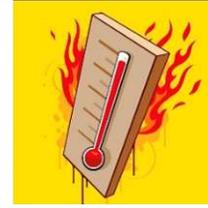


**HBACA Builder Safety Committee  
Heat Awareness Initiative  
April 2022**



**Initiative & Stand Down Kit April 2022  
Suggested Discussion Materials, Action Items & Event Schedule**

The HBACA is excited to announce that April is Heat Awareness Month. We are proud to present the third Initiative and Stand Down Kit!



**Elements of the Kit:**

**Suggestions for Implementation:** A summary of the game plan for April's HBACA Safety Committee Monthly Awareness Initiative and Group Stand Down Event, the week of April 18th, with some "added touches" you may want to consider.

**Tool Box Topics**

**Arizona Desert Climate Tool Box Talk #1** – This Tool Box Topic covers the dangers and different factors that can affect the body working in the extreme temperatures of the Arizona heat. It is important that all staff out in the heat understand our harsh Arizona working conditions.

**Exposure to High Temperatures Talk #2** – The effects of heat on the body and potential conditions/illnesses caused by exposure. Understanding and recognizing the symptoms of heat illness will provide the ability to take quick action.

**Heat Illness Prevention Tool Box Talk #3** – This topic presents information that will prepare you for helping yourself and your coworkers stay safe when working in hot weather. Heat illness is a matter of life and death and every death is preventable.

**Heat Illness Resources Tool Box Talk #4** – Included is a brief introduction to OSHA's Heat Index App. for both Android and Apple devices. Links to a variety of resources will provide material to educate employees about heat illness.



\*\*\*\*\*

## Distribution Network:

Committee Member Field Employees and, at each member builder's discretion, their Trade Partners. Builders are encouraged to distribute these accordingly and organize brief safety meetings/discussion sessions throughout their communities.

## Distribution/Implementation Dates:

All Committee Builders are asked to join us in our Heat Awareness campaign the Week of April 18th, 2022. In addition, feel free to break out the training topics over the four weeks of April.



**PRESENTED BY:**



# HBACA Builder Safety Committee

## Heat Awareness Initiative April 2022 Implementation

### Let's Go!

As we've discussed in our recent meetings, one goal of the HBACA Builder Safety Committee is to coordinate a monthly safety initiative that heightens awareness of a critical residential construction safety issue. To implement this program member-companies team up and take turns spearheading each monthly initiative. For this month's initiative, we take on Heat Awareness Safety. We hope you are as passionate as we are, about this vital topic!



### The Game Plan



For April 2022, we've prepared Tool Box Talks for distribution and implementation to our Committee membership and their field staff. We encourage you to distribute this information to all field staff. Our resource section contains hyperlinks to additional information that can be accessed via the internet.

We have divided the topic into four segments. This will allow a different Tool Box Talk each week for the month of April. Your Heat Awareness Stand Down can be presented as one main event the week of April 19<sup>th</sup> or divided among the four weeks.

### Topic Objectives

- Communicate the dangers of extreme heat.
- Communicate best protocols and practices to avoid heat illness.
- Taking time to educate all staff of the inherent dangers of working outdoors in the Arizona heat.
- Uniting with our trade partners to convey the message that each persons' well-being is paramount and safety is a core value.

## Objectives of Stand Down Event

- The week of April 18th, 2022, all Committee Builders will speak with one voice simultaneously in unison sending a consistent message to all our collective employees and trades –Heat Awareness is important! YOU ARE IMPORTANT!
- Send a message to all who participate: “Arizona Builders care about safety and take action to prevent injuries!”
- Set the tone for upcoming planned Monthly Safety Initiatives.



