

Employer Information for Heat Stress Prevention during the COVID-19 Pandemic

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Updated Aug. 26, 2020

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Existing heat illness prevention programs and policies can be tailored to the unique challenges of working during the COVID-19 pandemic.

Heat stress is the total amount of heat the body encounters. It may come from a variety of indoor or outdoor sources such as:

- Heat from work processes and machinery (e.g., forge)
- Environmental temperatures, humidity, and lack of air movement (e.g., no wind or inadequate air circulation)
- Internal metabolic processes (e.g., illnesses that create fever)
- Heat generated by muscles from physical exertion

Risk Factors for Heat-related Illnesses

Many risk factors can increase a worker's risk for a heat-related illness. Risk factors may be related to the work environment or characteristics of the individual worker or their current health status.

Examples of [heat-related illness](#) risk factors include:

- High temperature and humidity
- Direct sun exposure
- Indoor radiant heat sources (e.g., machinery)
- Limited air movement
- Not drinking enough fluids to maintain hydration
- Physical exertion
- [PPE and clothing](#) (i.e., these may trap heat close to the body)
- Physical condition (e.g., obesity) and health problems
- Certain medications
- Pregnancy
- Lack of acclimatization (i.e., not being used to the heat)
- Advanced age
- Having had a previous heat-related illness

Heat-related Illnesses

Heat stroke, the most severe form of heat-related illness is a life-threatening medical emergency. As part of your heat illness prevention program, ensure that all staff is trained to recognize early signs of heat-related illness and understand the need to get prompt medical treatment to prevent heat stroke deaths.

Early signs of heat stroke may include:

More info about Heat Stress

[Employees](#)



- Confusion
- Difficulty performing routine tasks or answering simple questions (e.g., “What is today’s date?” “Where are we?”)
- Slurred speech

Late signs of heat stroke may include:

- Seizures
- Loss of consciousness
- Organ failure resulting in death


When are employees at additional risk for heat-related illness during the COVID-19 Pandemic?

Implementing the COVID-19 safety and health recommendations, such as those identified in the [Interim Guidance for Businesses and Employers](#), may alter an employee’s working environment. These alterations can affect the risk level for heat-related illness due to:

- Loss of the body’s natural adaptation to heat ([acclimatization](#)). This can occur if your workplace has closed temporarily or employees have been off work for more than one week.
- Lack of a re-acclimatization component of work re-entry plan. This is important to have in place if employees have been out of the work environment for a week or more.
- Increased heat burden associated with personal protective equipment (PPE) (for healthcare personnel) or cloth face coverings or [masks](#). These can:
 - Reduce the body’s normal ways of getting rid of heat by sweating and other means.
 - Increase effort required to breathe (through face covering or mask, or respirator (for healthcare personnel).
 - Elevate perception of anxiety brought on during wear.
- Increased physical activity if employees have to do more than their usual job tasks due to [social distancing](#) requirements.
- Increased time in a hot environment if employees are assigned longer shifts to catch up on work slowed down by shutdowns or other pandemic-related setbacks.

How can employers modify their heat illness prevention programs to protect workers from exposures to both heat stress and the virus causing COVID-19?





- Pre-screen employees
 - Reassess employees’ medical conditions to determine if they are still safe to work in an environment with additional heat stress risk from
 - COVID-19 related engineering controls,
 - PPE (for healthcare personnel),
 - Cloth face covering or mask use, and
 - Social distancing practices.
- Re-acclimatization
 - Place employees returning after an absence of one or more weeks on a re-entry work schedule that will slowly reintroduce them to working in a hot environment. Employees can often re-acclimatize in 2 to 3 days upon return to work. NOTE: Workers new to the job may take up to 14 days to fully acclimatize.
- Buddy system
 - Assign buddies and remind them to assess each other for symptoms of heat-related illness. Verbal check-ins are important because social distancing and wearing cloth face coverings or masks, or respirators (for healthcare personnel) make it harder to see signs and symptoms.
 - If the work process allows for it, maintain social distancing during any check-ins.
- Cloth face coverings or [masks](#) and PPE (e.g., for healthcare personnel)

