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MANAGEMENT COMMITMENT

POLICY STATEMENT

The City of Sedalia is committed to creating a workplace that is safe, healthy and injury free. Our employees are our most valuable assets, and their safety and health is our first priority. Safety is essential to all municipal functions and is never compromised under any circumstance. Every employee has the responsibility to maintain the work environment including reporting hazards and working toward preventing accidents.

We will provide training, review our procedures, review accidents and maintain the equipment. In the event of an injury, we will actively work to return the employee back to work when medically possible. Our Controlled Substance & Alcohol Testing Policy will be strictly enforced with no exceptions.

We will provide support to our Safety Committee by providing them the time, employees and management commitment needed to reach our common goal of an injury free workplace. I appreciate your commitment to our safety program and your efforts to make our workplace safe, healthy and injury-free.

Sincerely,

_____

Gary L. Edwards
City Administrator

SAFETY COMMITTEE

The City of Sedalia Safety Committee helps maintain a high level of interest in safety at all levels of the city's organization. The Safety Committee will be composed of management employees from various departments:

Meetings shall at a minimum, be held quarterly in January, April, July and October.

The duties and responsibilities of the Safety Committee are:

- Review and recommend safety work-related policies and procedures.
- Promote a commitment to safety and help set safety goals.
- Review all vehicular incidents, accidents and/or property damage and determine whether preventable or non-preventable.
- Review all personal injury incidents, accidents requiring professional medical attention and determine whether preventable or non-preventable.
- Exchange information and expertise about safety and health issues.
- Identify and implement safety education by providing classes, DVDs, posters and informational materials to make the workplace safer.
- Communicate employee safety concerns to management.
- Participate in safety training and set a good example for others.
- Inspect workplaces to identify hazards and safety concerns and develop recommendations or plans for controlling or eliminating hazards.

RESPONSIBILITIES

Management Responsibilities
It is the responsibility of the City Administrator to eagerly support the safety activities within the City. Department Heads and supervisors reflect the safety attitude of the City Administrator and a worker's attitude is usually the same as their supervisor's. The specific role of the City Administrator includes, but is not limited to:

- Providing sufficient staffing, funds, time and equipment so employees can work safely and efficiently.
- Being "visible" in the safety program by occasionally attending safety committee meetings and safety-training seminars with employees.
- Striving to have every employee involved with safety.
- Consistently enforcing safety rules and regulations, programs and protective measures.
- Working with Safety Coordinator, Department Heads and Safety Committee to maintain and implement new and ongoing safety programs.
- Reviewing and replying to Safety Committee and Safety Coordinator recommendations.

Safety Coordinator Responsibilities
The functions and responsibilities of the City Safety Coordinator will be assigned under the direction of the City Administrator.

The Safety Coordinator (City Clerk) has the responsibility of filing all workers compensation claims immediately with the workers compensation insurance carrier. The specific responsibilities of the Safety Coordinator include, but are not limited to:

- Organize the Safety Committee. The Safety Coordinator shall be a permanent member of all safety-related committees.
- Establish procedures for the completion and handling of accident reports.
- Keep a current list of all safety videos available for departments as they are requested.
- Advise Department Heads and Safety Committee on safety policies and procedures.
- File all workers compensation claims immediately and work with the company physician to insure that employees return to work as soon as medically appropriate.

Department Head/Supervisor Responsibilities

All Department Heads and supervisors are held directly responsible and accountable for the prevention and/or elimination of accidents and the enforcing of all safety rules and regulations within their respective departments. Every effort should be made to prevent and eliminate injuries, accidents and liabilities. These individuals shall be responsible for the following:

- Immediate investigations of all accidents to ascertain what can be done to prevent a recurrence of the same accident and file a report with the Safety Coordinator.
- Enforce all written and existing safety rules. Assist with the development and implementation of rules and policies.
- Provide training to employees on safe and proper procedures and make sure that all essential safety devices and personal protective equipment are provided and used on all jobs requiring them.
- See that all injuries are promptly and properly treated.
- Provide reasonable transitional duty, if available, for injured employees.
- Review departmental accident losses and determine possible alternative methods to bring about a more positive loss reduction.
- Evaluate employees who directly report to the Department Head/Supervisor on accident prevention performance.
- Perform department inspections on a regular basis to identify hazardous conditions and unsafe work methods and recommend corrective actions to management.
- Make sure that Material Safety Data Sheets for each chemical substance are current and on file in an area that is accessible to all employees in each department.

