MARYLAND DEPARTMENT OF LABOR

HEAT STRESS STANDARDS

Webinar Presented by:

Chesapeake Region Safety Council

December 11, 2024

PRESENTERS

CHESAPEAKE REGION SAFETY COUNCIL

Drew Libonate

Kate Cavanaugh

AGENDA

Scope & Definitions

Prevention & Management Plan

Acclimatization

High heat procedures

Training

Recordkeeping

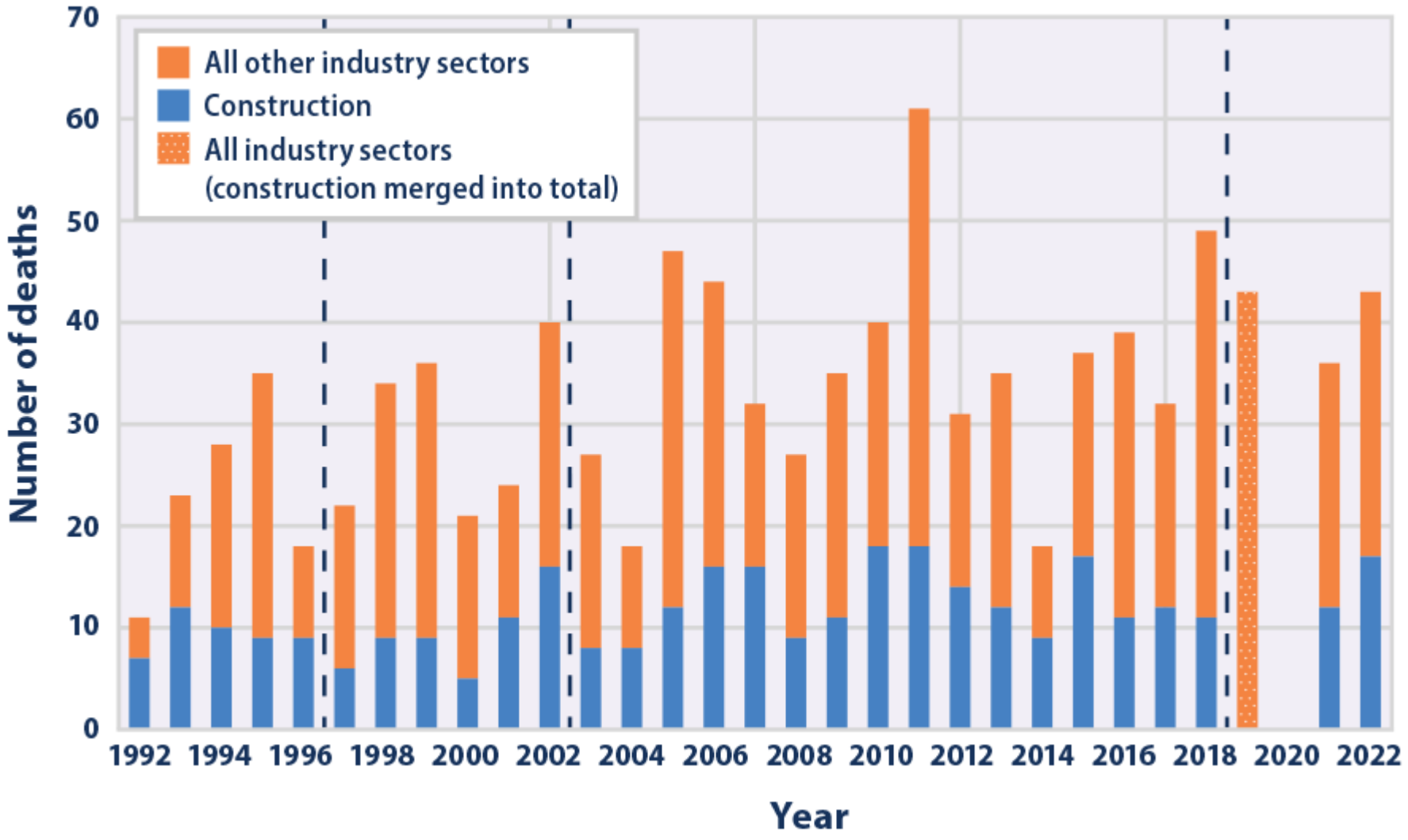
Health effects

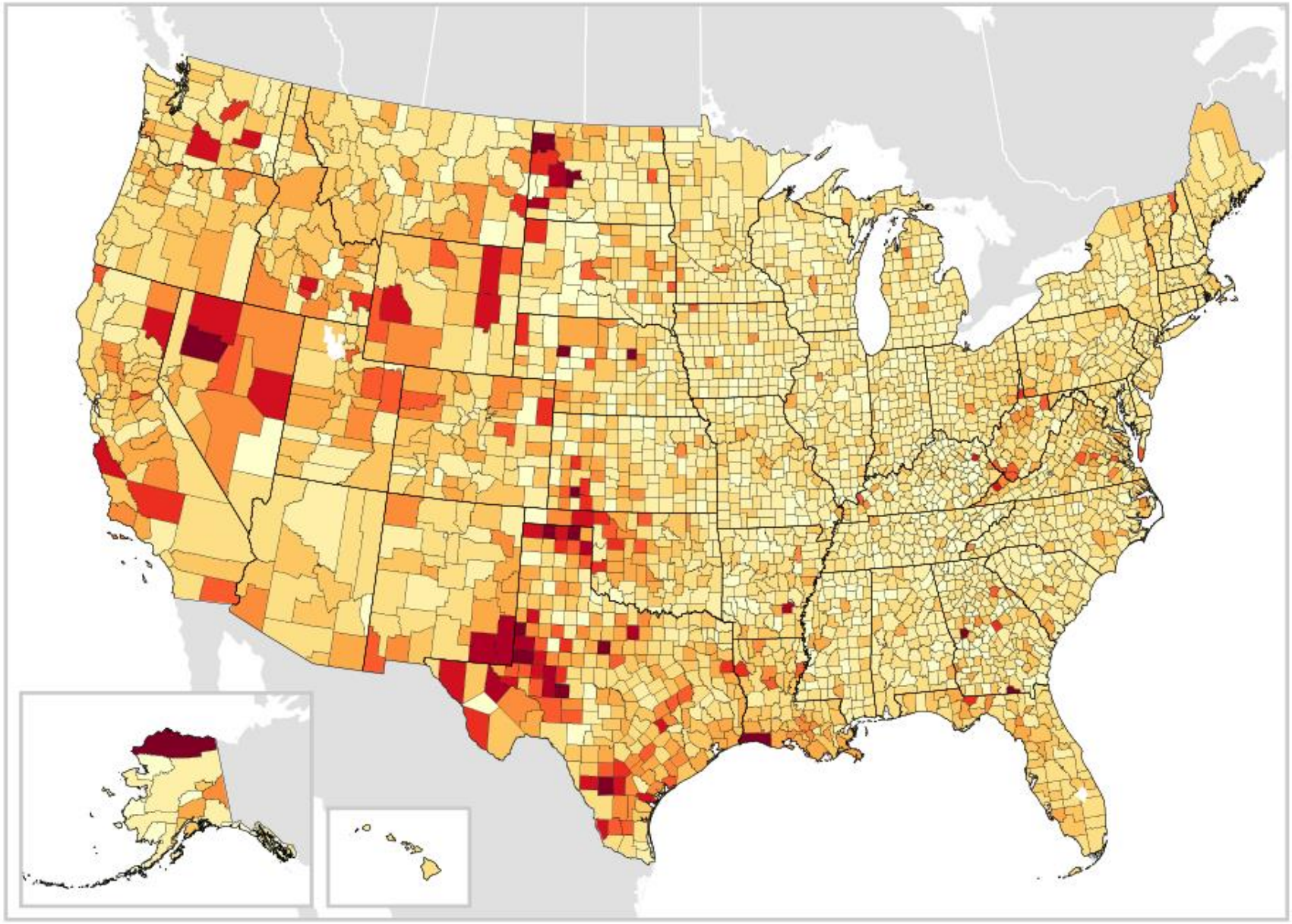
Q&A

WHY DO WE NEED A HEAT STRESS STANDARD?

