

## INTRODUCTION TO JOB HAZARD ANALYSIS (JHA)

Job Hazard Analysis (JHA) is the process of taking a close, critical look at each step of a process or operation with an eye toward identifying and correcting the hazards or potential accidents in each step. It's a simple technique, which creates a "buy-in" on the part of people doing the job and ensures that they will do the job the same way and safely each time.

A JHA can also be conducted as part of the planning for a new job or process. Prospective operators can sit in a planning session with engineers, designer, technical staff (e.g., safety, environmental, occupational health), and supervisors to talk through how a new operation should work. This can eliminate the hazards before the cost of development makes it much more expensive and it gives clear work steps for use in debugging and training.

The benefits of a JHA of existing jobs are many:

- Many accident-causing hazards are eliminated.
- It provides a standard, written, carefully considered, *safe* directions for how to do the job for use in job orientation/training.
- It allows for refresher instructions on infrequent/periodic jobs.
- Workers, teams, and supervisors know better how the *total* job is done.
- Job methods improve, efficiency increases, quality is enhanced and costs drop.
- The operator is kept closely involved in safety.

Before the JHA is started, decide who's going to be involved. Ideally, all those involved with the job should work together on the project so that there is comprehensive input and complete buy-in. If that is not possible, be sure that those doing the job at least have the opportunity to provide input and review.

**STEP ONE:** Select the job. Don't make it too broad (e.g., make a desk) nor too narrow (e.g., pushing a button). Those suitable would be those a line supervisor would normally assign. Priority should be given to those with the worst accident record; those which tend to produce disabling injuries, ones with high severity potential, and new jobs.

**STEP TWO:** Break the job into successive steps. Describe concisely what is being done. Pick an operator who is experienced and cooperative to help and tell him/her that the objective is to study the job, not the individual, to make it safer for them. Work through the process, asking the operator what he/she does next and why. Record the observation in the left-hand column of the attached form using action words (lift, pull, close) and tell what object is receiving the action (lever, cover, arm). Finally, check with the operator to be sure that the steps are correct and in the right order.

**STEP THREE:** Identify the hazards in each step of the process. Can anyone be caught in, on, or by the objects? Can they slip or trip? Is straining possible? Are there environmental hazards? Is layout or placement a problem? Are tools and equipment adequate and in good repair? Will a change in one step create a hazard in another? Once the hazards are identified, check again with the operator and anyone else familiar with the job.

**STEP FOUR:** Eliminate the hazards. Find creative and effective ways to eliminate the hazards and prevent the potential accidents. Find a better way to do the job. Start with the goal of the job and work along several routes to the goal finding the one, which is not only the safest, but also the most economical and practical. Change the physical conditions, which create the problem move something, change a work height, install a guard. Change the job procedure. Have the job done less frequently if exposure is a problem (especially in maintenance operations). As with the previous steps, check solutions with the operator. Watch him/her in operation and carefully evaluate whether the steps and actions match the completed JHA. At this stage, it might also be helpful to record the steps on video for use in future training.

Once the JHA is complete, use it, don't just file it away. If possible, post it on the job, such as near the operator controls. Make it an integral part of the job write-up. Review and update it periodically, perhaps each year. Consult with others whenever an accident occurs on a JSA-covered job and either revise it or insure that the correct procedure is being followed.

For more detailed information on JHAs, refer to Federal OSHA Publication #3071, which can be viewed/downloaded at [www.osha.gov](http://www.osha.gov).



**Job Hazard Analysis Worksheet**

Job:

Analysis By:

Reviewed By:

Approved By:

Date:

Date:

Date:

**Sequence of Steps**

**Potential Accidents or Hazards**

**Preventative Measures**

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(COMPANY NAME)

## CELL PHONE SAFETY POLICY

It is the policy of this company to provide communication technology capabilities for all employees to facilitate productivity and safety. When employees are entrusted with any technology, it is their responsibility to utilize safe, prudent manner that in no way jeopardizes their safety, the safety of other employees or the general public. Employees are responsible to protect company-owned equipment and property. Where a conflict exists between safety and the in-vehicle use of technology, such as a cell phone – whether company-owned or employee-owned – safety must always be the top priority.

Therefore, it is the policy of this company in the interest of safety, that employees are prohibited from talking on any cell phone while driving a motor vehicle for business purposes, unless a hands-free device is used.

The company policy must be followed at all times while driving a motor vehicle for business purposes. All employees who travel on company business, however infrequently, and all employees who may use a cell phone, are required to sign this statement indicating you have read and understand this company policy.

