Heat-Related Injury Prevention
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• Many people are exposed to heat on the job, in both indoor and outdoor heat environments.

• Operations involving high air temperatures, radiant heat sources (e.g., sunlight, hot exhaust), high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for causing heat-related illness.
Factors That Put Workers at Greater Risk

Most outdoor fatalities, 50% to 70%, occur in the first few days of working in warm or hot environments because the body needs to build a tolerance to the heat gradually over time. The process of building tolerance is called heat acclimatization. Lack of acclimatization represents a major risk factor for fatal outcomes.

Source: OSHA Occupational Heat Exposure
# Factors That Put Workers at Greater Risk

<table>
<thead>
<tr>
<th>Category</th>
<th>Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>High temperature and humidity&lt;br&gt;Radiant heat sources&lt;br&gt;Contact with hot objects&lt;br&gt;Direct sun exposure (with no shade)&lt;br&gt;Limited air movement (e.g. enclosed spaces, no breeze, wind or ventilation)</td>
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<tr>
<td>Job-Specific</td>
<td>Physical exertion&lt;br&gt;Use of bulky or non-breathable protective clothing and equipment</td>
</tr>
<tr>
<td>Personal</td>
<td>Non acclimatized workers&lt;br&gt;Illness&lt;br&gt;Medications&lt;br&gt;Previous heat stress illness&lt;br&gt;Poor physical condition/fitness</td>
</tr>
</tbody>
</table>

Source: OSHA Occupational Heat Exposure
This chart does not take into account job-specific factors, as such, please consider the influence the items discussed on the previous slide may have when assessing your risk for the task to be performed.
Hot Weather Awareness

• Excessive exposure to heat can cause a range of heat-related illnesses, from heat rash and heat cramps to heat exhaustion and heat stroke. Heat stroke can result in death and requires **immediate medical attention**.

• Exposure to heat can also increase the risk of injuries because of sweaty palms, fogged-up safety glasses, dizziness, and burns from hot surfaces or steam.

Call 911 for heat stroke!
**Hot Weather Awareness**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heat Rash</strong></td>
<td>Clear or red bumps and itching. Try to work in a cooler, less humid environment when possible and keep the affected area dry.</td>
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<tr>
<td><strong>Heat Cramps</strong></td>
<td>Muscle cramps or spasms, pain usually in abdomen, arms, or legs. Stop work and cool down and rehydrate. Report this condition immediately and transport to admin. area.</td>
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<tr>
<td><strong>Heat Exhaustion</strong></td>
<td>Headache, nausea, excessive sweating, weakness, etc. Stop work and cool down and rehydrate. Report this condition immediately and transport to admin. area.</td>
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<tr>
<td><strong>Heat Stroke</strong></td>
<td>Confusion, fainting, seizures, hot and dry skin, high body temperature, racing heart, flushed skin means a medical emergency. Call 911 and activate the Emergency Action Plan.</td>
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</tbody>
</table>
Hot Weather Awareness

- Loss of water through sweating can cause dehydration.
- High humidity, PPE, and exertion can accelerate both heating and dehydration – even at lower temperatures.

**HEAT EXHAUSTION OR HEAT STROKE**

- Faint or dizzy
- Throbbing headache
- Excessive sweating
- No sweating
- Cool, pale, clammy skin
- Body temperature above 103°
- Red, hot, dry skin
- Nausea or vomiting
- Nausea or vomiting
- Rapid, weak pulse
- Rapid, strong pulse
- Muscle cramps
- May lose consciousness

**CALL 9-1-1**

- Get to a cooler, air conditioned place
- Drink water if fully conscious
- Take a cool shower or use cold compresses
- Take immediate action to cool the person until help arrives

@Weather.gov
@SacramentoOES
Weather.gov/heat
SacramentoReady.org
Hot Weather Awareness

• Hydration and regular meals are essential in preventing heat stress and dehydration. Consider replacing one (1) cup of water with one (1) cup of electrolyte drink.

• Ensure personnel are in a fit condition and have not experienced a previous heat illness. This should not preclude a person from work, but be aware, monitor closely and take precautions.

• Report any symptoms as soon as they are apparent. Activate Emergency Action Plan if appropriate.
OSHA-NIOSH Heat Safety Tool App

• A visual indicator of the current heat index and associated risk levels specific to your current geographical location.

• Precautionary recommendations specific to heat index-associated risk levels.

• An interactive, hourly forecast of heat index values, risk level, and recommendations for planning outdoor work activities in advance.

• Editable location, temperature, and humidity controls for calculation of variable conditions.

• Signs, symptoms, and first aid information for heat-related illness.

www.cdc.gov/niosh/topics/heatstress/heatapp.html
References

The National Institute for Occupational Safety and Health (NIOSH)
https://www.cdc.gov/niosh/topics/heatstress/heatapp.html

Occupational Safety and Health Administration (OSHA)
https://www.osha.gov/heat-exposure
Thank you.

Questions? Contact safety@cleanpower.org