exposure/prevention
- OSHA Heat Exposure First Aid www.osha.gov/heat-exposure/illness-first-aid
- Rulemaking <https://www.osha.gov/heat-exposure/rulemaking>
- Remembering Tim: A life lost to heat illness at work ([youtube.com](https://www.youtube.com))

OSHA Offices by State

Select a state to locate your local offices.



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- [State Plans](#)
- [Worker Rights \(Complaints\)](#)
- [OSHA Office Directory](#)

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Thank you!

Questions?