Employee Signature: \_\_\_\_\_

Printed Employee Name: \_\_\_\_\_

Date: \_\_\_\_\_

(COMPANY NAME)

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Therefore, it is the policy of this company in the interest of safety, that employees are prohibited from talking on any cell phone while driving a motor vehicle for business purposes. Employees are required to pull over and stop their vehicle before answering calls or placing calls. Voice mail should be used to receive calls while driving.

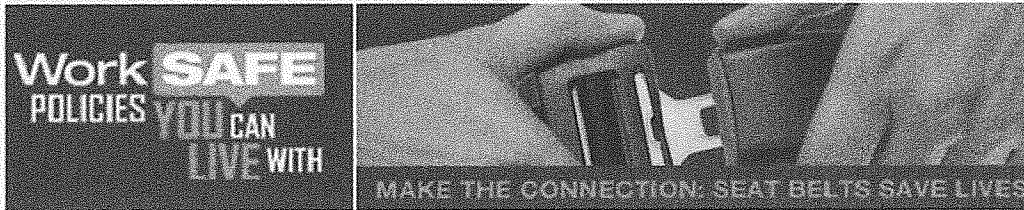
The company policy must be followed at all times while driving a motor vehicle for business purposes. All employees who travel on company business, however infrequently, and all employees who may use a cell phone, are required to sign this statement indicating you have read and understand this company policy.

Employee Signature: \_\_\_\_\_

Printed Employee Name: \_\_\_\_\_

Date: \_\_\_\_\_

# SEAT BELT USAGE POLICY



\_\_\_\_\_ recognizes that seat belts are extremely effective in preventing injuries and loss of life.

It is a simple fact that wearing your seat belt can reduce your risk of dying in a traffic crash by 45 percent.

We care about our employees and want to make sure that no one is injured or killed in a tragedy that could have been prevented by the use of seat belts.

Therefore, all employees of \_\_\_\_\_ wear seat belts when operating a company owned vehicle, or any vehicle on company premises or on company business. All occupants are to wear seat belts or, where appropriate, child restraints when riding in a company vehicle or in a personal vehicle being used for company business.

All employees and their families are strongly encouraged to always use seat belts and the proper child restraints whenever they are driving or riding in any vehicle, in any seating position.

Failure to abide by this policy could result in disciplinary action or, in the event of an injury, a reduction in workers compensation benefits.

Print Employee Name: \_\_\_\_\_

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Company Representative: \_\_\_\_\_ Date: \_\_\_\_\_

## Deer Can Be Hazards on the Roadway: Time to Sharpen Your Defensive Driving Skills

It's that time of year, deer are moving in Missouri. Whether you drive in a city or rural environment, deer can be hazardous on the roadways. According to the Missouri State Highway Patrol, October and November are the two most dangerous months for deer-related crashes. Now is the time for you and your employees to refresh your defensive driving skills.

Think deer in the road aren't much of a problem and you won't encounter one? Think again. The Missouri Highway Patrol has some convincing numbers from 2010 that suggest otherwise.

- There were 3,420 deer-related traffic accidents.
- A deer strike occurred every 2.6 hours.
- Two people were killed and 352 were injured in traffic collisions involving deer.
- Most deer related crashes occurred between 5-10 p.m.
- Counties with the most deer strikes included St. Louis, Jackson, Platte, Clay and Jefferson.
- Cities with the most deer strikes included Kansas City, Lee's Summit, Wildwood, Cape Girardeau and Jefferson City.

Most drivers' initial reaction to deer in the road is to try and to avoid them by going around them, but taking evasive action such as swerving is one of the worst things you can do. You may actually send your vehicle into oncoming traffic or skid out of control. It's usually safer to strike the deer than another object such as a tree or another vehicle. Keep yourself and your employees safe by doing the following:

- Require the use of seat belts when employees ride in vehicles or drive for the company. Wearing a seat belt increases your chances of staying in control of the vehicle if you strike a deer and may minimize your injuries.
- Encourage employees to focus solely on the road and not drive distracted. Concentrate on the road and be able to react to deer that may be along the shoulder.
- Keep your personal and fleet vehicles' glass and mirrors clean.
- Keep up with routine maintenance on your personal and fleet vehicles.
- Get enough sleep and be drug-and-alcohol free. Safe driving always requires clear focus and concentration.
- Increase your following distance and slow down. Have time to react if a deer enters the roadway. Avoid panic braking and never jerk the steering wheel to avoid the deer.

Remember, driving is the most dangerous job you can do. It's the #1 killer of Missouri workers.





# HEAT STRESS

## FACT SHEET

### Introduction

For many people, summertime at \_\_\_\_\_ means warm, comfortable days, perfect for eating outside or long walks during breaks from air-conditioned offices. But for some of us, summertime means special projects working outside in the direct sunlight or renovating buildings with no cooling systems. Working in hot conditions may pose special hazards to safety and health. This document provides an overview of the variety of illnesses and injuries associated with heat stress and gives guidance on how to recognize and prevent them.

