

HEAT STRESS

Please Share with all Facilities Staff

Recently, summer temperatures have been higher and sustained longer than ever before and we need to be prepared to recognize and respond to the risk. Considering the coming forecast when planning work and sharing strategies with our staff, will allow for opportunities to avoid unnecessary exposures. There are three main causes of heat stress:

THE ENVIRONMENT

Radiant heat from direct or indirect sunlight (i.e. reflection from pavement)
Air temperature hotter than skin temperature (warms a worker up)
High humidity (makes it harder for a worker to cool down)

THE WORK

The more active you are, the more heat you will produce

THE WORKER

Conditioning (regular work in hot environments makes workers less prone to heat stress)
Poor health, including obesity, advanced age, and medical conditions (the body responds poorly to overheating)
Not staying hydrated
Excess clothing or inappropriate personal protective equipment (they trap heat and prevent cooling)
As a worker's body heats up it loses fluids and salt through sweat. As workers dehydrate, they are less able to cool themselves down. Workers in a hot environment should be aware of these warning signs of heat stress and steps to take if experienced:

HEAT STRESS CAN BE LIFE THREATENING

KNOW THE SIGNS AND PREVENT IT

Heat Cramps

Dehydration caused by heavy sweating or not drinking enough leads to heat cramps

Symptoms:

- Heavy sweating
- Muscle spasms or cramps

First aid:

- Drink cool water or a sports drink with electrolytes
- Apply cool compresses
- Move to a cool, shaded place

Heat Exhaustion

Heat exhaustion can come on rapidly

Symptoms:

- Heavy sweating
- Muscle spasms or cramps
- Nausea or vomiting
- Dizziness or headache
- Fainting

First aid:

- Drink cool water or a sports drink with electrolytes
- Apply cool compresses
- Move to a cool, shaded place
- Remove PPE and loosen clothing
- Continue cooling until body temperature is below 100°
- If first aid measures don't relieve symptoms, seek emergency medical help

Heat Stroke

Heat stroke can be fatal and requires immediate medical attention

Symptoms:

- Hot dry skin or profuse sweating
- Confusion or disorientation
- Slurred speech
- Seizures or convulsions
- Throbbing headache
- Very high body temperature over 104°

First aid:

- Call 911 immediately
- Move the person to a cool, shaded place
- Apply cool compresses and wet the person's clothing with water and fan with a towel
- Do not give them anything to drink—it could pose a choking hazard in their altered mental state

Safety Bulletin

June 2023

The following work practice recommendations come into play whenever temperatures exceed 30° with a high humidex or 35° regardless of humidity:

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| Limit time in the heat and increase recovery time in a cool area. | Reduce the metabolic (physically difficult) demands of the job |
| Use tools to minimize manual strain. | Observe each other for signs of heat-related illnesses. |
| Provide adequate amounts of cool, potable water near the work area. | Communicate heat alerts whenever the weather service forecasts a heat wave. |
| Increasing the frequency and length of rest breaks | Scheduling strenuous jobs to cooler times of the day such as in the early morning. |
| Cautioning workers to avoid direct sunlight when possible. | Assigning more workers or slowing down the pace of work |

This NIOSH work/rest schedule is based on air temperature, with adjustments for direct sunlight and humidity. It may not be applicable to all worksites.



| Temperature (°C) | Light Work Minutes Work/Rest Operating equipment •Inspection work •Walking on flat, level ground •Using light hand tools (wrench, pliers, paint brush) | Moderate Work Minutes Work/Rest Carrying equipment/supplies weighing 20–40 pounds •Using hand tools (shovel, hammer, drills) for short periods | Heavy Work Minutes Work/Rest Climbing •Carrying equipment/supplies weighing 40 pounds or more •Installing utilities •Using hand tools (shovel, fin-hoe, scaling bar) for extended periods |
|------------------|--|---|---|
| 34 Celsius | Normal | Normal | Normal |
| 34.5 Celsius | Normal | Normal | Normal |
| 35 Celsius | Normal | Normal | 45/15 |
| 35.5 Celsius | Normal | Normal | 45/15 |
| 36 Celsius | Normal | Normal | 40/20 |
| 36.5 Celsius | Normal | Normal | 35/25 |
| 37 Celsius | Normal | Normal | 35/25 |
| 38 Celsius | Normal | 45/15 | 30/30 |
| 39.5 | Normal | 40/20 | 30/30 |
| 39 Celsius | Normal | 35/25 | 25/35 |
| 40 Celsius | Normal | 30/30 | 20/40 |
| 41 Celsius | Normal | 25/35 | 15/45 |
| 42 Celsius | 40/20 | 15/45 | Extreme Caution |
| 43 Celsius | 30/30 | Extreme Caution | Extreme Caution |
| 44 Celsius | 15/45 | Extreme Caution | Extreme Caution |
| 45 and beyond | Extreme Caution | Extreme Caution | Extreme Caution |

From NIOSH Criteria for a Recommended Standard, Occupational Exposure to Heat and Hot Environments, <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf>. Assumptions: workers are physically fit, well-rested, fully hydrated, under age 40, and environment has 30% humidity and perceptible

Please share this information and use the recommendations to plan work in the coming summer. Personal health factors can affect heat tolerance and indication of heat stress, anyone feeling symptoms should immediately stop work, hydrate, cool and seek first aid.