



# HEAT STRESS

May 2024

# WFS HEAT STRESS

## USA HEAT STROKE STATISTICS:

- **9,000+ deaths from 1979-2019 reported by OSHA, Heat Fatalities**
- **Heat-related deaths and illnesses are preventable. Despite this fact, more than 600 people in the United States are killed by extreme heat every year.**
- **Causes more deaths annually than hurricanes, lightning, tornadoes, floods, and earthquakes combined**









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## HEAT RELATED ILLNESSES:

- **HEAT CRAMPS**
- **HEAT EXHAUSTION**
- **HEAT STROKE**

## AM I HYDRATED?

Urine Color Chart

1		
2		If your urine matches the colors 1, 2, or 3, you are properly hydrated.
3		Continue to consume fluids at the recommended amounts.
4		If your urine color is below the <b>RED</b> line, you are
5		<b><u>DEHYDRATED</u></b> and at risk for cramping and/or a heat illness!!
6		<b><u>YOU NEED TO DRINK MORE WATER!</u></b>
7		
8		

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## HEAT CRAMPS

- **Caused by excessive loss of electrolytes**
- **Early warning sign of heat stress**
- **Painful cramps usually in legs or abdomen**
- **Stop activity, hydrate, rest in cool place**
- **Get medical attention if condition continues**

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## HEAT EXHAUSTATION

- The body's response to excessive water and electrolyte loss
- Stop activity and seek treatment immediately

### HEAT EXHAUSTION



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## HEAT STROKE

- **The body's cooling mechanism shuts down**
- **50% that reach the heat stroke stage die even with medical attention**



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## HEAT EXHAUSTION OR HEAT STROKE?

### HEAT EXHAUSTION SYMPTOMS

1. Faint or dizzy
2. Excessive sweating
3. Cool, pale, clammy skin
4. Nausea, vomiting
5. Rapid, weak pulse
6. Muscle cramps

### HOW TO TREAT IT

1. Move to cooler location
2. Drink water
3. Take a cool shower or use cold compresses



### HEAT STROKE SYMPTOMS

1. Throbbing headache
2. No sweating
3. Body temp above 103°  
Red, hot, dry skin
4. Nausea, vomiting
5. Rapid, strong pulse
6. May lose consciousness

### HOW TO TREAT IT

1. Get emergency help
2. Keep cool until treated

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Find further information at: <https://www.osha.gov/heat/>

The screenshot shows a web browser window displaying the OSHA website. The browser tabs include "Water, Rest, Shade. OSHA's Camp..." and "Heat Wave Safety | Heat Exhaust...". The address bar shows "osha.gov/heat/". The website header features the United States Department of Labor logo and social media icons for Facebook, Twitter, Instagram, RSS, Email, and YouTube. Below the header, the text "Occupational Safety and Health Administration" is displayed, along with navigation links for "CONTACT US", "FAQ", "A TO Z INDEX", "ENGLISH", and "ESPAÑOL". A navigation menu includes "OSHA", "STANDARDS", "TOPICS", and "HELP AND RESOURCES". A search bar labeled "SEARCH OSHA" is also present. The main content area features a large red banner with the text "WATER. REST. SHADE. Keeping Workers Safe in the Heat" and an image of a worker in a hard hat and safety vest holding a water bottle. Below the banner, there is a section for "OSHA's Campaign" with a sub-section for "NIOSH Heat Safety Tool Smartphone App" available for iPhone and Android. A link to "Learn about heat illness symptoms and prevention from our Heat Safety Page" is provided. The page also includes a section titled "Dangers of Working in the Heat" with a brief description of the risks. The Windows taskbar at the bottom shows the time as 8:41 AM on 6/18/2020.



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## HUMAN FACTORS

- **Poor nutrition**
- **Poor physical condition**
- **High and low % body fat**
- **Previous heat illness**
- **Lack of acclimatization**
- **Over 40**
- **Illness (diabetes, asthma)**
- **Pregnancy**
- **Diet plans**



## What is acclimatization?

In more common terms, the body needs time to adapt when temperatures rise suddenly, and an employee risks heat illness by not acclimating when a heat wave strikes or when starting a new job that exposes the employee to heat to which the employee's body hasn't yet adjusted.