Employee Responsibilities

The employee should be the person most concerned with his/her safety. In addition, each employee shall have the following duties:

- Report all accidents, no matter how minor, to supervisor.
- Recognize the job hazards and take precautions to assure safety for self and others.
- Inform supervisor of hazardous conditions and unsafe practices.
- Use proper personal protective equipment and safety equipment at all times.
- Perform regular equipment and area inspections as required by supervisor.
- No use of drugs or alcohol as outlined to the terms of the City of Sedalia's Controlled Substance & Alcohol Testing Policy.
- Always wear seatbelt while operating company vehicles.
- Refrain from horseplay or hostile actions that could endanger self or coworkers.

CONTROLLED SUBSTANCE AND ALCOHOL TESTING POLICY

Written Policy
In order to achieve a drug-and-alcohol-free workforce, the City of Sedalia has adopted a Controlled Substance & Alcohol Testing Policy. All employees must be informed that illegal drug use will not be tolerated.

Employee Assistance Program
An established confidential EAP will provide counseling and referral programs.

Employee Awareness and Education
Drug and alcohol awareness will be provided to all employees in the orientation program. A drug and alcohol orientation program will advise all employees of the City of Sedalia's policy. Ongoing educational efforts to inform employees about the negative consequences of drug and alcohol abuse are essential in employees changing attitudes about the problem. This will be accomplished with meetings, educational handouts, etc.

Supervisor Training
Substance abuse training will be provided to supervisors so those closest to the problem can be coached on the signs, symptoms, behavior changes, performance problems, and intervention concepts that accompany drug and alcohol abuse.

Enforcing the Controlled Substance & Alcohol Testing Policy
Proper enforcement of the policy is essential. Some basic rules of policy enforcement include:

- Consistent enforcement. Be prepared to make the same response when a "positive" drug or alcohol test is confirmed for a long-term, highly placed employee as you would for a short-term or "non-essential" employee.
- Maintain thorough, secure and confidential records for drug and alcohol test results and for drug-and/or-alcohol-related accidents or incidents. The best defense to a legal challenge to disciplinary action based on drug or alcohol abuse, and an important safeguard for protecting innocent employees, is documentation.
- The City of Sedalia will show full support for supervisors by:
    - Demonstrating the commitment to and seriousness of the company's policy;

- Assuring supervisors and employees that they should cooperate in efforts to identify those employees who violate the law and the company's policy; and
- Discouraging further violations.
- Disciplining supervisors, who, in administering and enforcing the company's substance abuse prevention program, abuse their power, harass employees, lie, and do not take action when violations are committed, or otherwise act in bad faith. Employees must be shown that the City's prevention program is fair and consistent in order to assure meaningful cooperation and maintain positive morale.

Employee Education, Training and Communication

To effectively implement the Controlled Substance & Alcohol Testing Policy, any of these important steps may be taken:

- Distribute the policy to all employees.
- Educate your employees about the program.
- Briefings
- Notices in City employee newsletters
- Notices in paycheck envelopes
- Notices on City bulletin boards
- Informing employees of the reasons for the policy, recognizing the success of the program is dependent upon its acceptance by the employees and job applicants themselves.
- Making being drug and alcohol free a condition of employment and informing job applicants and employees of that through statements on job notices.
- Educate employees about the dangers of drug abuse through:
  - Lectures for employees and family members by experts in the community;
  - Films
  - Brochures
- Inform employees of any available EAP or other resources within the City for getting help with a substance abuse problem.
- Inform employees that supervisors will be trained how to:
  - Detect the symptoms of drug and alcohol abuse identify patterns of performance frequently related to drug and/or alcohol abuse
  - Identify illegal drugs and drug paraphernalia
  - Respond to crisis situations, such as receiving reports of illegal drugs in plain view or being confronted by an employee who is obviously under the influence of drugs or alcohol and may need to be restrained or medically assisted

    - Document performance and behavior indicators that may be linked to substance abuse
    - Refer employees to resources for help
- Cooperate with local police regarding criminal investigations.