### How Your Body Reacts to Hot Condition

Four environmental factors affect the amount of stress a worker faces in a hot work area: *temperature*, *humidity*, *radiant heat* (such as from the sun or a furnace) and *wind speed*. Individuals with high blood pressure or some heart conditions and people who take diuretics (water pills) may be more sensitive to heat exposure.

The body defends itself from heat through three mechanisms: breathing, sweating, and changing the blood flow. The first reaction is to circulate blood to the skin, which increases skin temperature and allows the body to give off some heat. During heavy work, muscles need more blood flow, which reduces the amount of blood available to flow to the skin and release the heat.

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Sweating also helps the body to cool off, but only when the humidity levels are low enough to allow the sweat to evaporate and if water and salts lost through sweating are replaced.

## **Heat Stress Disorders**

When the body becomes overheated, a condition of heat stress exists. Heat stress can lead to a number of problems, including heat exhaustion, heat stroke, heat cramps, fainting, or heat rash. Many people confuse these disorders, but it is important to be able to recognize each one and know what to do when it happens. Each of these heat stress disorders is described below.

### ***Heat exhaustion***

Although not the most serious health problem, heat exhaustion is the most common heat-related ailment at Princeton University. Heat exhaustion happens when a worker sweats a lot and does not drink enough fluids or take in enough salt or both. The simple way to describe the worker is wet, white and weak.

### **Signs and symptoms**

Sweaty  
Weak or tired, possibly giddy  
Nausea  
Normal or slightly higher body temperature  
Pale, clammy skin (sometimes flushed)

### **What to do**

Rest in a cool place  
Drink an electrolyte solution, such as Gatorade or another sports drink. Avoid caffeinated beverages such as colas, iced tea or coffee. In severe cases involving vomiting or fainting, call 911 and/or have the worker taken to \_\_\_\_\_ or \_\_\_\_\_, as appropriate.

## ***Heat stroke***

Heat stroke is the most serious health problem for people working in the heat, but is not very common. It is caused by the failure of the body to regulate its core temperature. Sweating stops and the body cannot get rid of excess heat. Victims will die unless they receive proper treatment promptly.

### **Signs and symptoms**

Mental confusion, delirium, fainting, or seizures  
Body temperature of 106°F or higher  
Hot, dry skin, usually red or bluish color

### **What to do:**

Call Public Safety at 9-1-1 immediately and request an ambulance  
Move victim to a cool area  
Soak the victim with cool water  
Fan the victim vigorously to increase cooling

## ***Heat cramps***

Heat cramps are painful muscle spasms. They occur when a worker drinks a lot of water, but does not replace salts lost from sweating. Tired muscles – those used for performing the work – are usually the most likely to have the cramps.

### **Signs and symptoms:**

Cramping or spasms of muscles  
May occur during or after the work

### **What to do**

Drink an electrolyte solution (sports drink) such as Gatorade  
If the cramps are severe or not relieved by drinking a sports drink, seek medical attention from \_\_\_\_\_ or \_\_\_\_\_, as appropriate.

## ***Fainting (Heat Syncope)***

Fainting usually happens to someone who is not used to working in the hot environment and simply stands around. Moving around, rather than standing still, will usually reduce the likelihood of fainting.

### **Signs and symptoms**

- Brief loss of consciousness
- Sweaty skin, normal body temperature
- No signs of heat stroke or heat exhaustion

### **What to do:**

- Lie down in a cool place
- Seek medical attention if not recovered after brief period of lying down

## ***Heat rash***

Heat rash, also called prickly heat, may occur in hot and humid environments where sweat cannot evaporate easily. When the rash covers a large area or if it becomes infected, it may become very uncomfortable. Heat rash may be prevented by resting in a cool place and allowing the skin to dry.

### **Signs and symptoms**

- rash characterized by small pink or red bumps
- irritation or *prickly* sensation
- itching

### **What to do**

- keep skin clean and dry to prevent infection
- wear loose cotton clothing
- cool baths and air conditioning are very helpful
- some over-the-counter lotions may help ease pain and itching



## **Preventing Heat Stress**

In most cases, heat stress can be prevented or, at least, the risk of developing heat stress can be reduced.

### ***Engineering Controls***

A number of engineering controls can help reduce heat exposure. These include:

- general and local exhaust ventilation in areas of high heat
- shielding of radiant heat sources, such as furnaces or hot machinery
- elimination of steam leaks
- use of cooling fans or personal cooling devices, such as cooling vests
- use of power tools to reduce manual labor

### ***Work Practices***

**Clothing:** Wear loose-fitting, lightweight clothing, such as cotton, to allow sweat to evaporate. Light colors absorb less heat than dark colors. When working outside, wear a lightweight hat with a good brim to keep the sun off your head and face.