**Remember** to take time to acclimate to your work environment.

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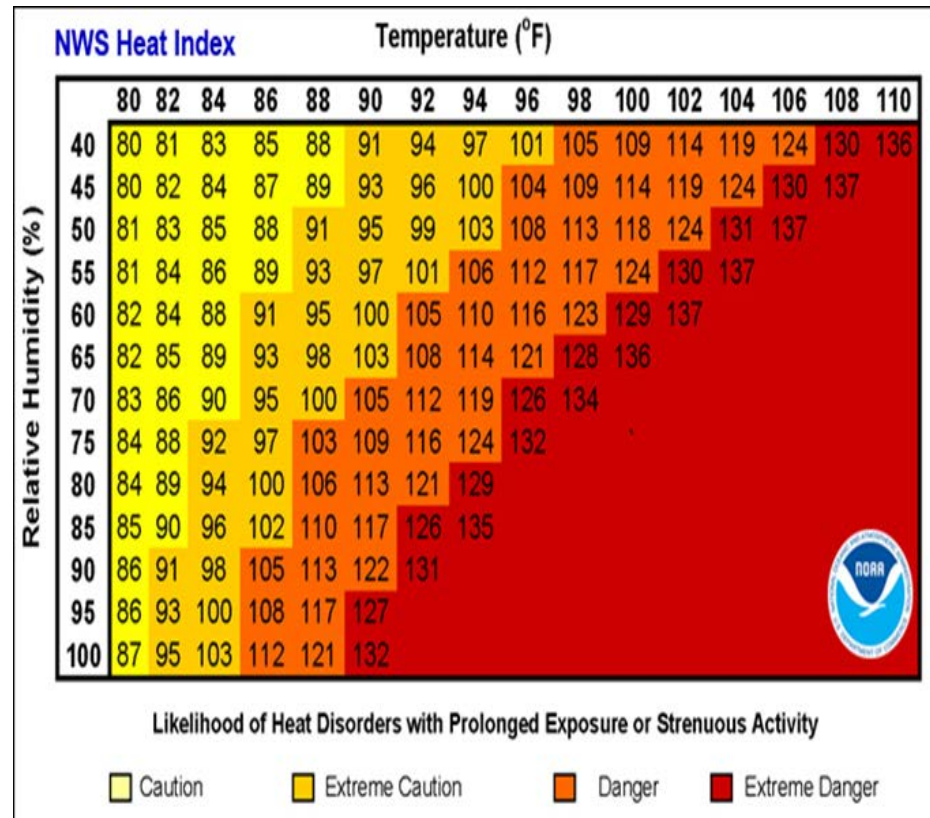
## MONITORING

### *Environmental monitoring*

- *WBGT (heat index= temp+humidity+radiant) used for guidance in establishing work/rest ratio*

### *Personnel monitoring*

- *Oral thermometer*
- *Ear probe*
- *Thermometer*
- *Core Temp*
- *Pulse rate*
- *Blood pressure*



**Monitor the Heat Index in your work environment**

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### COOLING WEAR



- Traditional ice vests
- Chem-pack vests, headbands, & bandanas
- Active cooling garment (water circulating)
- SAR and PAPR with active cooling systems
- New material development (breathable, lighter weight, waterproof)

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## ENVIRONMENTAL RISK FACTORS



- **Air temperature**
- **Direct sunlight**
- **Radiant heat**
- **Humidity**
- **Little air movement**

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## JOB RISK FACTORS



- Work intensity
- Work duration
- Location (roof, road, enclosure)
- Clothing (weight, impermeability)
- Respiratory protect

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## WORKER RESPONSIBILITY



- **Follow instructions of health care professionals**
- **Be watchful for symptoms (self and others)**
- **Properly hydrate (before, during, after)**
- **Get adequate rest**
- **Avoid alcohol, unnecessary medication, and caffeine**

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## MANAGEMENT RESPONSIBILITY

- Ensure that environmental conditions are monitored
- Adjust work practices as necessary
- Be watchful for signs of overexposure
- Assure workers are properly trained
- Conduct pre and post job safety meetings
- Assure that affected workers receive treatment
- Provide cool water, schedule rest breaks
- Monitor new employees (first 14 days in operations) or assign a “Buddy”





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## LOCAL EMERGENCY CONTACT PHONE NUMBERS



Please refer to your local **Worldwide Flight Services Heat Illness Prevention Program** for station specific information and your **Local Emergency Contact list**