## Additional Suggestions to Consider

- Distribute and post the Stand Down Event Posters in all your locations starting April 5th, 2021.
- Consider posting copies not only in your Construction Offices but also in key locations throughout your communities where workers will see them – Examples: J-John doors, storage sheds, on existing lot or safety signs, etc.
- Have your CMs ask the lunch truck drivers to post them on their trucks.
- LET’S GET THE WORD OUT THERE!
- Prior to distributing Tool Box Talks, print them on card stock or have them laminated so that they’re not just a “throw-away item.”
- Make food part of the Stand Down Event! Pizzas, Burritos, or a barbecue with cold beverages (Gatorade, water, squenchers etc.) goes a long way towards relationship building. Spending \$50 or \$100 per community is money well spent!
- Turn the event into a Safety/Holiday/New Year/Trade Partner Appreciation celebration!

*Members are reminded that this information is offered for educational purposes only and is not intended to serve as the total project safety program or as a substitute for federal, state, or local laws and regulations.*

## HBACA Safety Committee April 2022

### Tool Box Talk #1

### *Arizona Desert Climate*

- Arizona’s high temperatures have the potential to cause heat stroke, dehydration and can affect people’s cardiovascular, respiratory and nervous systems.
- Our hottest months are June, July, and August. In 2020 our hottest day reached 118 in July.
- Temperatures reached the 100 degree mark the last week of April 2020 and didn’t drop below 100 degrees until mid-October. Last year Phoenix had 145 days where the temperature hit triple-digits, 53 days were over 110° and 14 days of 115° or higher.
- Although humidity isn’t a key player in Arizona it does factor into the equation during monsoon season.

		Extreme Danger	Danger	Extreme Caution	Caution	Most common in AZ																			
°F	RELATIVE HUMIDITY (%)																								
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100				
140	125																								
135	120	128																							
130	117	122	131																						
125	111	116	123	131	141																				
120	107	111	116	123	130	139	148																		
115	103	107	111	115	120	127	135	143	151																
110	99	102	105	108	112	117	123	130	137	143	150														
105	95	97	100	102	105	109	113	118	123	129	135	142	149												
100	91	93	95	97	99	101	104	107	110	115	120	125	132	138	144										
95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136								
90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122						
85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108				
80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91				
75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80				
70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	70	71	71	71	71	71	72			

<https://www.osha.gov/heat/heat-index>

**Excessive Heat Watch:** Prepare. Extreme heat is expected within the next 2 to 7 days.

**Excessive Heat Warning:** Act! Extreme heat is occurring or imminent.

Note: Working in direct sunlight adds up to 15 degrees to the heat index.

It is vitally important that everyone be aware of the potential for heat illness. We encourage everyone to check the forecast prior to their work shift and to continue to check throughout the day as temperatures climb.

# HBACA Safety Committee April 2022

## Tool Box Talk #2

### *Exposure to High Temperatures*

When it's hot your body pumps a higher volume of blood to your skin causing you to sweat. As the sweat evaporates off the skin it helps cool you. This works best when the air is cooler than your body temperature. If your body is struggling to cool off your core temperature may rise and your heart will have to work harder as it pumps blood to meet the additional demands of stimulating a sweat response. When your body can no longer keep up with these demands you are at risk for a heat illness.

#### **Heat exposure causes the following illnesses:**

**Heat edema** is swelling which generally occurs among people who are not acclimatized to working in hot conditions. Swelling is often most noticeable in the ankles. Recovery occurs after a day or two in a cool environment.

**Heat rashes** are tiny red spots on the skin which cause a prickling sensation during heat exposure. The spots are the result of inflammation caused when the ducts of sweat glands become plugged.

**Heat cramps** are sharp pains in the muscles that may occur alone or be combined with one of the other heat stress disorders. The cause is salt imbalance resulting from the failure to replace salt lost with sweat. Cramps most often occur when people drink large amounts of water without sufficient salt (electrolyte) replacement.

**Heat exhaustion** is comes in two ways, water depletion and salt depletion. Signs and symptoms of heat exhaustion include: heavy sweating, weakness, dizziness, visual disturbances, intense thirst, nausea, headache, vomiting, diarrhea, muscle cramps, breathlessness, palpitations, tingling and numbness of the hands and feet. Recovery occurs after resting in a cool area and consuming cool drinks (e.g., water, clear juice, or a sports drink).