HEAT-RELATED FATALITIES 1992-2022

SOURCE: BLS 2024




Percentage of workforce:
0 4 8 12 16 20 24 28 32 36 40

Maryland Heat stress standard

Went into effect September 30, 2024.

Focuses on preventing heat-related illness

Joins California, Colorado, Minnesota, Oregon, and Washington in publishing heat stress standards.

No federal OSHA standards

- General Duty Clause
- National Emphasis Program (04/08/2022)

SCOPE

Employers with employees who work indoors/outdoors in an area that measures or exceeds 80 degrees F.

Exceptions

- Emergency operations
- Essential services
- Incidental exposures (<15mins)

EXCEPTION

Buildings, structures, and vehicles with mechanical ventilation or fans

- Maintains the heat index below 80

DEFINITIONS

EMERGENCY OPERATIONS & ESSENTIAL SERVICES

- Emergency work involving:
  - Law enforcement
  - Medical
  - Fire and rescue
  - Utility/telecom restoration

ALTERNATE COOLING & CONTROL MEASURES

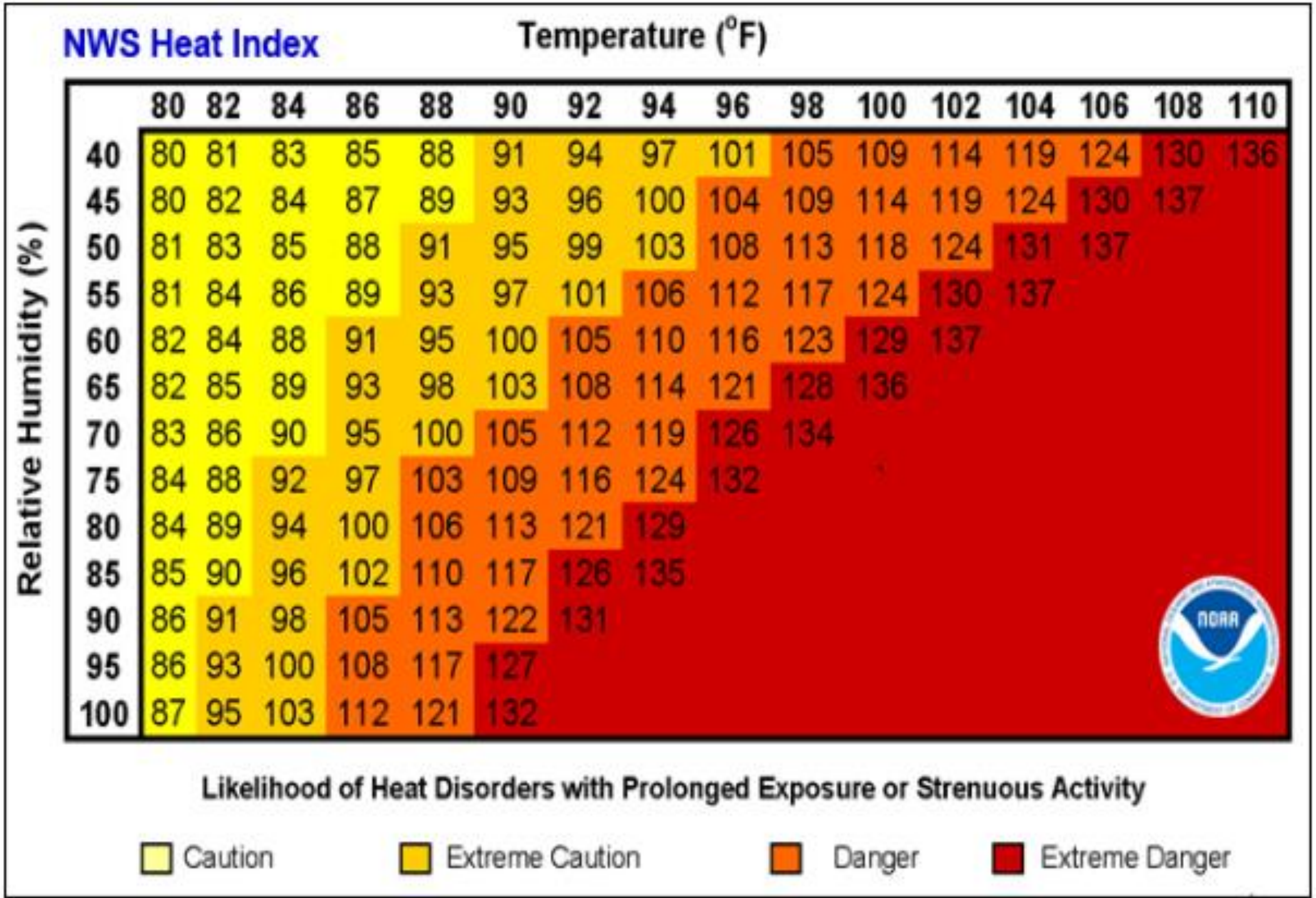
- Managing heat exposure through:
  - Job rotation
  - Ventilation
  - Misting equipment
  - Cooling vests and garments
  - Drinking water

