

HEAT ILLNESS PREVENTION TRAINING



DUNN safety™

EVERYONE.
EVERYWHERE.
ALL THE TIME.

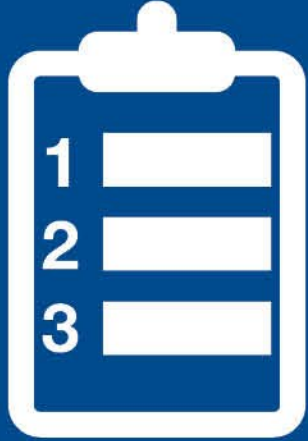


OBJECTIVES OF CLASSROOM INSTRUCTION



- 1** Comprehend Heat Illness Prevention (HIP) Procedures
- 2** Supervisor Responsibilities
- 3** Zero Significant Injuries / Illnesses

AGENDA



1 Heat Illness Factors,
Types, Causes and
Risks

2 Prevention & HIP
Plan, + Form

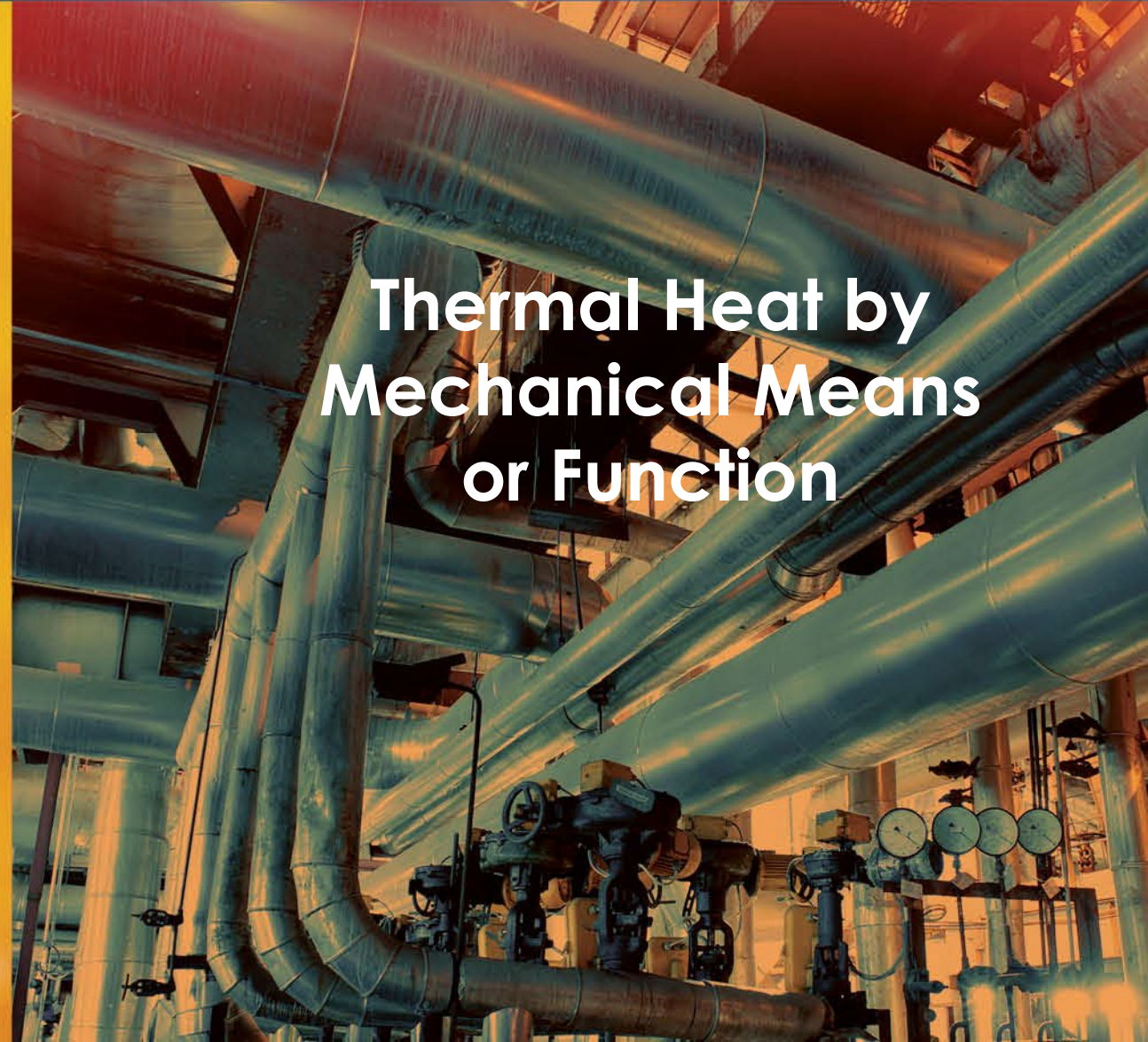
3 Review

ENVIRONMENTAL FACTORS



**Direct Sunlight
or Secondary
Reflection**

**Thermal Heat by
Mechanical Means
or Function**



TYPES OF HEAT ILLNESS



HEAT RASHES

Most common problem in hot environments. Prickly heat exists through wet un-evaporated sweat, and heat rash papules give rise to sensation