**Heat syncope** is heat-induced dizziness and fainting induced by temporarily insufficient flow of blood to the brain while a person is standing. It occurs mostly among unacclimatized people. It is caused by the loss of body fluids through sweating, and by lowered blood pressure due to pooling of blood in the legs. Recovery is rapid after rest in a cool area.

**Heat stroke** is the most serious type of heat illness. Signs of heat stroke include body temperature often greater than 105°F, and complete or partial loss of consciousness. Sweating is not a good sign of heat stress as there are two types of heat stroke - "classical" where there is little or no sweating (usually occurs in children, persons who are chronically ill, and the elderly), and "exertional" where body temperature rises because of strenuous exercise or work and sweating is usually present.

Heat stroke requires immediate first aid and medical attention. Delayed treatment may result in death.



## What are symptoms and first aid steps for heat exhaustion?

Symptoms of heat exhaustion may start suddenly and include:

- Nausea or irritability.
- Dizziness.
- Muscle cramps or weakness.
- Feeling faint.
- Headache.
- Fatigue.
- Thirst.
- Heavy sweating.
- High body temperature.
- 



First aid for heat exhaustion includes:



- Get medical aid. Stay with the person until help arrives.
- Move to a cooler, shaded location.
- Remove as many clothes as possible (including socks and shoes).
- Apply cool, wet cloth or ice to head, face or neck. Spray with cool water.
- Encourage the person to drink water, clear juice, or a sports drink.

## What are the symptoms and first aid steps for heat stroke?

Heat exhaustion may quickly develop into heat stroke. Symptoms of heat stroke include:

- Hot, dry skin or profuse sweating.
- Confusion.
- Loss of consciousness.
- Seizures.
- Very high body temperature.

First aid for heat stroke includes:

- **Call 911 immediately. Heat stroke is a medical emergency.**
- Stay with the person until help arrives.
- Move to a cooler, shaded location.
- Remove as many clothes as possible (including socks and shoes).
- Wet the person's skin and clothing with cool water.
- Apply cold, wet cloth or ice to head, face, neck, armpits and groin.
- Do not try to force the person to drink liquids.



Know the signs of heat-related injuries in workers on the construction site. The attitude of being tough and pushing through the pain could have lethal consequences. Have a plan and supplies in place for dealing with heat stress on your construction site.

# HBACA Safety Committee April 2022

## Tool Box Talk #3

### *Heat Illness Prevention*

#### **WATER, REST, SHADE**



- **Water**

Being thirsty is an early sign that you are already slightly dehydrated. Drink enough water based on temperature and level of exertion. Avoid caffeinated and sugary beverages (Energy drinks, Coffee, Sodas, etc.)

Replace electrolytes when necessary (Gatorade, Pedialyte, Squenchers, etc.)

- **Rest**

Rest breaks are necessary to help cool the body. Rotate shifts for high exertion tasks. Pay attention to how you are feeling.



- **Shade**

Shade structures should be erected when no other shade is available for workers to gain relief from direct sunlight giving the body a chance to cool down.



#### **ACCLIMATE**

- Make acclimatization a routine part of heat awareness preparedness.
- Gradually increase time working in the heat over a 7–14-day time span.
- For those new to outdoor work, time in the heat should increase in increments no greater than 20% per day.
- Even seasoned workers should take time to acclimate as the temperatures start to rise.