Supervisory Training
Supervisory training will be provided to those closest to the workforce, including information about drugs and alcohol, drug paraphernalia, signs and symptoms of usage, and performance deterioration signals. Training enables supervisors to properly establish reasonable suspicion before referring employees for testing and aids in the implementation of a drug and alcohol abuse prevention program.

All supervisors shall be provided with basic information about their employer's prevention program and their role in carrying it out, including:

- The rationale and specific details of the program startup and implementation.
- The supervisor's specific responsibilities.
- Ways to recognize and deal with employees who have job performance problems that may or may not be related to drugs or alcohol, including personal and family problems.

Drug and alcohol abusers can be spotted by observing them directly, by identifying associated drugs and paraphernalia, and by reviewing performance. Direct observation can reveal physical and/or behavior changes, mood swings and long-term changes in personality or physical appearance. Even the best trained supervisor is working with subjective clues and therefore may not notice a drug or alcohol abuser until he or she is well along the path of chemical dependency.

All drugs fall into three categories: stimulants, depressants and hallucinogenics—or combinations thereof—each with revealing signs depending on when in the use cycle an observation is made. The three most troublesome drugs in the workplace are alcohol, marijuana and cocaine.

Steps to Remember
Listed below are steps that should be followed when implementing and maintaining a drug- and alcohol-free workplace program.

- Keep written records that objectively document suspect employee performance. These can be used as a basis for referral for testing.
- Know your employees. Become familiar with each one's skills, abilities, and normal performance and personality.

- Become familiar with common symptoms of drug use.
- Document job performance regularly, objectively and consistently for all employees.
- Take action whenever job performance fails, regardless of whether drug or alcohol use is suspected.
- Know the exact steps to be taken when an employee has a problem and is ready to go for help.
- Communicate immediately with your supervisor when you suspect a problem, and have a witness to your action when confronting an employee.

Mistakes to Avoid

Listed below are things to avoid when implementing and maintaining a drug- and alcohol-free workplace program:

- Don't misuse the drug prevention program to discipline employees for problems not related to the program.
- Don't single out any employee or group of employees for scrutiny under the City's policy. Too much attention to any one group could leave the City liable for charges of discrimination. Be consistent with all employee groups.
- Don't confront a suspected drug dealer alone. Always have a witness to your actions. Consult local law enforcement for advice or assistance in these cases.
- Don't assume anyone in your organization is immune to the problem of drug and alcohol abuse.
- Don't treat employees who test positive differently. All employees who test positive must be treated consistently to maintain the integrity of the program.

EDUCATION

EMPLOYEE ORIENTATION AND TRAINING

The best way to prevent injuries is to educate employees about job hazards, safety procedures and the safe operation of vehicles. This process begins the first day a new employee is hired.

Supervisors should be aware that new employees are more likely to get injured than more tenured employees. The likelihood of a new employee being injured can be reduced by proper safety orientation and regular safety coaching.

New employee orientation effectively assists with retention, motivation, job satisfaction and quickly enables each employee to become a contributing member of the work team.

New employees should always be given a training or orientation session to review and explain the City's work rules before they actually begin their work. A sample Employee Training Checklist is attached. Each department should develop a separate job specific training list and utilize the list in employee training.