HIGH HEAT CONDITIONS

Heat index equals or exceeds 90 degrees.

Heat index:

- Air temperature and relative humidity
- NWS Heat Index Calculator


NWS Heat Index
Temperature (°F)
Relative Humidity (%)
80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110
40 80 81 83 85 88 91 94 97 101 105 109 114 119 124 130 136
45 80 82 84 87 89 93 96 100 104 109 114 119 124 130 137
50 81 83 85 88 91 95 99 103 108 113 118 124 131 137
55 81 84 86 89 93 97 101 106 112 117 124 130 137
60 82 84 88 91 95 100 105 110 116 123 129 137
65 82 85 89 93 98 103 108 114 121 128 136
70 83 86 90 95 100 105 112 119 126 134
75 84 88 92 97 103 109 116 124 132
80 84 89 94 100 106 113 121 129
85 85 90 96 102 110 117 126 135
90 86 91 98 105 113 122 131
95 86 93 100 108 117 127
100 87 95 103 112 121 132
NOAA
Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity
Caution
Extreme Caution
Danger
Extreme Danger

Heat Index

Classification	Heat Index	Effect on the body
Caution	80°F - 90°F	Fatigue possible with prolonged exposure and/or physical activity
Extreme Caution	90°F - 103°F	Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
Danger	103°F - 124°F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
Extreme Danger	125°F or higher	Heat stroke highly likely

HEAT-RELATED ILLNESS PREVENTION & MANAGEMENT PLAN REQUIREMENTS

REQUIREMENTS

A written Heat Illness Prevention and Management Plan

Monitor the heat index

- Direct measurement
  - Required when no mechanical ventilation indoors
- Local weather reports
- NIOSH heat safety app

HEAT ILLNESS PREVENTION AND MANAGEMENT PLAN CONTENT

- Environmental considerations
- Hydration
- Heat-related illness recognition and monitoring
- Emergency response
- Shade access
- Rest in shade
- Acclimatization
- High-heat procedures

NIOSH HEAT SAFETY APP

Period up to 14 days
When newly exposed
Returning after 7+ days away
Monitor for signs of illness

ACCLIMATIZATION

Monitoring employees for heat-related illness

- Through regular communication via:
  - Phone
  - Radio
  - Buddy system
  - Effective observation

WRITTEN ACCLIMATIZATION SCHEDULE

- Gradually increases over 5-14 days
- Maximum 20% each day

OR

- NIOSH recommendations

OR

- combination of gradual intro and alternative cooling & control

List of employees who need it

Environmental Conditions

Anticipated workload

Clothing and PPE considerations

Use of alternative cooling and control measures

SHADE ACCESS

- Outside
- Open
- Exposed to air on at least 3 sides
- Sized for those who need it
- Employees can comfortably sit and store PPE
- Must provide cooling and control measures if shade is not available