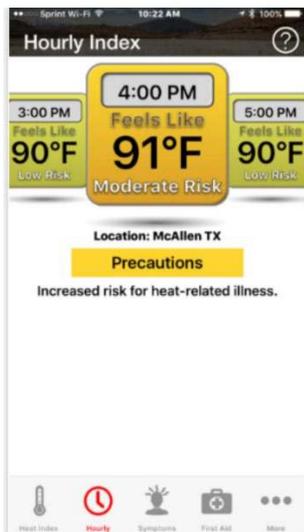
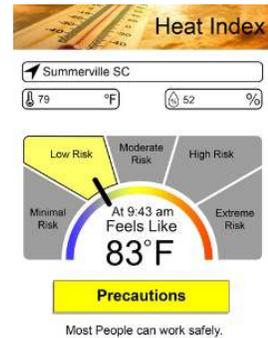
# HBACA Safety Committee April 2022

## Tool Box Talk #4

### Heat Illness Resources

#### HEAT INDEX APP

- The Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature.
- OSHA has created a Heat Index app available for use with an Android or Apple device.
- Provides a visual indicator of the current heat index and associated risk levels specific to your current location.
- Provides precautionary recommendations specific to heat index associated risk levels.
- Displays an interactive, hourly forecast of heat index values, risk level, and recommendation for planning outdoor work activities in advance.



## Additional Resource Links

**Heat Index App Installer:** [OSHA-NIOSH Heat Safety Tool App | NIOSH | CDC](#)

**Heat Illness Prevention Campaign:** [OSHA Heat Illness Prevention Campaign - YouTube](#)

**Heat Illness Prevention Campaign (Spanish):** [Campaña de OSHA para prevenir las enfermedades a causa del calor en trabajadores - YouTube](#)

**OSHA Heat Illness Prevention (Outdoor Workers) Publications:**

[https://www.osha.gov/publications/bytopic/heat-illness-prevention-\(outdoor-workers\)](https://www.osha.gov/publications/bytopic/heat-illness-prevention-(outdoor-workers))

**CDC Hydration Info Sheet:** <https://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/2017-126.pdf>

**Tips for preventing Heat related illness:** [Tips for Preventing Heat-Related Illness | Natural Disasters and Severe Weather | CDC](#)

**U.S National Library of Medicine (Medline Plus):** <https://medlineplus.gov/heatillness.html>

**University Of Washington (Heat Illness Toolkit):**

<https://deohs.washington.edu/pnash/heat-toolkit>

## 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 or 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
- Irritability or confusion
- Thirst, nausea, or vomiting

### Symptoms of Heat Stroke

- May be confused, unable to think clearly, pass out, collapse, or have seizures (fits)
- May stop sweating

### 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.



For more information:  
**OSHA<sup>®</sup>** Occupational  
Safety and Health  
Administration  
[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)

OSHA 3164-06R 2014

- Modify work schedules and arrange frequent rest periods with water breaks in shaded or air-conditioned areas.
- Gradually increase workloads and allow more frequent breaks for workers new to the heat or those that have been away from work to adapt to working in the heat (acclimatization).
- Routinely check workers who are at risk of heat stress due to protective clothing and high temperature.
- Consider protective clothing that provides cooling.



### How You Can Protect Yourself and Others

- Know signs/symptoms of heat illnesses; monitor yourself; use a buddy system.
- Block out direct sun and other heat sources.
- Drink plenty of fluids. Drink often and BEFORE you are thirsty. Drink water every 15 minutes.
- Avoid beverages containing alcohol or caffeine.
- Wear lightweight, light colored, loose-fitting clothes.



### What to Do When a Worker is Ill from the Heat

- Call a supervisor for help. If the supervisor is not available, call 911.
- Have someone stay with the worker until help arrives.
- Move the worker to a cooler/shaded area.
- Remove outer clothing.
- Fan and mist the worker with water; apply ice (ice bags or ice towels).
- Provide cool drinking water, if able to drink.