Orientation Training by Supervisor and/or Department Head

A. Ensure that employee is physically capable of performing the job.
B. Specific training will be provided to employees as it relates to their job duties.
C. Educate the employee on:
    - What the job is
    - Who is involved in completing the job?
    - Where the job is located.
    - When the work must be done.
    - Why the work is necessary and how it fits into the overall operation.
    - Tour the department showing the employee where the materials are, where his/her job fit in, and what happens after his/her particular job is performed.
    - Review clean-up responsibilities.
D. Demonstrate exactly how the job is to be performed.
E. Observe the employee and determine if correct and safe methods of performance are utilized. Have them explain steps as the task is performed. This ensures the employee understands how the task is done safely and accurately.
F. Set a good example and high goals.

- Be practical so the employee will be receptive and cooperative.
- Be "visible" so that employees will know that they can ask questions.
  Let him or her know that all questions are useful, and that you will be glad to answer them. If a new employee feels that questions are appreciated, he or she will feel much more comfortable.
- Be sure your instructions make sense.
- Introduce the employee to fellow employees.

Safety Orientation by Supervisor and/or Department Head
Safety orientation provides a unique opportunity to make a positive statement about the value that the City places on safety.

A well designed safety orientation will provide new employees with the skills and abilities to safely perform their jobs while they are adapting to the new situation, environment, job responsibilities and potential job hazards.

Topics of discussions should include:

- Proper lifting, hand tool safety and ergonomic techniques.
- Equipment safety devices (gauges, speed controls, settings, emergency stops, etc.).
- Emergency procedures.
- Location of MSDS binder with a brief review about MSDS.
- How to report accidents, injuries, and near occurrences.
- Location of all safety supplies, eye wash and shower.
- General lockout/tagout procedures.
- Medical response procedures – heart attack, bloodborne pathogens, etc.
- Demonstrate all personal protective equipment required on the job, machine guards, etc.
- Identify hazards associated with the job and individual tasks.
- Review typical incorrect methods and unsafe practices.

Refresher Training
Training of employees can be performed at any time based on employee needs as determined by the supervisor. Accident trending, minor occurrences or as a means to heighten employee awareness based on observed behaviors, are all reasons for conducting training.

The time you spend planning for the new employee's first days and weeks on the job will greatly increase the chance for a successful start.

Employee Training Checklist

Employee Name _____ Employee I.D. No. _____

Department _____ Job Title _____

Supervisor _____ Hire Date _____

General Safety Training	Training Received On	Trainer
City Safety Policy Statement and Safety Rules		
Review of Accident Reporting Procedures		
Review of Controlled Drug & Alcohol Testing Policy		
Review of Incentive Program		
Review of Disciplinary Program		
Building Evacuation or Inclement Weather Procedures		

Job Specific Training	Exposure To Hazard		Training Received On	Trainer
	Yes	No		
Confined Space Entry				
Electrical Safety				
Safe Lifting/Material Handling				
Company Fleet Program				
Hearing Conservation				
Hazard Communication				
Fall Protection				
Emergency Action Procedures				
Use of Power Tools				
Use of Personal Protective Equipment				
Blood Borne Pathogens				
Trenching and Excavation				
Use of Specific Equipment _____				
Other _____				
Other _____				
Other _____				

I acknowledge the orientation training information listed above was provided to me. I have read and understand the information provided.

_____ _____
Employee Signature Date

_____ _____
Training Coordinator Date

POLICIES

EMERGENCY PREPAREDNESS POLICY

The purpose of this Policy is to ensure the protection of all employees in an emergency situation such as a tornado, earthquake, severe storm, etc. The personal safety of each employee is and always will be of primary importance. The procedure should be reviewed for all main office locations. Additionally, training and planning should address employees who perform operations at other locations.

Responsibility

As a Department Head or Supervisor, you are responsible for the safety of your employees. Take the time to prepare and don't get caught unaware. The time to start is right now. Make sure your workplace has a building evacuation plan and a shelter plan that is regularly practiced. Each employee will have a certain responsibility in the plan and should be trained accordingly. Your department should conduct mandatory routine disaster management drills. The Emergency Organization Plan responsibilities are documented in **Appendix C**.