**Drinking:** Drink plenty of liquids, especially if your urine is dark yellow, to replace the fluids you lose from sweating – as much as one quart per hour may be necessary. Water and/or sports drinks are recommended. Since caffeine is a diuretic (makes you urinate more), beverage such as cola, iced tea and coffee should be avoided. Thirst is not a reliable sign that your body needs fluids. When doing heavy work, it is better to sip rather than gulp the liquids.

**Work Schedule:** If possible, heavy work should be scheduled during the cooler parts of the day. Otherwise, alternate heavy work in the heat with lighter work or work in cooler areas. When the temperature humidity index (see next page) is between 84 and 93 (Warning Zone), try to minimize the amount of time working in the heat such that approximately half of each hour is spent doing heavy work in the heat. When the temperature humidity index is 94 or higher (Danger Zone), this should be further

minimized to approximately one quarter of each hour spent doing heavy work in the extreme heat.

**Acclimatization:** New employees and workers returning from an absence of two weeks or more should have 5 days to get used to the heat. Begin with 50 percent of the normal workload and time exposure the first day and gradually build up to 100 percent on the fifth day.

**Body Weighing:** Workers may be at greater risk of heat stress if they lose more than 1.5% of their body weight in a single day from sweating.

### ***Personal Protective Equipment***

When work must proceed in hot conditions at Princeton, personal cooling systems may help reduce the risk of heat stress. There are several systems available through health and safety catalogs, including the following:

**Heat reflective clothing** may alleviate the problem of radiant heat sources, such as furnaces. However, if the worker is fully covered, he or she will have trouble evaporating sweat.

**Ice vests or cooling vests** remove heat from the skin. They are relatively inexpensive and allow freedom of movement.

**Liquid cooling systems** also remove heat from the skin. Cool liquid flows in the suit around the body and carries the heat away.

### ***Training***

Employees and supervisors need to be trained to be able to detect early signs of heat stress. Employees must understand the need to replace fluids and salt from sweat and recognize the signs of dehydration, fainting, heat cramps, heat exhaustion, and heat stroke.

Supervisors should watch for signs of heat stress and allow workers to interrupt their work if they are extremely uncomfortable. Supervisors should also ensure that work schedules allow appropriate rest periods and ensure liquids are available. They should use appropriate engineering controls, personal protective equipment and work practices to reduce the risk of heat stress.


## Temperature-Humidity Index

A useful guide to summertime comfort is the Temperature-Humidity Index (THI). This table gives an approximation of how most people react to heat and humidity. To use the table, find out the temperature and relative humidity of the work area. Start at the temperature listed on the left, and read across to the number under the relative humidity level (round up to the higher percentage). This number is the temperature-humidity index. The values are for people wearing the right amount of clothing doing light work, with very little wind.

The lightly highlighted area is uncomfortable for everyone. For moderate to heavy activity, workers should be concerned about heat stress and should alternate time working in the heat and time in cooler areas or light work. When the THI is in the darkly highlighted area, extreme

		Relative Humidity									
		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Temperature (Fahrenheit)	80°	69	70	72	73	74	75	76	78	79	80
	81°	70	71	72	73	75	76	77	78	80	81
	82°	70	72	73	74	75	77	78	79	81	82
	83°	71	72	73	75	76	78	79	80	82	83
	84°	71	73	74	75	77	78	79	81	83	84
	85°	72	73	75	76	78	79	80	82	84	85
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	95°	77	79	81	83	85	87	89	91	93	95
	96°	77	79	81	84	86	88	90	92	94	96
	97°	78	80	82	84	86	88	91	93	95	
	98°	78	80	83	85	87	89	91	94	96	
	99°	79	81	83	85	88	90	92	95		
100°	79	82	84	86	89	91	93	95			
101°	80	82	84	87	89	91	94	96			
102°	80	83	85	88	90	92	95				
103°	81	83	86	88	91	93	96				
104°	81	84	86	89	91	94	96				
105°	82	84	87	90	92	95					
106°	82	85	87	90	93	96					
107°	83	85	88	91	94	96					
108°	83	86	89	92	95						
109°	84	87	89	92	95						
110°	84	87	90	93	96						

caution is indicated. Workers should try to schedule work to allow only 25% of time performing heavy work in such an environment. Workers should be encouraged to drink plenty of fluids and be on the lookout for signs of heat stress.

 Warning Zone

 Danger Zone

In an emergency, call Public Safety at 9-1-1.