**IF THE WORKER IS NOT ALERT or seems confused, this may be a heat stroke. CALL 911 IMMEDIATELY and apply ice as soon as possible.**

**If you have any questions or concerns, call OSHA at 1-800-321-OSHA (6742).**



For more information:  
**OSHA<sup>®</sup>** Occupational  
Safety and Health  
Administration  
[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)

# HEAT STRESS Work/Rest Schedules

Using work/rest schedules can decrease the risk of heat illness

## Sample Work/Rest Schedule for Workers Wearing Normal Clothing\*

The NIOSH work/rest schedule is based on air temperature, with adjustments for direct sunlight and humidity. It may not be applicable to all worksites. Other work/rest schedules are available, some of which are based on Wet Bulb Globe Temperature.

See reverse for temperature adjustments for the NIOSH work/rest schedule and examples of light, moderate, and heavy work.

Temperature (°F)	Light Work Minutes Work/Rest	Moderate Work Minutes Work/Rest	Heavy Work Minutes Work/Rest
90	Normal	Normal	Normal
91	Normal	Normal	Normal
92	Normal	Normal	Normal
93	Normal	Normal	Normal
94	Normal	Normal	Normal
95	Normal	Normal	45/15
96	Normal	Normal	45/15
97	Normal	Normal	40/20
98	Normal	Normal	35/25
99	Normal	Normal	35/25
100	Normal	45/15	30/30
101	Normal	40/20	30/30
102	Normal	35/25	25/35
103	Normal	30/30	20/40
<b>104</b>	<b>Normal</b>	<b>30/30</b>	<b>20/40</b>
105	Normal	25/35	15/45
106	45/15	20/40	Caution
107	40/20	15/45	Caution
<b>108</b>	<b>35/25</b>	<b>Caution</b>	<b>Caution</b>
109	30/30	Caution	Caution
110	15/45	Caution	Caution
111	Caution	Caution	Caution
112	Caution	Caution	Caution

### Things you need to know:

- Continuous work in the heat is not advisable—you must take rest breaks periodically to allow your body to cool down.
- A variety of work/rest schedules are available that can be adapted to your worksite. Relying on self-pacing alone may not be sufficient.

### Example

A worker performing heavy work in 104 °F temperatures should work for 20 minutes and rest for 40 minutes.

### Example

A worker performing moderate work at 108 °F should use extreme caution! The risk for heat injury is high in this situation.

\* From NIOSH Criteria for a Recommended Standard, Occupational Exposure to Heat and Hot Environments, <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf>. Assumptions: workers are physically fit, well-rested, fully hydrated, under age 40, and environment has 30% humidity and perceptible air movement.

# HEAT STRESS Work/Rest Schedules

## Temperature Adjustments for this Work/Rest Schedule

Adjust the temperature in the table based on:

Environmental conditions	AND	Humidity
<ul style="list-style-type: none"> <li>• Full sun (no clouds): Add 13 °F</li> <li>• Partly cloudy/overcast: Add 7 °F</li> <li>• No shadows visible, in the shade, or at night: No adjustment</li> </ul>		<ul style="list-style-type: none"> <li>• 40% humidity: Add 3 °F</li> <li>• 50% humidity: Add 6 °F</li> <li>• 60% humidity or more: Add 9 °F</li> </ul>
<p><b>Example Adjustment</b>            Conditions at a mine are 90 °F, with partly cloudy skies and 50% humidity. Adjust the table as follows:            Add 7 °F for partly cloudy skies and 6 °F for 50% humidity, to arrive at 103 °F.</p>		



Photo by © Thinkstock

## Examples of Work at Different Intensity Levels

### Light work

- Operating equipment
- Inspection work
- Walking on flat, level ground
- Using light hand tools (wrench, pliers, etc.). However, this may be moderate work depending on the task
- Travel by conveyance

### Moderate work

- Jack-leg drilling
- Installing ground support
- Loading explosives
- Carrying equipment/supplies weighing 20–40 pounds
- Using hand tools (shovel, fin-hoe, scaling bar) for short periods

### Heavy work

- Climbing
- Carrying equipment/supplies weighing 40 pounds or more
- Installing utilities
- Using hand tools (shovel, fin-hoe, scaling bar) for extended periods

## Case Study: Use of Work/Rest Schedule

A crew was shoveling ore out from under the primary conveyor at a surface mine in Arizona in August. The high temperature that day was 113 °F. The crew was rotating in 10-minute shifts and hydrating between shifts. Coworkers noticed signs of heat illness in two employees, and they were transferred to the medical station for evaluation. From there they were sent to the hospital, where they were given IV saline and released home. Both employees recovered after rehydration at the hospital.