Policy Review and Update

The Emergency Preparedness Policy will be reviewed and/or updated under these circumstances:

- Annually, on or before **April 1st** of each year or
- When new equipment, facility construction or personnel changes might affect the program.

Emergency Escape Procedures

Emergency escape routes will be kept clear at all times. The escape routes and emergency procedures are documented in Appendix A. A copy of the escape route and emergency procedures will be posted on the employee bulletin board. The City of Sedalia also has designated safe areas for employees to report to in case of an emergency. Refer to Appendix B for designated safe areas. A master copy of each department's escape route and designated safe area will be provided to the City Clerk's office.

Procedures for Critical Operations

Some operations in the City, in which control in an emergency situation is critical to the safety of employees, require special procedures for proper control (e.g., monitoring power, water supplies, or other essential operations). In these cases Supervisor appointed employees are responsible

for these critical operations until their evacuation is necessary. If at any time during an emergency situation the employees' safety is at risk, the critical operation procedures are to be abandoned and the employees are to proceed to a safe area.

Procedures to Account for Employees
Supervisors will be responsible to account for employees after an emergency evacuation and will maintain a list of names of all the employees they are responsible for in their area. To remain current, this list will be updated with each new employee hired and non-employees will be deleted.

Employees appointed by Supervisors will be responsible for conducting procedures to account for employees after the emergency evacuation. These procedures are designed to account for all employees, determine if an employee needs assistance in evacuation and to determine their location.

Procedure for Reporting Emergencies
The quicker and more efficient emergencies are reported, the greater the chance for saving lives and property. Emergency phone numbers will be posted near telephones, employee bulletin boards, and other conspicuous locations where telephones will be used as the means of reporting emergencies.

Training and Recordkeeping
Supervisors are responsible for training all employees covered under this program.

- At the time of initial assignment and annually thereafter, or
- When an employee's responsibilities change under this program.

Employees responsible for leading the evacuation will be trained in evacuation inspections of closed rooms, alternate escape routes, employees that may need additional assistance, buddy system and hazardous areas to avoid during evacuation procedures.

Prepare Your Work Place
You probably spend at least eight hours a day or more at work, so you should prepare for disaster in your work place just as you prepare at home.

Know Your Work Place:

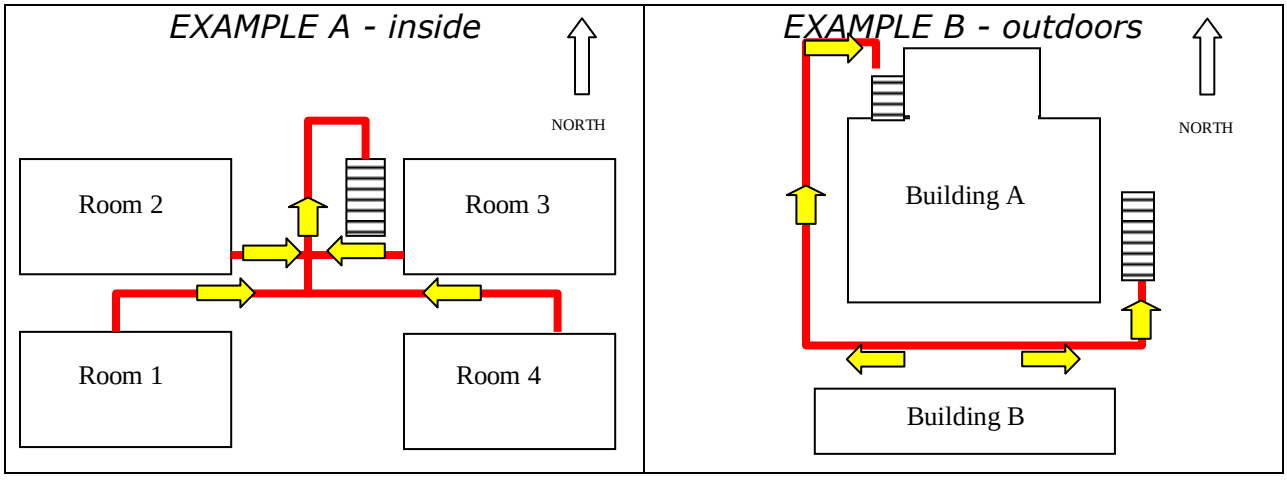
- Be aware of safe places (i.e. under heavy tables or desks; corner of rooms) and dangerous places (i.e. near windows, tall insecure bookcases) around your work area.