HEAT STRESS

Includes heat cramps, which are non emergent. Treated by salt replacement.

HEAT COLLAPSE

In heat collapse (FAINTING), the body's heat balance is not affected. Onset is rapid and unpredictable. Acclimatization is the key to preventing Heat Collapse.

HEAT EXHAUSTION

Caused by exposure to heat, resulting in the depletion of body fluids and causing weakness, dizziness, nausea, and often collapse.

HEAT STROKE

A severe condition caused by impairment of the body's temperature regulating abilities, resulting from prolonged exposure to excessive heat.

Heat Exhaustion

vs.

Heat Stroke

Faint or Dizzy

Excessive Sweating

Cool, pale,
clammy skin

Nausea or vomiting

Rapid, weak pulse

Muscle cramps

Throbbing Headache

No Sweating

Body temp above 104;
Red, hot, dry skin

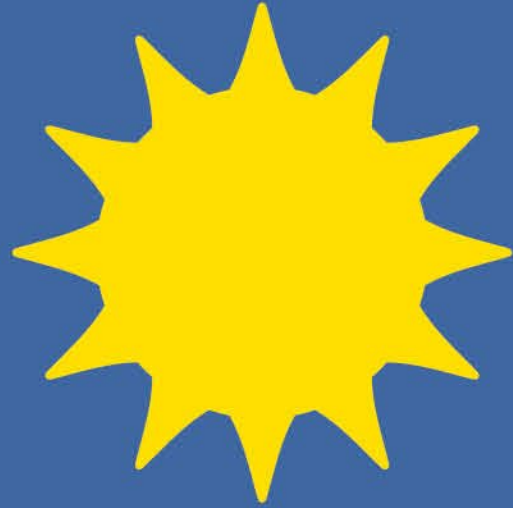
Nausea or vomiting

Rapid, strong pulse

May lose consciousness



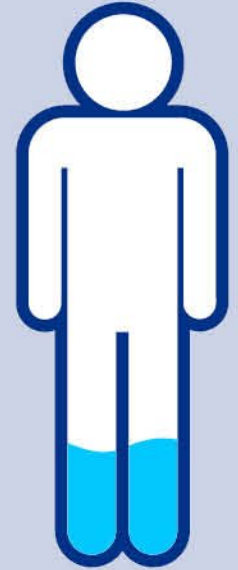
MAIN CAUSES OF HEAT ILLNESS



Exposure to
high heat,
thermal heat, or
intense sunlight



Strenuous
work in 85
degrees F
or above



Dehydration from
heat causing
stress to the
bodies organs



HEAT ILLNESS STATISTICS



In 2001, 300
deaths were
caused by
excessive heat
exposure

Construction
workers are not
exempt from heat
illness!

JE DUNN
Heat Related Illnesses

2021 - 0
2020 - 1
2019 - 4

More people
died from
extreme heat
than from any
other extreme
weather events

8,015 deaths
in the US from
1979-2003

WHO HAS THE GREATEST RISK?



**Younger
Individuals**



Older, 65+



**Overweight,
Out of Shape**



**People Exerting
More Energy**



**People From
Cooler Climates/
Low Humidity**



**People
With: Diarrhea,
Diabetes, Obesity,
Heart Problems, Etc**



**People Not
Acclimated**

Acclimatization Period!!!



It takes 14 days to fully
acclimate to heat conditions.

This could be a new Laborer,
Trade Foreman, PE, FE,
Superintendent, etc..

Supervisors shall closely monitor
new employees to ensure
acclimation is part of plan to
control this important risk

HEAT INDEX TRIGGERS



70°-91°F LOWER RISK

No limits on self-paced work.

Define project specific Heat Illness Prevention Plan and Actions – water, rest, shade.

EMPLOYEES: Drink water throughout the day.

SUPERVISORS: Monitor heat index regularly, observe employees wearing heavy, non-breathable coveralls or extra PPE and observe employees for signs of heat-related illness. Acclimate new and returning employees who perform strenuous work.

