

# Heat Stress Awareness



**Stakeholders Meeting**  
**7/26/23**

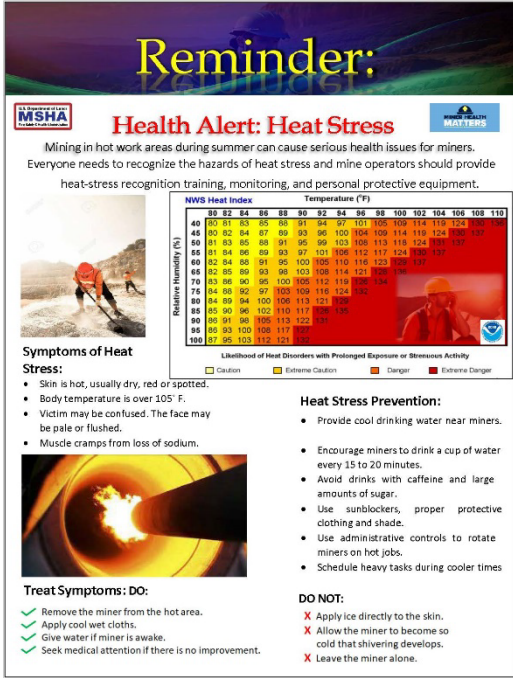
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# What is Heat Stress?

- **Heat Stress:** The total heat load on the body which results from exposure to:
  1. External Sources/Environmental Factors  
&
  2. Internal Metabolic Heat Production
- These 2 factors result in an increase in heat storage in the body which leads to heat strain.

# MSHA Guidance

- Issued a Heat Stress Health Alert May 2023  
(Recently Posted an Urgent Reminder 7/20/23)



**Reminder:**

**Health Alert: Heat Stress**

Mining in hot work areas during summer can cause serious health issues for miners. Everyone needs to recognize the hazards of heat stress and mine operators should provide heat-stress recognition training, monitoring, and personal protective equipment.

**Symptoms of Heat Stress:**

- Skin is hot, usually dry, red or spotted.
- Body temperature is over 105° F.
- Victim may be confused. The face may be pale or flushed.
- Muscle cramps from loss of sodium.

**Treat Symptoms: DO:**

- ✓ Remove the miner from the hot area.
- ✓ Apply cool wet cloths.
- ✓ Give water if miner is awake.
- ✓ Seek medical attention if there is no improvement.

**Heat Stress Prevention:**

- Provide cool drinking water near miners.
- Encourage miners to drink a cup of water every 15 to 20 minutes.
- Avoid drinks with caffeine and large amounts of sugar.
- Use sunblockers, proper protective clothing and shade.
- Use administrative controls to rotate miners on hot jobs.
- Schedule heavy tasks during cooler times

**DO NOT:**

- ✗ Apply ice directly to the skin.
- ✗ Allow the miner to become so cold that shivering develops.
- ✗ Leave the miner alone.

**NWS Heat Index**

Relative Humidity (%)		Temperature (°F)															
		80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	86	87	88	89	91	94	97	103	105	106	114	119	122
45	80	82	84	87	89	90	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	119	124	129	134	140	147	
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	130	137					
65	82	85	89	93	98	103	108	114	121	128	135						
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	130									
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												

