

# Heat Illness Prevention for the Indoor & Outdoor Workplace

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# General Duty Clause:

- The General Duty Clause from the OSHA Act of 1970 requires that, in addition to compliance with hazard-specific standards, all employers provide a work environment "free from recognized hazards that are causing or are likely to cause death or serious physical harm."



## Scope and Application:

- All outdoor workplaces
- Indoor workplaces that exceed 82°F when employees are present



**WATER.  
REST.  
SHADE.**

*The work can't get done without them.*



U.S. DEPARTMENT OF LABOR

**OSHA**<sup>®</sup>

Occupational Safety  
and Health Administration

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**WATER.  
REST.  
SHADE.**

*The work can't get done without them.*



A HEAT SAFETY FACT SHEET

Drink water often

Rest in the shade

Report heat symptoms early

Know what to do in an  
emergency



# Prevent Heat Illness at Work

**Outdoor** and **indoor**  
heat exposure  
can be dangerous.



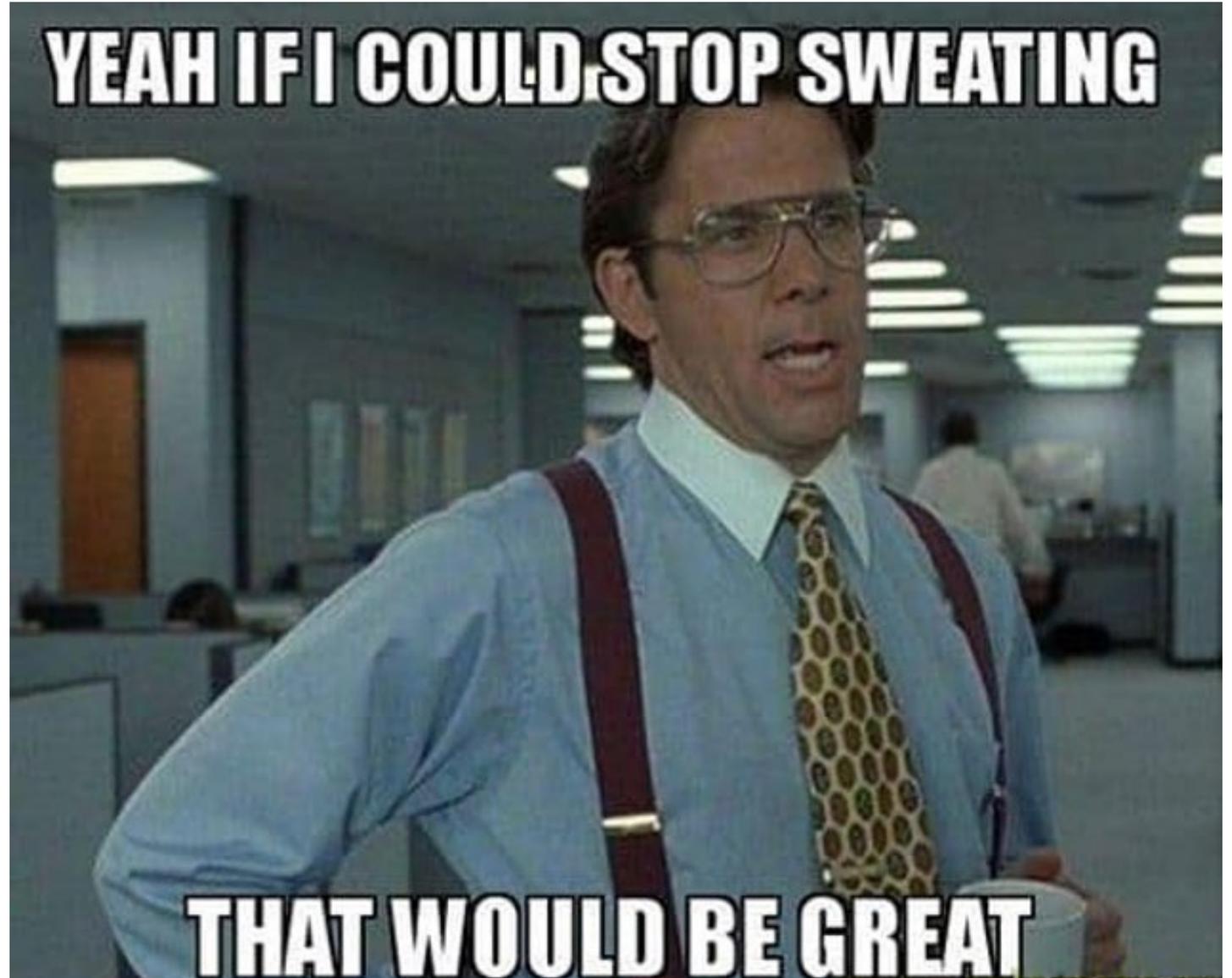
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# In This Session:

- Physiology of Heat Stress
- How Heat is a Hazard to Workers
- Risk Factors
- Provision of Water and Access to Shade/Cool-Down Areas
- Heat-Related Illnesses and Symptoms
- Engineering Controls and Work Practices
- Training and Prevention

What  
Happens  
When We Are  
Exposed to  
Heat?

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# How is Heat a Hazard to Workers?



# Anyone Can Be Affected

- Workers exposed to hot *indoor environments*
- Workers exposed to *hot and humid indoor conditions*
- Workers exposed to *hot outdoor conditions*
- Workers exposed to *hot and humid outdoor conditions*

# Risk Factors That Increase Chances of Heat Illness

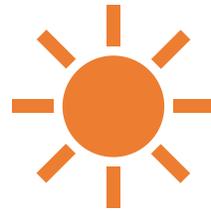


Environmental



Activities

# Risk Factors That Increase Chances of Heat Illness



Not Acclimated



Medications

# Risk Factors That Increase Chances of Heat Illness



Dehydration



Health Conditions

# Risk Factors That Increase Chances of Heat Illness



Prior Heat Illness



Other Factors

# Provisions of Drinking Water

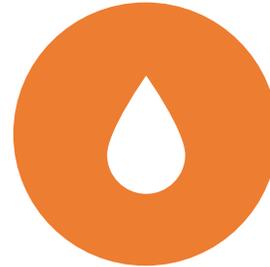
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NO COST TO ALL  
EMPLOYEES



FRESH & PURE /  
SUITABLY COOL



LOCATION OF  
WATER?



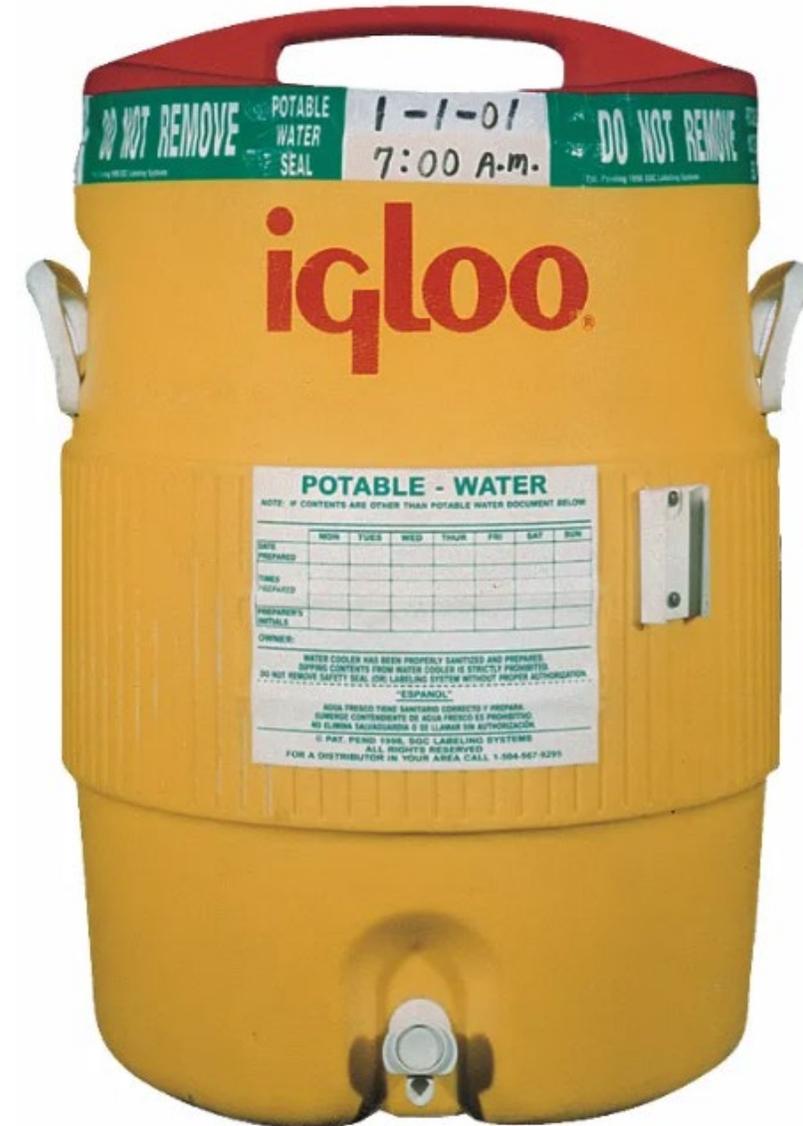
HOW MUCH  
WATER TO DRINK?