103°-115°F HIGH RISK

Conditions will limit work activities. Encourage indoor work, where possible.

EMPLOYEES: Drink, at minimum, 4 but no more than 6 cups of cool water per hour, work/rest cycles of 50:10 minutes.

SUPERVISORS: Implement work/rest cycles of 50:10 minutes, set up buddy system, ensure employees are acclimated to weather conditions, closely supervise new employees for the first 7 days, recommend using thermometers with employees during rest periods and breaks to ensure heat-related illnesses are avoided.

91°F - 103 °F MODERATE RISK

Conditions may limit work activities.

EMPLOYEES: Drink 4 cups of water every hour, rest for 5 minutes every hour (55:5 work/rest cycles), observe coworkers for signs of heat-related illness.

SUPERVISORS: Ensure shaded or air-conditioned areas for breaks are close to work area. Increase hydration and cool down breaks. Monitor closely new and returning employees and acclimate employees.

> 115°F EXTREME RISK

Work Limited to critical functions.

EMPLOYEES: Drink, at minimum, 4 but no more than 6 cups of water per hour.

SUPERVISORS: Assess type of work closely. Provide employees with personal cooling measures, i.e. cooling vests, work/rest cycles 30:30 minutes. Ensure buddy system in place, set up shade canopies over work areas in direct sunshine or move into shade, never leave employees unattended, use thermometers on all employees during rest periods and breaks.



HEAT ILLNESS PLAN



TRAINING

Employees shall be trained effectively prior to heat exposure in topics such as risk factors, importance of water consumption, methods of acclimatization, types of heat illness, employer compliance procedures and emergency response procedures. As well as the added burden of heat load on the body caused by exertion, clothing, and PPE.



HIGH HEAT

High-heat procedures shall be implemented when the temperature equals or exceeds 95 degrees Fahrenheit. Ensure that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. Observe employees for alertness and signs or symptoms of heat illness.



WATER

Employees shall have access to potable drinking water that is fresh, pure, suitably cool, and provided free of charge. The water shall be located as close as practicable to the areas where employees are working. Water shall be provided in sufficient quantity at the beginning of work to provide one quart per employee per hour.



EMERGENCY RESPONSE

Maintain effective communication by voice, observation, or electronic means at all times. Provide proper response to signs and symptoms of possible heat illness, including first aid measures and how emergency medical services will be provided. Contacting emergency medical services or transporting employees, and clear and precise directions to the work site.



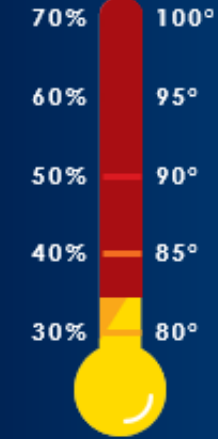
SHADE & REST

Employees shall be allowed and encouraged to take a preventative cool-down rest in the shade when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times and large enough to accommodate the number of employees on recovery or rest periods.



ACCLIMATIZATION

All employees shall be closely observed by a supervisor or designee during a HEAT WAVE. HEAT WAVE means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.



HEAT INDEX HEAT DISORDERS

- DANGER
- EXTREME CAUTION
- CAUTION
- SAFE

KNOW THE SIGNS OF HEAT EXHAUSTION

- HEADACHES
- HEAVY SWEATING
- COLD, MOIST SKIN,
- CHILLS
- DIZZINESS/FAINTING
- WEAK OR RAPID PULSE
- MUSCLE CRAMPS
- FAST, SHALLOW BREATHING
- NAUSEA, VOMITING OR BOTH

If you experience the signs of heat exhaustion, move to a cooler place, stop exercising, and cool down immediately.

IN CASE OF HEAT-RELATED ILLNESS:
CALL 911 OR LOCAL EMERGENCY SERVICES NUMBER AT ONCE

WHILE WAITING FOR HELP TO ARRIVE:

MOVE THE WORKER TO A
COOL SHADED AREA

LOOSEN OR REMOVE HEAVY
CLOTHING

PROVIDE COOL DRINKING
WATER

FAN AND MIST THE PERSON WITH
WATER



OSHA-NIOSH HEAT SAFETY TOOL
SCAN THE QR CODE

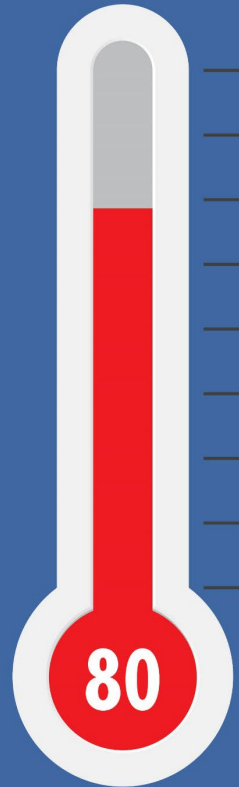
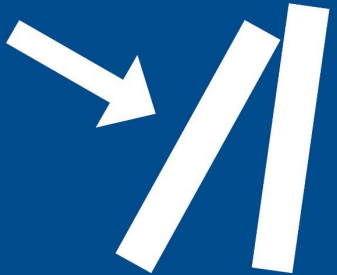
Heat Illness Prevention