WATER ACCESS

No cost

Close to the work area

32 oz per hour/person/day

At all times when work is being performed

HIGH HEAT PROCEDURES

HIGH HEAT PROCEDURES

Equals or exceeds 90

Minimum rest in shade

- 10 mins/2 hours (90-100)
- 15 mins/hour (100+) OR
- follow NIOSH recommendations

HIGH HEAT PROCEDURES

- Rest can be a meal period
- Cooling & control an alternative
  - Accessible at all times
  - Documented
  - Not supersede other requirements

EMERGENCY RESPONSE

Communication to supervisor/emergency services

Responding to signs/symptoms of heat-related illness

Monitoring

Providing care to employees with symptoms

TRAINING AND RECORDKEEPING REQUIREMENTS

TRAINING

- Employees and Supervisors
- Prior to first heat exposure
- Annually prior to exposure
- Immediately following an incident involving a suspected or confirmed heat-related illness

1. How work and the environment affect heat illness
2. Personal risk factors
3. Importance of acclimatization
4. Importance of water and rest
5. Types of heat-illnesses and their signs/symptoms
6. Importance of reporting symptoms to supervisor immediately
7. Employer procedures for communication/emergency management
8. Maintain training records for one year

Training Content

SYMPTOMS OF HEAT-RELATED ILLNESS, FIRST AID, AND EMERGENCY RESPONSE

Heat Exhaustion

ACT FAST

- Move to a cooler area
- Loosen clothing
- Sip cool water
- **Seek medical help if symptoms don't improve**

Dizziness

Thirst

Heavy Sweating

Nausea

Weakness

Confusion

Dizziness

Becomes Unconscious

Heat Stroke

ACT FAST

CALL 911

- Move person to a cooler area
- Loosen clothing and remove extra layers
- Cool with water or ice

***Heat exhaustion** can lead to heat stroke.*

***Heat stroke** can cause death or permanent disability if emergency treatment is not given.*

Stay Cool, Stay Hydrated, Stay Informed!

If a worker experiences:

Headache or nausea

Weakness or dizziness

Heavy sweating

Hot and dry skin
High body temperature

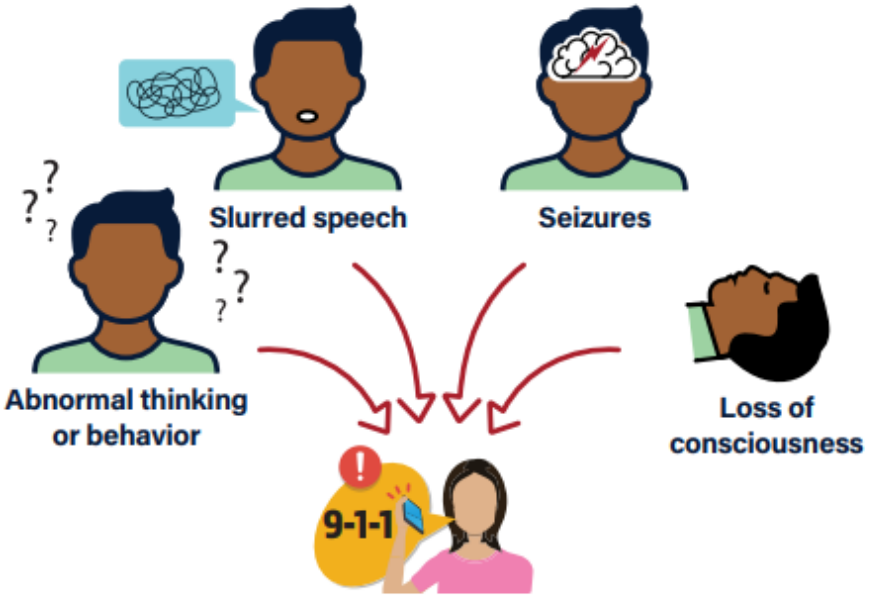
Thirst

Decreased urine output

Take these actions:

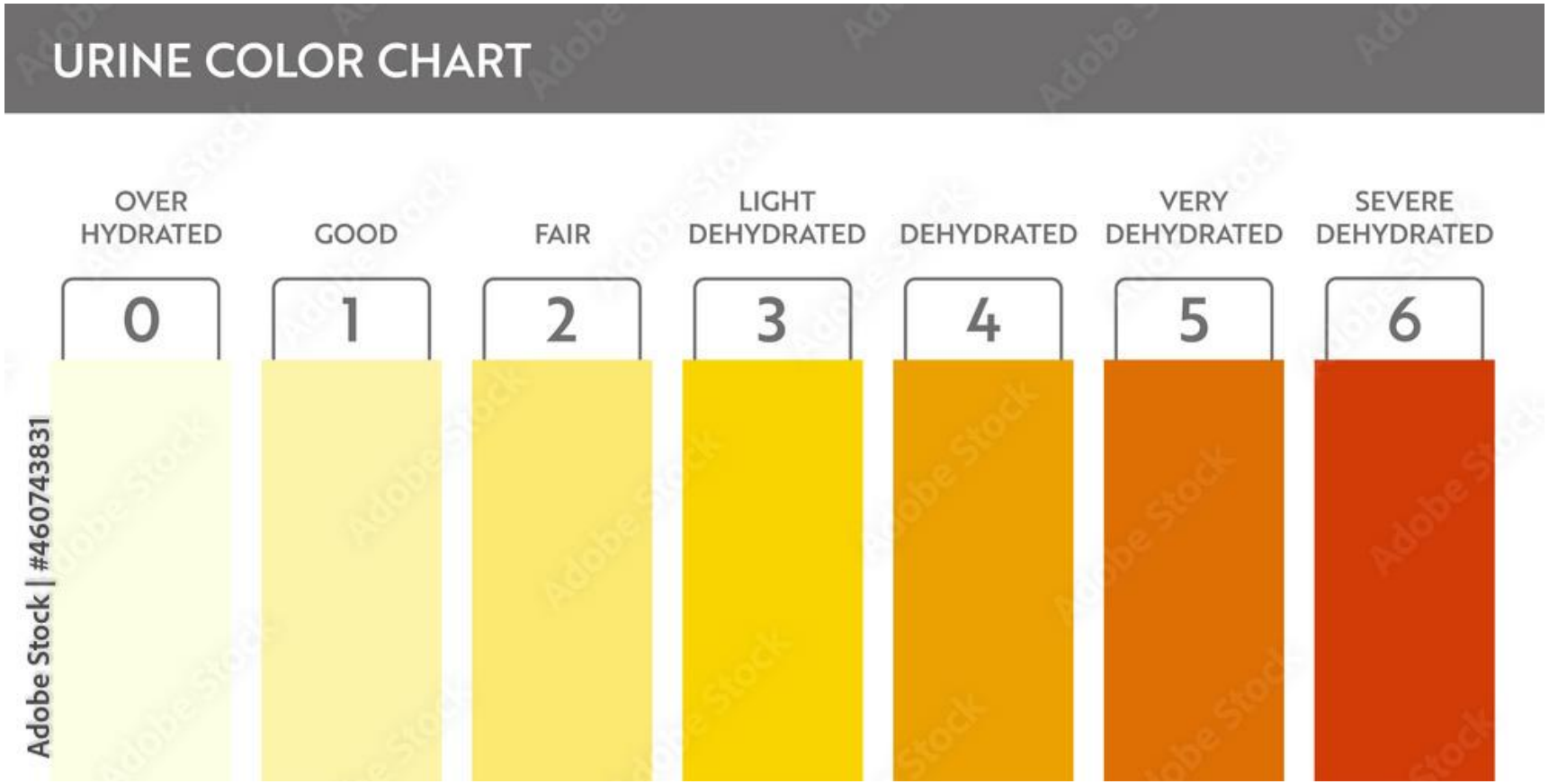
- Drink water
- Remove unnecessary clothing
- Move to a cooler area and use a fan, if available
- Cool with water and ice
- Do not leave alone
- When in doubt, call 911

Signs of a medical emergency



1. **Call 911 immediately**
2. **Cool the worker right away with water or ice**
3. Remove unnecessary clothing and give cool water to drink
4. Stay with the worker until help arrives

DON’T FORGET TO HYDRATE!