# Access to Water

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- Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. Water shall not be dipped from containers.
- Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

REFERENCE: OSHA Construction Standard: 29CFR1926.51 Sanitation (a) Potable Water (1) An adequate supply of potable drinking water shall be provided in all places of employment. (2) Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. Water shall not be dipped from containers. (3) Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.



# Access to Shade/Cool- Down Areas

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## Shade

- Temperature is Below 80° F
- Temperature Above 80° F

## Cool-Down Areas

- Temperature must be maintained at less than 82° F, unless the employer demonstrates it is unfeasible



# High-Heat Procedures – Outdoor Workplaces

When Temperature Equals or Exceeds 95° F

- Communication
- Observation
- Emergency Response Procedures

Agriculture Industry

- 10-Minute Cool-Down Rest Period  
Mandatory Every 2 Hours



# High-Heat Procedures

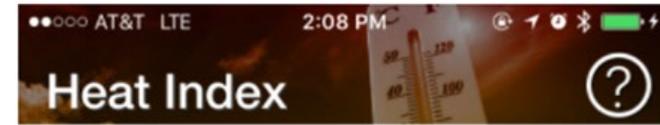
## – Indoor Workplaces

- The temperature equals or exceeds 87 degrees Fahrenheit when employees are present; or
- The heat index equals or exceeds 87 degrees Fahrenheit when employees are present; or
- Employees wear clothing that restricts heat removal, and the temperature equals or exceeds 82 degrees Fahrenheit; or
- Employees work in a high radiant heat area and the temperature equals or exceeds 82 degrees Fahrenheit.



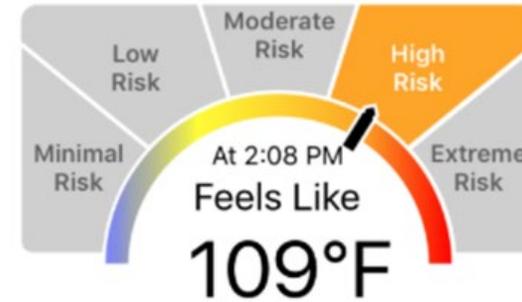
# OSHA Heat Safety Tool App

- <http://www.osha.gov/heat/heat-app>
- Download the app on your mobile device



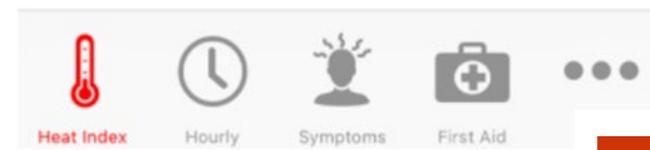
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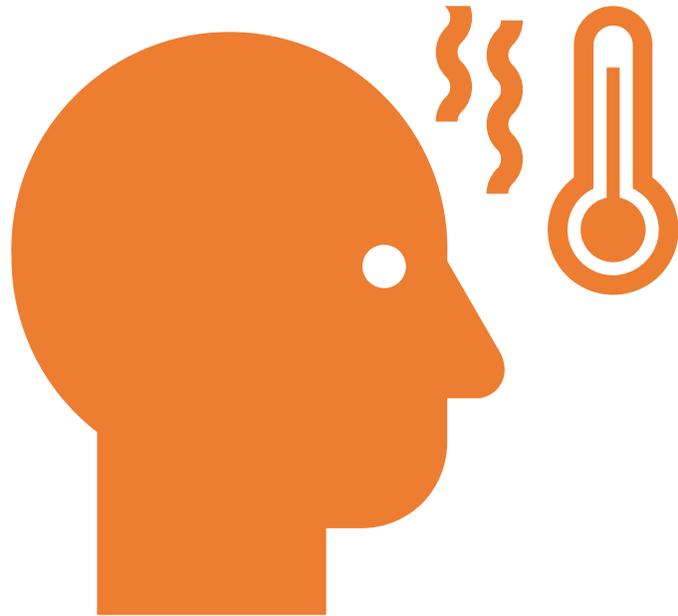
95°F 55%



