

Occupational Safety and Health Administration (OSHA) Regulation of Employee Exposure to Heat

Updated August 10, 2022

Employees who work outdoors, including those in industries such as construction and agriculture, may be exposed to extreme heat conditions. Similarly, certain indoor work situations—such as bakeries, warehouses, and steel mills—may also expose employees to unsafe heat levels. The lead federal agency that regulates worker safety and health, the Occupational Safety and Health Administration (OSHA), does not have any standards that specifically address outdoor or indoor heat exposure.

Heat-Related Illnesses

The National Institute for Occupational Safety and Health (NIOSH) has identified [several illnesses that are related to heat exposure](#), including [heat stroke](#), which can result in permanent disability or death. Other heat-related illnesses include [heat exhaustion](#), [rhabdomyolysis](#), [heat syncope](#), [heat cramps](#), and [heat rash](#). Research published in 2020 by the Centers for Disease Control and Prevention estimates that [between 2004 and 2018 there were an average of 702 annual deaths in the United States due to heat exposure](#), with an average of 415 deaths in which heat exposure was the underlying cause and 287 deaths in which heat exposure was a contributing cause. (This includes employment-related and non-employment-related deaths.) In 2020, the [Bureau of Labor Statistics' Census of Fatal Occupational Injuries](#) reported 56 employment-related deaths due to environmental heat exposure and an average of 40 annual environmental heat exposure employment-related deaths between 2011 and 2020. Since 1972, [NIOSH has recommended that OSHA promulgate a heat exposure standard](#). While [Section 22 of the Occupational Safety and Health Act \(OSH Act, 29 U.S.C. §671\)](#) authorizes NIOSH to develop recommended occupational safety and health standards, OSHA is not required by law to promulgate standards based on these recommendations.

OSHA and Heat Exposure

OSHA does not currently have any specific heat exposure standards. On October 27, 2021, OSHA published an [Advanced Notice of Proposed Rulemaking \(ANPRM\) for a potential standard on Heat Injury](#)

Congressional Research Service

<https://crsreports.congress.gov>

IN11701

and [Illness Prevention in Outdoor and Indoor Work Settings](#). OSHA solicited public comments on the ANPRM through January 26, 2022, and received over 1,000 comments on the ANPRM.

In 2011, OSHA launched a [heat illness prevention campaign](#) that includes guidance to employers and employees, a smartphone app that provides location-specific information on heat conditions and heat exposure prevention and first aid, educational materials such as [posters and pamphlets](#) (an example of an OSHA heat illness prevention poster is provided in **Figure 1** at the end of this report), and [graphics and videos](#) in English and Spanish.

In the absence of a specific standard, OSHA may enforce [Section 5\(a\) of the OSH Act \(29 U.S.C. §654\(a\)\)](#), commonly referred to as the “general duty clause,” which requires each employer to provide a workplace that is free of “recognized hazards” causing or likely to cause “death or serious physical harm” to its employees.

As an example of the use of the general duty clause to cite an employer for failing to protect employees from heat exposure, in March 2021, [OSHA cited Valley Produce Harvesting and Hauling Company](#) for a willful violation of the general duty clause by exposing sugar cane harvesting employees in Florida to “excessive heat, elevated temperature working conditions, direct sun radiation and thermal stress” while working outdoors in September 2020. OSHA assessed the maximum allowable civil monetary penalty of \$136,532 for this violation, which was later reduced through an informal settlement with the employer to \$81,919.20.

State Occupational Safety and Health Standards

[Section 18 of the OSH Act \(29 U.S.C. §667\)](#) authorizes states to establish their own occupational safety and health plans and preempt standards established and enforced by OSHA. OSHA must approve state plans if they are “at least as effective” as OSHA’s standards and enforcement. Currently, [21 states and Puerto Rico have state plans that cover all employers, and five states and the U.S. Virgin Islands have state plans that cover only state and local government employers not covered by the OSH Act](#). Three states—[California](#), [Oregon](#), and [Washington](#)—have state occupational safety and health standards that cover outdoor heat exposure. [Minnesota](#) has a state standard that covers indoor heat exposure.

Legislation to Require OSHA to Promulgate a Heat Exposure Standard

In the 117th Congress, H.R. 2193 and S. 1068, both titled as the Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2021, would require OSHA to propose within two years of enactment and promulgate within 42 months of enactment a heat exposure standard to cover outdoor and indoor workplaces. This standard would have to be at least as protective as any state standard and would have to meet specific requirements outlined in the legislation. Both bills are named after Asuncion Valdivia, a California farmworker who died from heat stroke in 2004. On July 27, 2022, H.R. 2193, as amended, was ordered to be reported by the House Committee on Education and Labor.

Figure I. OSHA Health Illness Prevention Campaign Poster



Prevent Heat Illness at Work

Outdoor and indoor heat exposure can be dangerous.

Ways to Protect Yourself and Others

Ease into Work. Nearly 3 out of 4 fatalities from heat illness happen during the first week of work.



- ✓ **New and returning** workers need to build tolerance to heat (acclimatize) and take frequent breaks.
- ✓ **Follow the 20% Rule.** On the first day, work no more than 20% of the shift's duration at full intensity in the heat. Increase the duration of time at full intensity by no more than 20% a day until workers are used to working in the heat.



Drink Cool Water
Drink cool water even if you are not thirsty — at least 1 cup every 20 minutes.



Dress for the Heat
Wear a hat and light-colored, loose-fitting, and breathable clothing if possible.



Take Rest Breaks
Take enough time to recover from heat given the temperature, humidity, and conditions.



Watch Out for Each Other
Monitor yourself and others for signs of heat illness.



Find Shade or a Cool Area
Take breaks in a designated shady or cool location.



If Wearing a Face Covering
Change your face covering if it gets wet or soiled. Verbally check on others frequently.

First Aid for Heat Illness

The following are signs of a medical emergency!

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

- 1** » **CALL 911 IMMEDIATELY**
- 2** » **COOL THE WORKER RIGHT AWAY WITH WATER OR ICE**
- 3** » **STAY WITH THE WORKER UNTIL HELP ARRIVES**



Watch for any other signs of heat illness and act quickly. When in doubt, call 911.

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



OSHA Occupational Safety and Health Administration

For more information: 1-800-321-OSHA (6742)
TTY 1-877-889-5627 www.osha.gov/heat

Federal law entitles you to a safe workplace. You have the right to speak up about hazards without fear of retaliation. See www.osha.gov/workers for information about how to file a confidential complaint with OSHA and ask for an inspection.

OSHA 3411-058 2021

Source: Occupational Safety and Health Administration, <https://www.osha.gov/publications/bytopic/heat-illness-prevention>.

Notes: This poster is also available in Spanish.

Author Information

Scott D. Szymendera
Analyst in Disability Policy

Disclaimer

This document was prepared by the Congressional Research Service (CRS). CRS serves as nonpartisan shared staff to congressional committees and Members of Congress. It operates solely at the behest of and under the direction of Congress. Information in a CRS Report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to Members of Congress in connection with CRS's institutional role. CRS Reports, as a work of the United States Government, are not subject to copyright protection in the United States. Any CRS Report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS Report may include copyrighted images or material from a third party, you may need to obtain the permission of the copyright holder if you wish to copy or otherwise use copyrighted material.