### Lessons Learned

In extreme heat, even a work/rest schedule may not eliminate the risk of heat illness. In this case, use of work/rest schedules, frequent hydration, and team monitoring helped keep this situation from becoming even more serious. Without those safety precautions the workers could have potentially suffered more severe heat illness, possibly including heat stroke, which is life threatening.



## **Remember, when it's hot:**

**H**eed your body! watch for symptoms!

**E**nsure you're drinking enough!

**A**adjust your activity level– slow down!

**T**ake clothing/PPE into account!



# Heat Stress



**If possible, stay out of the sun.**



**Know the signs and symptoms of Heat Stress.**

- Dizziness**
- Headache**
- Weakness**
- Rapid Heartbeat**
- Nausea**
- Cramps**
- Chest Pain**
- Labored Breathing**



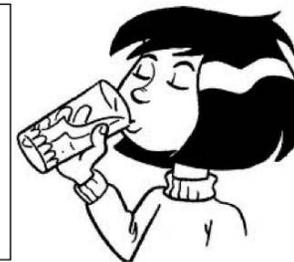
**When the weather is hot, avoid caffeine**

**COOL DOWN, whenever possible**



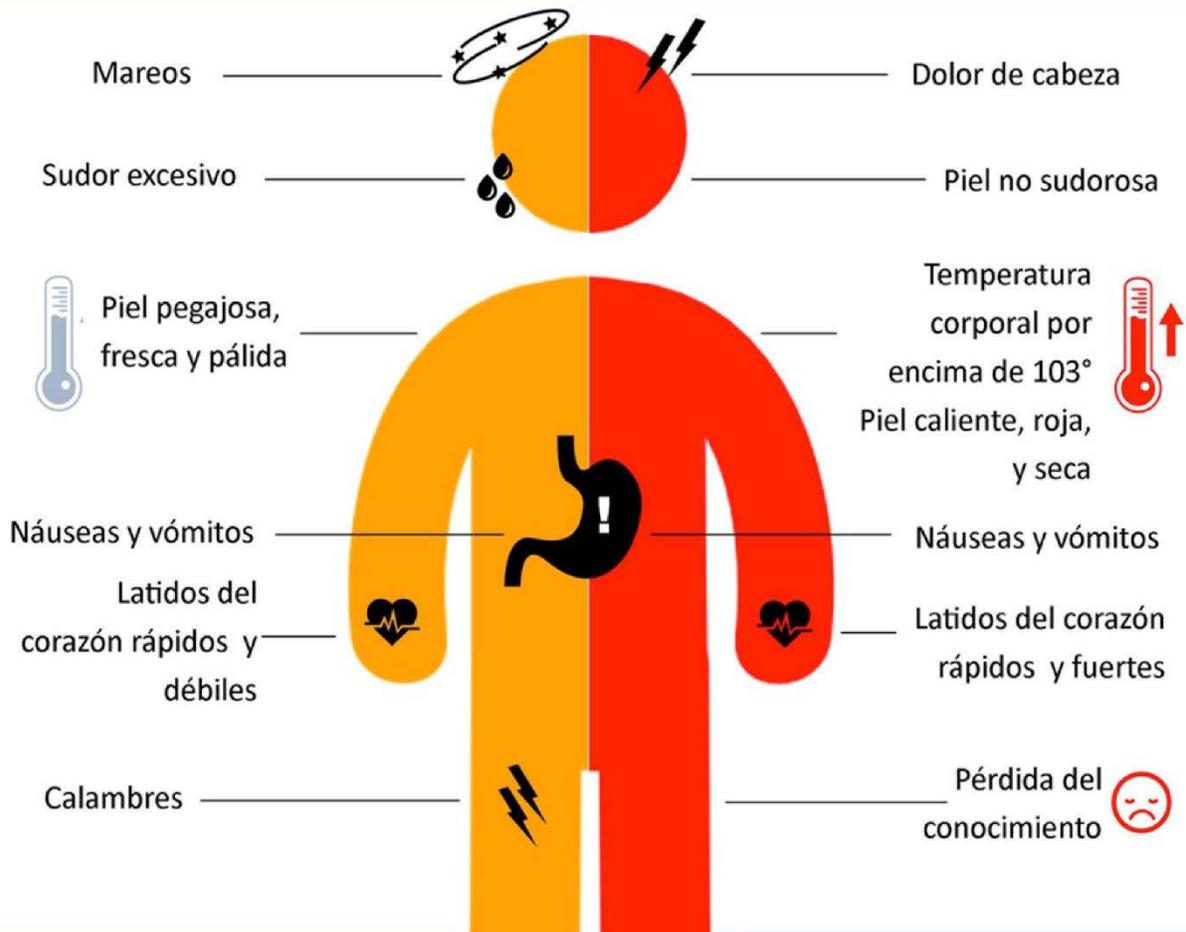
**Wear loose, breathable clothing such as cotton. If you must work in the sun, wear hats and use sun screen.**

