

# Heat Stress

## GENERAL DISCUSSION

You don't have to work in the desert to suffer from too much heat on the job. Even in a moderate climate, many operations on construction sites are hot and uncomfortable. But discomfort isn't the only problem. If you don't take the proper precautions, heat can give you a rash, make you pass out, or even kill you. Sometimes you reach your limit, and you just have to know that it's time to stop. You or a crewmember may want to add a personal story about heat.

Next, discuss with the crew when and where heat could be a problem at this particular job site:

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After each question, give the crew time to suggest possible answers. Use the information following each question to add points that no one mentions.

1. What signs and symptoms might you notice if your body is too hot?
  - First, you may notice that you are tired and less mentally alert. This increases the danger of accidents.
  - You may sweat. The body produces sweat so the evaporation will cool you off. Sweating isn't as effective if the air is very humid, because not as much sweat evaporates.
  - Heat rash is possible. You get it when your sweat glands swell and get plugged up.
  - You can get sunburn if you're in direct sunlight too long without using a sunscreen product on your skin. Sunburn can be painful and may even lead to skin cancer.
2. If you don't pay attention to these early symptoms and get out of the heat, you can get heat stress. What does heat stress do to your body?

The first symptom is usually heat cramps. If you don't replace the fluids and salts (called electrolytes) that you lose by sweating, you may get muscle pain or muscle spasms. These are most common in the arms, legs, back, and stomach.

Heat exhaustion can follow. Your whole body (especially your circulatory system) is extremely stressed. Some possible symptoms are:

1. Pale, flushed face and neck
2. Clammy skin
3. Heavy sweating
4. Fatigue
5. Shortness of breath
6. Headache, dizziness, or fainting
7. Nausea and vomiting
8. Rapid heartbeat and breathing

Heat stroke is the most serious stage of heat stress. Your body temperature shoots up. 50% of people with heat stroke die. Symptoms are:

1. Dizziness and confusion
2. Red, hot, dry skin
3. Nausea and vomiting
4. Very little sweating
5. Rapid pulse
6. High body temperature (around 105° F)
7. Convulsions
8. Fainting

Anyone with heat stroke must be taken to a doctor or hospital immediately.

3. What is the best treatment for the different stages of heat stress?

1. Heat cramps - Stop work, drink fluids, and rest in a cool area. Drinking electrolyte solutions may also help.
2. Heat exhaustion - Give first aid by moving the person to a cool place to rest. Remove as much clothing as possible. Give the person water. Drinking electrolyte solutions may also help. Don't allow the person to get chilled, and treat for shock if necessary. Get medical help.
3. Heat stroke - Call 911 to get an ambulance immediately. Immerse the person in cool water or ice.

4. Some people are more likely to get heat stress than others. Why?

You have a higher risk of heat stress if:

1. You are not physically fit.
2. You are overweight.
3. You have a chronic illness like heart disease or diabetes.

4. You are dehydrated from diarrhea, a fever, or not drinking enough water.
  5. You wear heavy or tight clothing.
  6. You wear some kinds of personal protective equipment (PPE) on the job. Some PPE (like a full body suit) is hot. Other PPE (like a respirator) increases the stress on your body in other ways, making it harder for the body to fight the heat.
  7. You are not used to working in heat. The more you work in heat, the more your body gets used to it. This is called becoming acclimatized to heat.
  8. You drink alcohol or take drugs (either illegal drugs or prescription drugs).
5. How long does it take to become acclimatized?
1. It usually takes 4 to 7 days of regular exposure to heat. But everyone is different.
  2. You shouldn't do strenuous work all day on a hot job until you've become acclimatized.
  3. When you are acclimatized, your body temperature and heart rate will be lower. You will sweat more, but your sweat will be less salty so you won't lose as much salt.
  4. You lose acclimatization in a few weeks if you stop working in the heat.
6. What precautions do we need to take on the site to prevent heat stress?

**In addition to providing this training, the company will**

1. Assign strenuous work during cooler parts of the day.
2. Give new hires that are not acclimatized lighter work during their first week.
3. Rotate workers in strenuous, hot jobs so no one is exposed too long.
4. Shield or enclose sources of heat (like furnaces) to minimize radiant heat.
5. Provide water-cooled garments or ice-packet vests where necessary.
6. Keep first aid supplies and equipment available.