Precautions

Conditions are hazardous.





# Heat-Related Illnesses

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- Heat Cramps
- Heat Exhaustion
- Heat Rash/Prickly Heat
- Heat Syncope (Fainting)
- Heat Stroke

# Heat Cramps



MAY OCCUR DURING OR AFTER  
WORKING HOURS



MUSCLE CRAMPS, PAIN, OR  
SPASMS IN THE ABDOMEN,  
ARMS, OR LEGS



LOW SALT LEVELS IN MUSCLES  
CAUSE PAINFUL CRAMPS



TIRED MUSCLES – THOSE USED  
FOR PERFORMING THE WORK –  
ARE USUALLY THE ONES MOST  
AFFECTED BY CRAMPS

# Heat Cramps – First Aid

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Have workers rest in a shady, cool area

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Worker should drink fluids every 15 to 20 minutes and eat a small snack or have a sports drink

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Avoid salt tablets

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Seek medical help if the worker has a heart problem, is on a low-sodium diet, or if cramps do not subside within an hour

# Heat Exhaustion

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## Signs & Symptoms Include:

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Headache

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Nausea and/or vomiting

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Dizziness and/or lightheadedness

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Decreased urine output

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Irritability

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Thirst

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Heavy sweating

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Fast heartbeat

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Elevated body temperature

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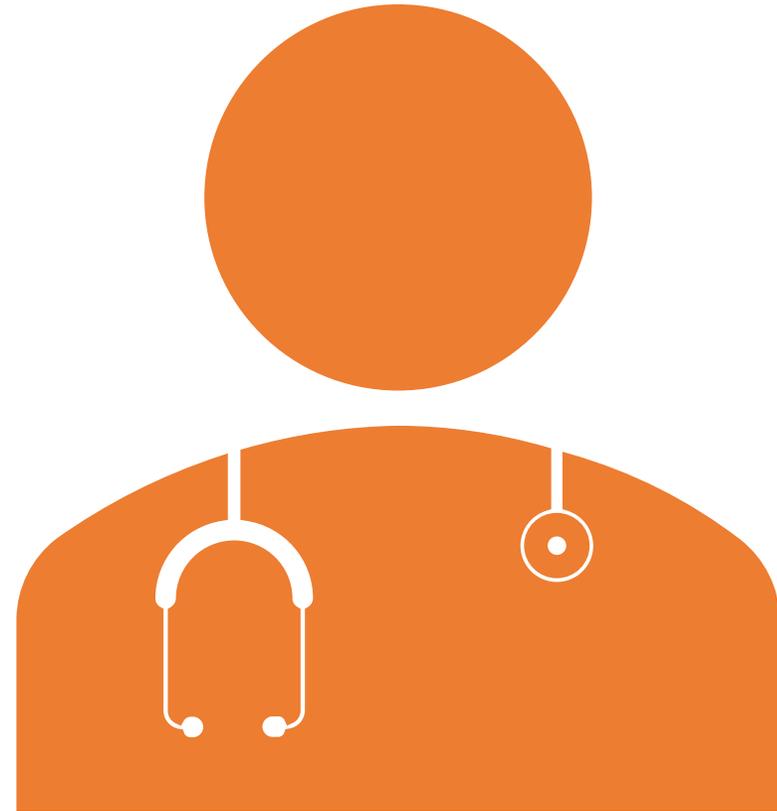
Weakness

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# Heat Exhaustion – First Aid