The best way to avoid heat illness is through

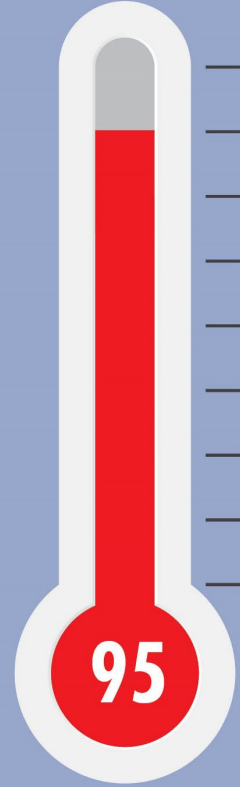
Knowledge + HIP Plan Implementation!



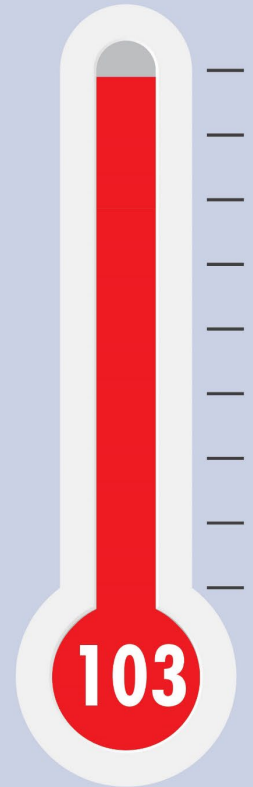
HEAT ILLNESS TRIGGERS



A temperature of 80
Degrees Fahrenheit
or greater requires
shade

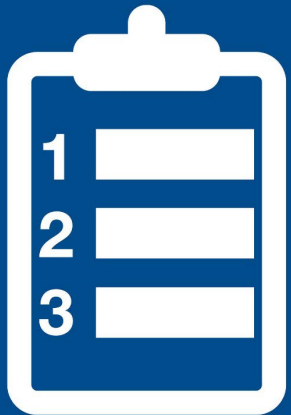


A temperature of 95
Degrees Fahrenheit
requires high heat
prevention measures
& work rest regimen,
as referenced



If Index exceeds 103
Degrees Fahrenheit,
assess all outdoor
work & implement
additional
precautions. 50:10
work rest periods

HEAT ILLNESS PREVENTION STEPS



1

DEVELOP

A plan outlining roles, responsibilities, and mitigation procedures

2

TRAIN

All personnel

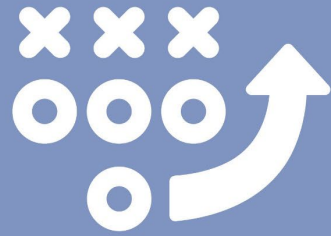
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IMPLEMENT

Heat illness prevention plan and controls, then verify effectiveness

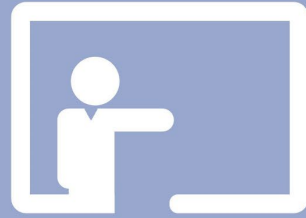
PROACTIVE

PREVENTATIVE ELEMENTS



1.

Heat Illness
Prevention
Plan



2.

Training



3.

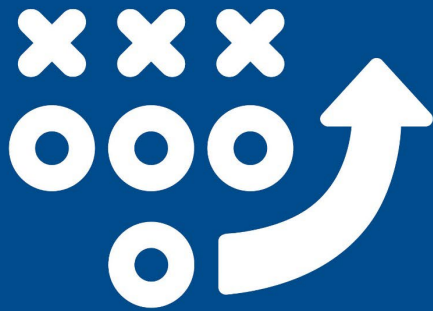
Water



4.

Work
Rest
Regimen
+
Shade

HEAT ILLNESS PREVENTION PLAN



- Each site should develop a plan to mitigate the risks related to heat illness
 - Define provisions for: supply of cool drinking water, shade, work/rest cycles, acclimatization, emergency procedures, weather monitoring, communication, training, supervisor responsibilities
- High-heat procedures: Employer should implement high-heat procedures when temperatures equal or exceed 95 degrees Fahrenheit. Observe heat index triggers for additional guidance. Use extreme caution and monitor personnel closely during heat waves and when heat index rises to high and extreme risk levels.