**Maintain proper hydration. Drink small amounts of water frequently. Avoid feeling thirsty.**



## AGOTAMIENTO DEBIDO AL CALOR

## INSOLACIÓN



- Descanse en un lugar fresco y sombreado
- Tome mucha agua y otros líquidos
- Báñese con agua fría o utilice compresas frías

# Llame al 9-1-1

- Tome acción inmediatamente para enfriar su temperatura corporal hasta que llegue la ayuda necesaria



# PROTECT YOUR WORKERS FROM HEAT STRESS

## Develop an acclimatization plan

**Acclimatization** is the result of beneficial physiological adaptations (e.g., increased sweating efficiency and stabilization of the circulation) that occur after gradual increased exposure to a hot environment.

**TIP 1**

**Gradually increase** the time spent in hot environmental conditions over a 7–14 day period.

**TIP 2**

**For new workers**, the schedule should be no more than 20% exposure to heat on day 1 and an increase of no more than 20% exposure on each additional day.

**TIP 3**

**For workers who have had previous experience** with the job, the acclimatization schedule should be no more than:

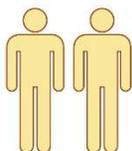
DAY 1	DAY 2	DAY 3	DAY 4
50% EXPOSURE	60% EXPOSURE	80% EXPOSURE	100% EXPOSURE



## Set up a buddy system

Check your workers routinely to make sure...

- they make use of readily available water and shade.
- they don't have heat-related symptoms.



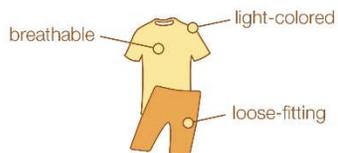
## Schedule and encourage frequent rest breaks...

...with water breaks in shaded or air-conditioned recovery areas.



## Emphasize the need for appropriate clothing

Encourage workers to wear clothing that is...



Cotton clothing can be soaked in water to aid cooling.

**4** Be aware that protective clothing or **personal protective equipment** may increase the risk of heat stress.



## Encourage workers to drink plenty of fluids...

...such as drinking small amounts of water before becoming thirsty.

During moderate activity in moderately hot conditions, workers should drink about...

 **1 cup every 15 to 20 minutes.**

 Learn more about heat stress at: [www.cdc.gov/niosh/topics/heatstress](http://www.cdc.gov/niosh/topics/heatstress)

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health