Legend: ■ Caution ■ Extreme Caution ■ Danger ■ Extreme Danger

- Symptoms
- Treatment
- Prevention
- Heat Index Chart

<https://www.msha.gov/heat-stress-health-alert>

# Symptoms & Treatment

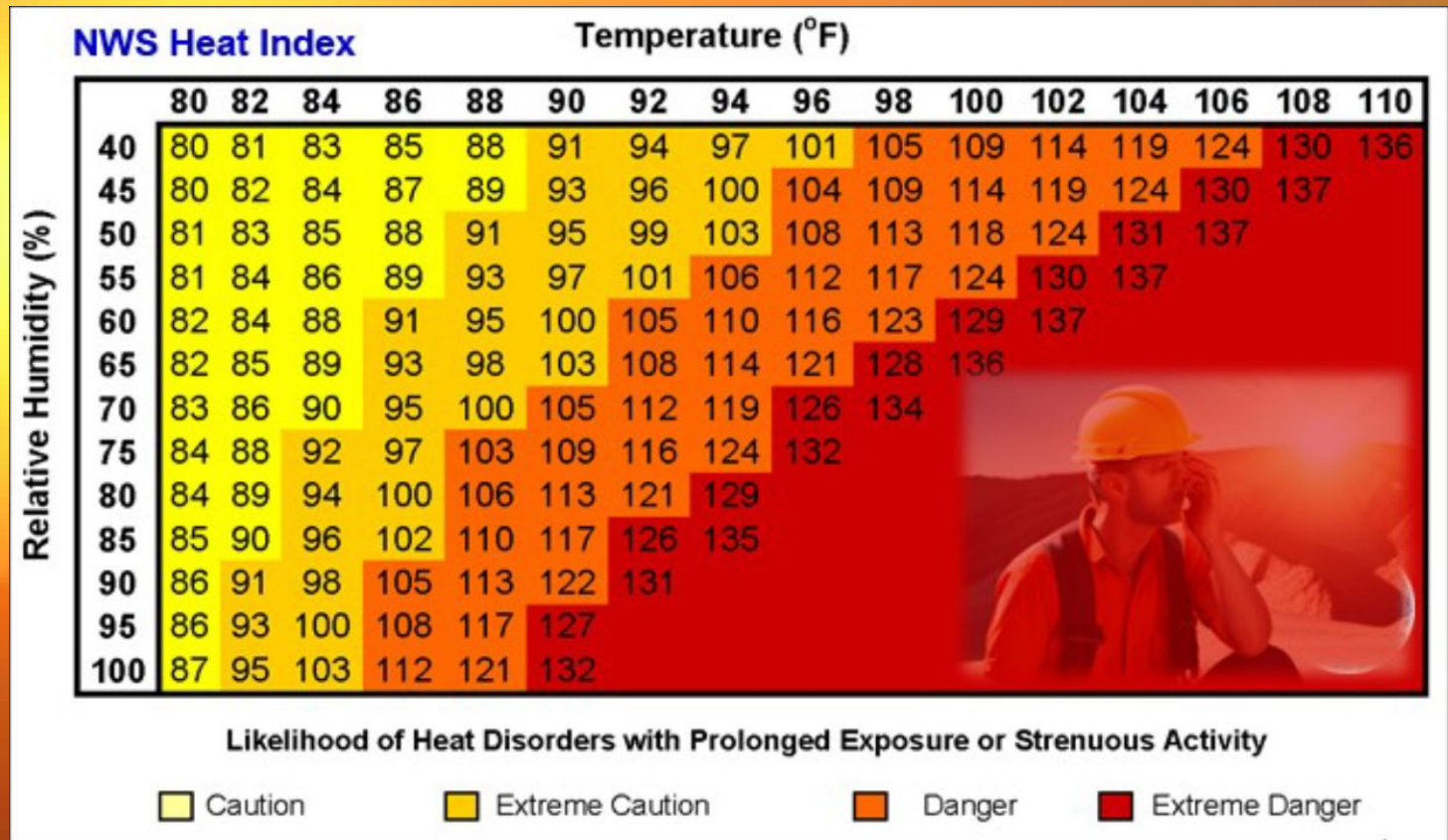
- Symptoms:
  - Skin is hot, usually dry, red, or spotted
  - Body temperature over 105° F
  - Confusion / Pale or Flushed Face
  - Muscle Cramps
- Treatments:

Do:	Do NOT:
✓ Remove the miner from the hot area	✗ Apply ice directly to the skin.
✓ Apply cool, wet cloths.	✗ Allow the miner to become so cold that shivering develops.
✓ Give water if the miner is awake.	✗ Leave the miner alone.
✓ Seek medical help if no improvement.	

# Prevention

- Provide cool drinking water near miners.
- Encourage miners to drink a cup of water every 15 to 20 minutes.
- Avoid drinks with caffeine and large amounts of sugar.
- Use sun blockers, proper protective clothing and shade.
- Use administrative controls to rotate miners on hot jobs.
- Schedule heavy tasks during cooler times.

# NWS Heat Index (HI) Risk Chart



Caution (80-90) – Fatigue with prolonged exposure/physical activity

Extreme Caution (90-105) – Sunstroke, heat cramps and heat exhaustion POSSIBLE

Danger (105-130) – Sunstroke, heat cramps, heat exhaustion LIKELY, heat stroke POSSIBLE

Extreme Danger ( $\geq 130$ ) – Heatstroke/sunstroke HIGHLY LIKELY with continued exposure.

# OSHA-NIOSH Heat Safety Tool App



- Uses your current location to provide a real-time heat index (HI) value.
  - “Feels Like” = RH + Ambient Temperature
- Provides precautionary recommendations based on the HI values
  - Hydration, Work/Rest, Emergency Planning & Response, Training
- Provides hourly forecast of HI values
  - Planning, Future Risk
- Provides more information on Signs, Symptoms and First Aid Measures

**Photo/info from:**

**<https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>**



# Thank You!

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