Recognition, Management, and Prevention of Heat-Related Illness Among Agricultural Workers

Alexis Guild
Director of Health Policy and Programs
Farmworker Justice

Midwest Stream Forum for Agricultural Worker Health
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We will learn...

• Identify symptoms of heat-related illness
• Describe prevention strategies for heat-related illness
• Access resources to address acute heat-related illness among agricultural workers
Stories from the field
"We’re done at about 10 or 10:30 because after that it’s too hot to do the work. But every year you hear about workers who faint because of the heat and some even die. You’re in danger of fainting if you’re working too fast in the heat."

Lorena

*Stories from the Field*, documented by David Bacon
Heat stress

• Rise in core body temperature when the body can’t get rid of excess heat
• May lead to heat exhaustion, heat cramps, heat stroke, death

Work conditions create risk

• Hot, humid conditions
• Physically-demanding work
• Protective clothing and PPE needed for work, but trap heat
"It’s hard work because the foreman constantly rushes us... Many workers have died in the fields due to dehydration or illness. I have seen men and women faint. I was picking chiles once and a woman worker told the foreman she didn’t feel well. The foreman took her out of the field. Three days later it was 115 degrees out and another young woman, just 21 years old, fell ill... When we returned we saw the ambulance taking her away because she had fainted.”

Marisol

Stories from the Field, documented by David Bacon
Heat deaths among farmworkers

- Farmworkers are 1.4% of all employed workers in the U.S., but represent about 15% of occupational heat fatalities between 2002 and 2020.

Farmworkers as a percentage of employed workers

Farmworkers as a percentage of occupational heat-related fatalities

65 deaths* (2002 – 2020)

*Likely an undercount. Deaths in which heat was a contributing factor are not always recognized as heat-related. Criteria for cause of death classification also vary from one jurisdiction to another.

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Farmworkers are 20 times more likely to die from heat related illness than other workers.
"In addition to low pay, there are a lot of contractors out there that don’t allow workers a break at the required time, or even a break at all. At work I want the contractor to consistently let us take breaks at our scheduled times of 9:00 a.m. and noon. There are many contractors that don’t rehire us if we don’t work the way they demand. They speed up the machine and we’re expected to keep up."

Miguel

Stories from the Field, documented by David Bacon
Question:
How many states have a standard to protect workers from heat?
Heat Stress and Regulations

No National Heat Standard

States

California

Washington

Oregon

Minnesota (indoor)

Maryland 2022
Worker protection

- Only a few states have heat stress standards
- There is no federal heat standard
- NIOSH first proposed details of a potential heat standard to federal OSHA in 1972
- In October 2021 OSHA began the process to create a heat standard covering indoor & outdoor workers

Photo credit: Kay Chernush
Asuncion Valdivia

Heat Illness and Fatality Prevention Act
"I remember telling my husband that I didn’t want to go back to work. We were picking lettuce...We were following the machine, pulling empty boxes from it, and then lifting them back up once they were full. We were working in 110 to 115 degree heat. Not just anyone can do this job."

*Ramona*

*Stories from the Field*, documented by David Bacon
Question: Who are the most vulnerable to heat-related illness?
Who are the most vulnerable?

- Work outside
- Lower socio-economic status
- Children
- Pregnant woman
- Chronic illness
- Migrant
Packers

Restaurant Workers

Construction Workers

Farmworkers
Question: Is heat exhaustion the same as a heat stroke?
What are the symptoms of heat fatigue?
Heat cramps?
Heat exhaustion?
Heat stroke?
Internal Temperature

Recommended limit = 100.4°F

Normal = 98.6°F

Exhaustion

Cramps/Fatigue

Heat stroke = <105°F and altered mental state.
Heat Rash/Cramps/Fatigue

- Clusters of red bumps on skin
  - Often on neck, upper chest, folds of skin
- Cramps
- Pain
  - Usually in the stomach, legs and arms
Heat Exhaustion

- Cool, moist skin
- Heavy sweating
- Headache
- Nausea or vomiting
- Dizziness
- Light headedness
- Weakness
- Thirst
- Irritability
- Fast heart beat
Heat Stroke

- Fever (Hyperthermia) <105°F
- Confusion/Altered mental status
- Delerium
- Red or dry skin
- Lack of sweating despite heat
- Seizures
- Unconsciousness
- Death

The person’s internal temperature and mental state are what differentiate heat exhaustion from heat stroke.
What factors can affect heat stress?
Environment

Temperature

Humidity

Shade

Wind
Dehydration

½ of the workers were dehydrated before work.
¾ were dehydrated upon leaving work.
Prevention!
Water
Shade
Long-sleeved, cotton shirts, long pants, and a wide-brimmed hat will protect you the best!
Avoid Certain Drinks
Another case...
Acclimatization

Temperature

Task
Question: What should you do if a coworker is experiencing signs of heat-related illness?
Treatment

- Move to a shaded area
- Loosen or remove clothing
- Drink water
- Splash cool water on the body—especially on the chest
- SEEK MEDICAL ATTENTION
Emergencies: Dial 911

- Know your work address
- Explain the condition of the worker
- Offer the worker first aide

Inform your supervisor!
OSHA Employer Recommendations

• Employer should monitor conditions and implement and adjust a heat plan throughout the workday.