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- Call for medical help or take the worker to a health facility for evaluation and treatment
- Remove the worker from the hot area and stay with them until help arrives
- Encourage frequent sips of cool water or a sports drink with electrolytes.
- Cool worker with cool compresses, water, an ice bath, or fans
- Remove unnecessary clothing, including shoes and socks



# Heat Rash/Prickly Heat

- Most common problem in hot work environments
- Skin irritation caused by sweat that does not evaporate from the skin
- Red clusters of pimples or small blisters are usually seen on the neck, upper chest, groin, under breasts, and in elbow creases
- Extensive area of skin that does not sweat on heat exposure but presents a “gooseflesh” appearance and is alleviated with cool environments



# Heat Rash/Prickly Heat – First Aid

- Best treatment when possible is to be in cooler, less humid work environments
- Keep rash area dry
- Powder can be applied to increase comfort
- Do not use ointments or creams, it impairs cooling
- Warm, moist skin equals a worse rash



# Heat Syncope (Fainting or Dizziness)

## What to do...

- Sit or lie down in a cool place as soon as an employee begins to feel faint or dizzy
- Have them slowly drink water or sports drink

# Heat Stroke

***This is a **life-threatening** emergency and immediate action is required***

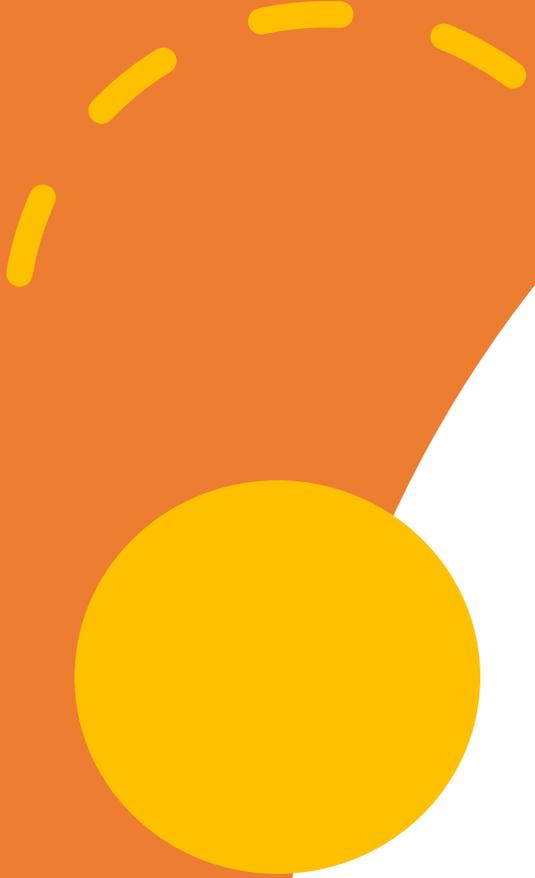
*Signs & Symptoms Include:*

- Confusion
- Altered mental state
- Slurred speech
- Loss of consciousness
- Seizures
- Hot, dry skin or profuse sweating
- Very high body temperatures
- Fatal if treatment is delayed

# Heat Stroke – First Aid

- Call **911** immediately
- Move the worker to a cool area and remove outer clothing
- Cool the worker
- Stay with the worker until emergency medical services arrive





# Engineering Controls and Work Practices

# Engineering Controls

- Air Conditioning
- Increased general ventilation
- Cooling fans or misters
- Local exhaust ventilation at points of high heat production or moisture
- Reflective shields to redirect heat
- Elimination of steam leaks

# Administrative Controls

- Incorporate work/rest cycles – distribute the workload
- Heavier/more strenuous work scheduled during cooler times of the day
- Rotate job functions

# Work Practices

- Implement a written heat illness prevention plan
- Emergency plan in place outlining what to do if an employee shows symptoms
- Ensure employees are acclimated
- Provide potable water close to the work area
- Be aware and look out for one another



# Training

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Risk factors for heat-related illness



Different types of heat-related illness



Recognizing signs and symptoms



Prevention procedures



Response procedures

# Employer's Responsibilities and Workers Rights

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Workers have a right to a safe workplace

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OSHA requires employers to provide their employees with safe and healthful workplaces

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Employees have a right to raise a safety concern or report an injury to OSHA.

Questions?



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