- Provide workers with cloth face coverings or masks and any required PPE that provide proper protection but minimize heat stress. Some considerations include:
 - Cloth face coverings or masks that are lightweight and light in color.
 - Protective garments (if worn) made of breathable materials that are also lightweight and light in color.
 - Damp or [dirty](#) cloth face coverings or masks need to be replaced with clean ones.
 - If use of cloth face coverings or masks may increase the risk of heat-related illness, consult with an occupational safety and health professional to determine the appropriate cloth face covering or mask for the setting. Outdoor workers may prioritize use of cloth face coverings or masks when in close contact with other people (e.g., during group travel or shift meetings) and remove them when social distancing is possible. CDC provides information on [adaptations and alternatives](#) that should be considered when cloth face coverings or masks may not be feasible.
- Consider allowing workers to remove cloth face coverings or masks outdoors if work positions or seating arrangements provide more than 6 feet between employees.
 - If [storing](#) the cloth face covering or mask while at work, employees should place the used cloth face covering or mask into a dry, breathable container or paper bag labeled with the employee's name.
- Work/rest schedules
 - Consider altering the current work/rest schedule to account for the additional heat stress.
 - Decrease the amount of work and increase the length and frequency of rest breaks. Frequent and longer rest breaks may be needed so that workers have adequate time to [remove cloth face coverings or masks](#), practice proper hand washing, and rehydrate while maintaining social distancing requirements.
 - Schedules will also need to be adjusted with increasing temperatures and humidity.
 - Ensure managers who oversee work/rest schedules and manage cooling stations are trained to recognize heat-related illnesses and actively monitor employees for these conditions.
 - If possible, modify schedules so that the majority of work hours or the most physically demanding tasks occur overnight or during cooler parts of the day.
- Daily work completion targets
 - Reassess daily production targets if social distancing requirements or increased rest schedules add time to an employee's tasks. Consider decreasing the number of tasks to be completed on each shift.
- Make sure the facility is [well ventilated](#)  .
 - Work with facilities management to adjust the ventilation to deliver the maximum amount of fresh air to occupied spaces while maintaining the humidity at 40-60%. If possible, increase the filter efficiency of heating, ventilation and air conditioning (HVAC) units to highest functional level.
 - [Increase circulation of outdoor air](#) as much as possible in non-climate-controlled indoor workspaces by opening windows and doors and using fans when environmental conditions and building requirements allow. Do not open windows and doors if doing so poses a safety or health risk for occupants. This will increase evaporative cooling effects for workers and will help dilute any respiratory droplets produced by workers.
 - If fans such as pedestal fans or hard mounted fans are used at the worksite, take steps to minimize air from fans blowing from one worker directly at another.
- Cooling stations
 - Ensure that cooling stations provide shading from the sun. Position cooling or misting fans and arrange seating so that air does not blow respiratory droplets from one employee to another seated nearby.
 - Arrange seating in the cooling station to maintain social distancing during rest breaks. Proper social distancing is very important during breaks as workers will need to remove respirators or cloth face coverings or masks to rehydrate.
 - If providing pre-packaged water bottles or rehydration fluids (such as sports drinks), place individual bottles at each seat before employees enter the cooling station at the start of each rest cycle to avoid congregating around water refill stations.
 - At each worksite, ensure that water is always easily accessible so employees can rehydrate frequently and as needed.
 - If water refill stations are unavoidable:
 - Use markers and signs to promote social distancing in the refill line.
 - Consider issuing refillable drinking bottles to employees or allowing them to bring their own to be stored inside the cooling station if they cannot or do not plan to carry them while working. Refillable bottles should be clearly marked with the employee's name and designated work/rest cycle.

- If using disposable paper cones or cups, store them in an enclosed container near the refill station to reduce the risk of contamination if someone coughs or sneezes.
- Avoid contact between the water dispenser and a drinking cup or bottle when refilling it.
- If cooling stations are located indoors, consider using no-touch activation methods for water dispensing.
- Emergency [first aid](#) plan for heat related illnesses
 - Immediately remove worker from hot environment to cooling station.
 - Remove PPE (normally worn for job tasks), cloth face covering or mask, and excess clothing from affected employee to facilitate cooling.
 - Provide cool liquids to drink, if the employee is alert.
 - If [heat stroke](#) is suspected:
 - Call 911.
 - Remove *all* PPE from affected employee to facilitate emergent cooling and resuscitation measures.
 - While waiting for the ambulance to arrive, cool the employee aggressively with any means available such as immersion in cool water or an ice bath or use of misting fans. Note that use of any immersion cooling methods in someone with heat stroke with a depressed mental status should include careful positioning and constant monitoring to prevent submersion and aspiration of cooling fluids.
 - Other employees providing first aid or resuscitation should continue wearing their PPE (e.g., healthcare personnel) or cloth face coverings or masks.

How to Get More Information

Use these resources for more information on heat stress prevention and management:

- [NIOSH Heat Stress Topic Page](#)
- [NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments](#)
- [OSHA Safety and Health Topics: Heat](#) 
- [OSHA Technical Manual, Section III, Chapter 4: Heat Stress](#) 
- [Global Heat Health Information Network: Heat and COVID-19](#) 
- Raymond J. Roberge, Jung-Hyun Kim, Aitor Coca, Protective Facemask Impact on Human Thermoregulation: An Overview, *The Annals of Occupational Hygiene*, Volume 56, Issue 1, January 2012, Pages 102–112, <https://doi.org/10.1093/annhyg/mer069> 

For additional information or if you have any questions, contact CDC at:

CDCINFO: 1-800-CDC-INFO (1-800-232-4636) | TTY: 1-888-232-6348 | website: www.cdc.gov/info