**Workers should**

1. Drink a lot of cool water (or an electrolyte solution). You may need a quart an hour or more, depending on conditions. Drink even if you don't feel thirsty. Point out where drinking water and break areas are located on this site.
2. Take frequent breaks in an air-conditioned or shaded area.
3. Wear appropriate clothing when you're in the sun. The best clothing is a loose, lightweight cotton shirt and pants in a light color. Wear a wide-

- brimmed hat in the sun. Wear a lightweight long-sleeve shirt and long pants if it's over 95° F.
4. Use a sunscreen product to protect your skin from ultraviolet rays in sunlight. It should have a sun protection factor (SPF) of at least 15. (Check the label.)
  5. Take frequent cool showers, if possible.
  6. Stay physically fit.
  7. Limit your use of alcohol. Ask your doctor about prescription drugs you're taking.

7. How can we be sure the heat is affecting no one on the site too much?

1. Use the buddy system. Watch your coworker for signs of heat stress.
2. Know what to do if you or your coworker shows any symptoms.
3. Notify your supervisor and stop work if you notice any major symptoms.

### **OSHA Regulations**

The safety measures we've talked about are included in our company's Safety and Health Program, as required by OSHA. At this time, there are no specific OSHA regulations on exposure to heat. I have a Checklist of recommended safety measures. If you'd like to know more, see me after the meeting.

### **Company Rules**

(Only if applicable) We have some additional company rules about heat on the job.

### **Discuss company rules**

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## **GENERAL SAFETY REVIEW**

This is a time to review all safety concerns, not just today's topic. Keep your notes on this page before, during and after the safety meeting.

Are you aware of any safety hazards from any other crews? Point out any hazards other crews are creating that this crew should know about. Tell the crew what you intend to do about those hazards.

Do we have any other safety business? Discuss any past issues or problems. Report any progress of investigations and action taken.

Have there been any accidents, near misses or complaints? Discuss any accidents, near misses, and complaints that have happened since the last safety meeting. Also recognize the safety contributions made by members of the crew.

Please remember, we want to hear from you about any health and safety issues that come up. If we don't know about problems, we can't take action to fix them.

## **ENDING THE MEETING**

Circulate Sign-Off Form.

Assign one or more crew member(s) to help with next safety meeting.

Refer action items for follow-up.

Do you have any Safety Recommendations?

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Do you have any Job Specific Topics you would like us to discuss?

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Comments:

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# SAFETY TALKS REVIEW

## Hazard Identification

1. The company has a written Safety and Health Program that meets all OSHA requirements. It includes identification of hazards on the site involving exposure to heat, as well as regular inspections, accident investigation, and correction of hazardous conditions.
2. Tasks, which require exposure to heat, have been identified.

Describe tasks on this job site involving exposure to heat:

(a) Is work done outdoors in hot temperatures? Which jobs? How hot is it? Is heat a problem all-day or part of the day?

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(b) Is work in hot indoor areas? Which Jobs?

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## Training

Workers have been trained in the following:

1. Health effects of heat stress.
2. Signs and symptoms of heat cramps, heat exhaustion, and heat stroke.
3. Proper precautions to prevent heat illnesses.
4. Effect of alcohol and drugs on the risk of heat illness.
5. Proper use of protective clothing and equipment.

## Work Practices

1. Workers are rotated in hot, strenuous jobs to minimize heat stress.
2. Strenuous work is done during cooler parts of day (early mornings or evenings), where feasible.
3. New hires that are not acclimatized are given lighter work during the first week on the job site.

4. There is plenty of cool, potable water readily available on the site. Workers drink a quart an hour or more, depending on conditions and their level of exertion.
5. Workers have been informed that they are to take a break and notify the foreman if they feel symptoms related to heat stress.
6. Workers performing jobs that require constant attention (e.g., equipment operators), and workers wearing hot personal protective equipment, are given frequent breaks. In very hot conditions, breaks are taken in an air-conditioned area.
7. If the source of heat is radiant (e.g., a furnace wall), a barrier or shielding is used if possible.
8. Workers use the 'buddy system' to recognize signs of heat illness in each other (including weakness, unsteady gait, irritability, disorientation, and changes of skin color).
9. First aid supplies and equipment are available.

### **Protective Clothing and Equipment**

1. Workers wear loose, light-colored, lightweight cotton clothing and wide-brimmed hats when in the sun.
2. They always keep on lightweight long-sleeve shirts and long pants if the temperature is over 95° F.
3. When in the sun, workers use sunscreen products with a sun protection factor (SPF) of at least 15. (SPF will be indicated on the container.)
4. If the source of heat is radiant (e.g., a furnace), workers wear reflective clothing and cover all exposed parts of the body.
5. Workers are provided water- or air-cooled garments, ice-packed vests, or wetted over garments in extremely hot environments.