• To create a heat plan, the employer should:
  ✓ identify heat hazards;
  ✓ recognize early symptoms of heat stress;
  ✓ administer first aid for heat-related illnesses; and
  ✓ activate emergency medical services quickly when needed.

Protecting Workers from Heat Stress

Heat Illness
Exposure to heat can cause illness and death. The most serious heat illness is heat stroke. Other heat illnesses, such as heat exhaustion, heat cramps and heat rash, should also be avoided.

There are precautions your employer should take any time temperatures are high and the job involves physical work.

Risk Factors for Heat Illness
• High temperature and humidity, direct sun exposure, no breeze of wind
• Low liquid intake
• Heavy physical labor
• Waterproof clothing
• No recent exposure to hot workplaces

Symptoms of Heat Exhaustion
• Headache, dizziness, or fainting
• Weakness and wet skin
• Instability or confusion
• Thirst, nausea, or vomiting

To Prevent Heat Illness, Your Employer Should
• Establish a complete heat illness prevention program
• Provide training about the hazards leading to heat stress and how to prevent them.
• Provide a lot of cool water to workers close to the work area. At least one pint of water per hour is needed.
OSHA does not have a heat stress standard. Employers must provide workplaces free of excessive heat.

<table>
<thead>
<tr>
<th>Heat Index</th>
<th>Risk Level</th>
<th>Protective Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 91°F</td>
<td><strong>Lower (Caution)</strong></td>
<td>Basic heat safety and planning</td>
</tr>
<tr>
<td>91°F to 103°F</td>
<td><strong>Moderate</strong></td>
<td>Implement precautions and heighten awareness</td>
</tr>
<tr>
<td>103°F to 115°F</td>
<td><strong>High</strong></td>
<td>Additional precautions to protect workers</td>
</tr>
<tr>
<td>Greater than 115°F</td>
<td><strong>Very High to Extreme</strong></td>
<td>Triggers even more aggressive protective measures</td>
</tr>
</tbody>
</table>
Risk level: Lower

- Provide drinking water
- Plan ahead and provide worker heat safety training
- Encourage workers to wear sunscreen and protective clothing

Risk level: Moderate

- Review heat stress - how to prevent it, how to recognize it and what to do if someone is sick
- Schedule frequent breaks in a cool, shaded area
- Make sure workers adjust to climate
- Establish buddy system
Risk level: High

- Alert workers of high-risk conditions
- Limit physical exertion, adjust work activities to be less strenuous
- Establish and enforce work/rest schedules

Risk level: Extreme

- Conduct physiological monitoring - pulse, temperature
- Stop work if essential control methods are inadequate or unavailable
In Summary... Heat fatigue, heat exhaustion and heat stroke are different.

- Heat fatigue and exhaustion can be reversed.
- Heat stroke can lead to death, but it is preventable.
- Stay hydrated!
- Take breaks in the shade.
- Acclimate by gradually increasing the workload and taking more breaks during the first week of work.
- Eat foods that contain salt and electrolytes and avoid drinks that can dehydrate.
- Use the buddy system. Encourage each other to drink water, stay in the shade, and take breaks.
- Wear appropriate clothing.
- Stay up-to-date on the temperature each day.
- Know the signs and symptoms of heat-related illness. Teach workers about the dangers of heat and how to avoid serious injury.
Heat-Related Illness Clinician’s Guide

June 2021

Introduction

Agricultural workers are at significant risk for heat stress. Heat stress results when the body cannot get rid of excess heat and its core temperature rises.¹ Heat stress may lead to more severe heat illness including heat exhaustion, heat cramps, heat stroke, and even death if left untreated.² Agricultural work, which requires performing physically demanding work for long hours in hot and sometimes humid weather, places workers at high risk.
Heat Illness Prevention

What is heat illness?
Heat illness is a medical condition resulting from the body's inability to cope with a particular heat load and includes, but is not limited to, heat cramps, heat rash, heat exhaustion, fainting, and heatstroke. Prolonged or intense exposure to hot conditions and heavy physical work even in cooler conditions can lead to your body overheating. Symptoms of heat illness may not be recognized initially and can quickly progress.

Why is it important to know about heat illness?
Heat illness is preventable but, if left unchecked, could lead to death. People who work outside, especially in the summer, are exposed to heat and can get heat illness. Heat illness can also lead to injuries. Workers are more likely to get injured if they get tired or dizzy from the heat while working. Heat exposure can also lead to heatstroke, a condition that can be fatal. What you learn here will prepare you for helping your co-workers and yourself stay safe when working in hot weather.

https://deohs.washington.edu/pnash/heat_illness
www.migrantclinician.org
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- Current Guestworker Programs
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Thank you for your participation!
Alexis Guild, Director of Health Policy and Programs, Farmworker Justice
aguild@farmworkerjustice.org

Mayra Reiter, Project Director, Occupational Safety and Health, Farmworker Justice
mreiter@farmworkerjustice.org

Amy Liebman, Director of Environmental and Occupational Health, Migrant Clinicians Network
aliebman@migrantclinician.org