WATER. REST. SHADE.
The work can't get done without them.
osha.gov/heat

Maryland Heat Stress Standard Checklists

(This checklist includes requirements published as of November 2024.)

Summary of Heat-Related Illness Prevention & Management Plan Requirements	
Included in plan	**Requirements**
	Heat index monitoring
	acclimatization procedures and schedule
	monitoring of employees for heat-related illness
	high heat procedures
	shade or alternative cooling and control access
	rest schedules
	employee and supervisor training
	recordkeeping requirements
	Materials & training written in a manner all employees and supervisors can understand.

Heat-Related Illness Prevention & Management Plan – Monitoring the heat index	
Included in plan	**Requirements**
Without mechanical ventilation systems	
	Direct measurement
If mechanical ventilation is present	
	Direct measurement
	National Weather Service reports
	NIOSH heat safety tool app

Heat-Related Illness Prevention & Management Plan – General Requirements	
Included in plan	**Requirements**
Drinking water	
	32 oz. per person per hour per day
	How water will be provided
	Opportunities and encouragement for hydration
Shade	
	Description of the shaded/temperature controlled areas
	Sufficient time and space for # of employees to sit and store PPE
	Where and how shade will be provided
	Shade is outside, open, and exposed to air on at least 3 sides
	Cool, climate controlled areas used instead of shade

Rest	
	How rest will be scheduled
	Accounted for environmental conditions, workload, required clothing, and PPE
	How rest will be encouraged
Acclimatization	
	When newly exposed to heat
	When returning after 7 or more consecutive days away
Acclimatization schedule (choose one)	
	Gradually increases exposure time over 5-14 days (20% max increase each day)
	Uses NIOSH recommendations for acclimatization
	Uses a combination of gradual introduction and alternative cooling and control measures.
Monitoring Methods for heat-related illness	
	Phone
	Radio
	Buddy system
	Other effective means of observation
Written Acclimatization Schedule	
	Acclimated and unacclimated employees
	Environmental conditions
	Anticipated workload
	Impact of clothing and PPE on heat load
	Personal risk factors

	Use of alternative cooling and control measures (if implementing)
	Re-acclimatizing employees, as necessary
	Use of alternative cooling and control measures
Emergency Response Plan Procedures	
	Effective and accessible communication at all times
	How employees contact supervisor/emergency services
	How to response to a suspected or confirmed heat-related illness
	How employees are provided care for heat-related illness
	How to contact emergency medical services
	How to transport employees to emergency medical services
Training	
	Initially prior to first heat exposure
	Annual refresher training prior to first heat exposure
	Immediately following a confirmed or suspected heat-related illness at the work site
	Hazards of heat exposure and importance of prevention methods
	Work and environmental conditions which affect heat-related illness
	Personal risk factors affecting heat-related illness
	Importance of and methods of acclimatization
	Importance of water and rest breaks
	Signs and symptoms of heat-related illness (including heat exhaustion and heat stroke)
	Emergency response plan and reporting procedures
	First aid procedures for suspected or confirmed heat-related illness

Recordkeeping	
	Training date
	Name of attendees
	Summary/outline of content
	Kept for one year and made available upon request

Heat-Related Illness Prevention & Management Plan – High Heat Procedures	
Included in plan	**Requirements**
Rest Schedules	
90 - 100◦F (pick one and describe)	
	Rest at least 10 minutes every 2 hours
	Rest as recommended by NIOSH
	Alternative cooling and control measures readily available
Above 100◦F (pick one and describe)	
	Rest at least 15 minutes every hour
	Rest as recommended by NIOSH
	Alternative cooling and control measures readily available
Employee Monitoring Procedures	
	Communication methods (phone, radio, buddy system, observation)
	Work/rest schedule adjusted as needed for environmental conditions, workload, clothing, & PPE