TRAINING



Employee training: Effective training topics shall be provided to each supervisory and non-supervisory employee before employee begins work that should reasonably be anticipated to result in exposure to the risk of heat illness.

Supervisors / Superintendents & Foreman need to understand their roles & responsibilities when it comes to protecting people from heat illness. HIP Plan, signs/symptoms, how to Handle Sick Employee, closely monitor new employees for acclimatization, monitor weather for high heat, and responsibility to ask workers to drink water regularly.

WATER



3

Provision of water: Employees shall have access to cool potable drinking water. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift.

- Cool Water is between 50-60 F
- Have plan for delivering ice
 - Who will deliver it
 - How often will they deliver
 - Contingency plans

WORK REST REGIMEN & SHADE



4

- Work/Rest cycles (or schedules) should be considered when heat index exceeds:
 - 95 F regular rest periods for cool down
 - 103 F heat index – Work/Rest cycle should be 50 min / 10 min every hour
 - 115 F – Work/Rest cycles of 40 min / 20 min every hour
- Shade required to be present when the temperature exceeds 80 degrees Fahrenheit. The employer shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling to accommodate 25% of the employees on the shift at any time, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other.

Handling a Sick Employee

- When an employee displays possible signs or symptoms of heat illness, a trained first aid worker or supervisor with check the sick employee and determine whether resting in shade and drinking cool water will suffice or emergency service providers will need to be called. Never leave a sick worker alone in the shade, as he or she can take a turn for the worse!
- When an employee displays possible signs or symptoms of heat illness and no trained first aid worker or supervisor is available at the site, emergency service providers must be called. Ensure everyone knows how to get in touch with Emergency Services. Contact information and who will make call.
- Emergency service providers will be called immediately if an employee displays signs or symptoms of heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face, does not look well or does not get better after drinking cool water and resting in shade or cool environment. Cool the worker down and provide first aid.
- If an employee does not look well, and displays signs or symptoms of severe heat illness, and the worksite is located more than 20 minutes away from a hospital contact emergency service providers and communicate the signs / symptoms of the victim and request air ambulance (air evac).



REMEMBER

PLAN



WATER



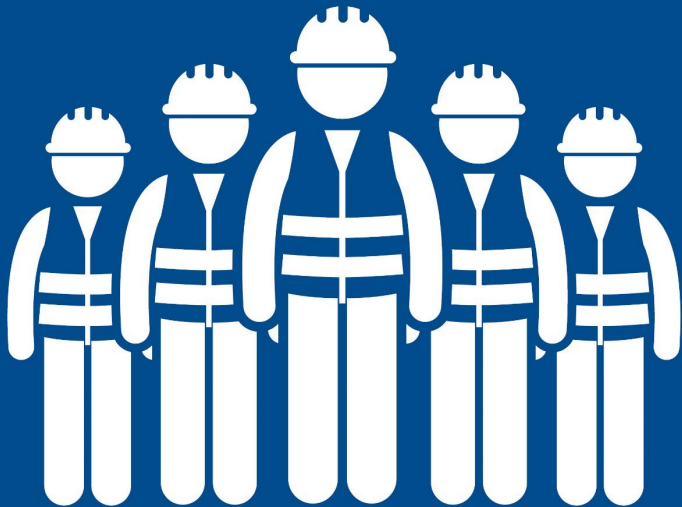
REST



SHADE



SUPERVISORS SHALL:



1. Be trained on HIP procedures and ensure a written plan is in place plus actively managed
2. Know how to track weather and monitor frequently
3. Instruct employees on water / rest regimens
*Direct personnel to hydrate
4. Train workers before working outdoors or in warm environments
5. Know steps to notify Emergency personnel
6. Know how to give “tailgate meetings” to reinforce heat illness prevention
7. Assign “buddy” or experienced worker (supervisor) to ensure comprehension of training

Let's Review

- Procedures for heat illness prevention shall be put in place by the employer?

A. True

B. False

Answer = True

- Heat Index risk rises with not only heat, but humidity?

A. True

B. False

Answer = True

- In areas that are not normally hot, heat prevention measures do not need to be followed?

A. True

B. False

Answer = False

Let's Review

- Cool Water must be provided for all employees ?

A. True

B. False

Answer = True

- It is required that shade be provided within a reasonable walking distance?

A. True

B. False

Answer = True

- Employee suffering from heat exhaustion sweats profusely?

A. True

B. False

Answer = False

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ALL THE TIME.