- Know the locations of fire extinguishers and first aid equipment.
- Know the safe evacuation routes from your work area.

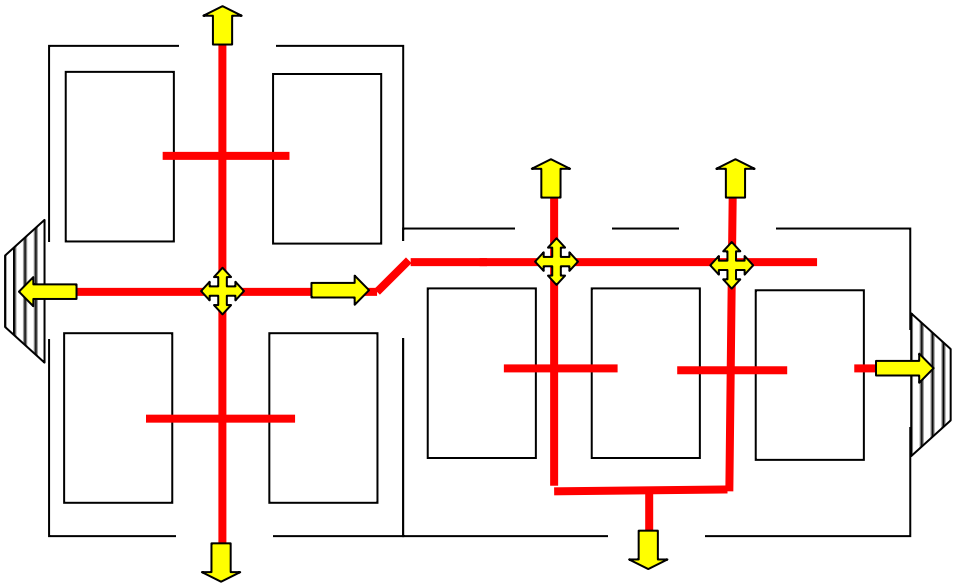
Know Your Surroundings:
If your work takes you outside of your office during inclement weather, it is safe practice to know your surroundings in the event of a disaster. Knowing what to do and where to go can be accomplished by disaster scenario drills periodically within your department.

Keep Employees Informed and Alert
Protecting people is the first order of business in any emergency. Ensure that your employees are aware of your plan by reviewing it with them and training them to respond correctly when the unexpected happens. Emphasize the key points, and be sure to point out where all fire extinguishers, emergency exits and first aid kits are. Keep employees constantly informed of critical first aid techniques. Post an Evacuation Board to clearly illustrate all the routes out of the building.

Examples of tornado shelter routes



Example of fire evacuation route



Appendix A
Emergency Escape Route

Each department insert own route

Appendix B
Designated Safe Areas
Each Department list own safe area

Emergency Situation	Department	Designated safe area
Fire		
Tornado		
Fuel or Chemical Release		
Earthquake		
Other		

Appendix C
Emergency Organization Plan

Date _____

Department _____ Division _____

Facility Name _____ Address _____

_____

Emergency contact telephone number ___(_____)_____

Personnel responsible for the Emergency Organization:

Primary person in charge:
Name _____Title _____

Alternative person in charge:
Name _____Title _____

Primary notifies—to call fire, police, etc.:
Name _____Title _____

Alternate notifies:
Name _____Title _____

Fire extinguisher operator:
Name _____Title _____

Alternate:
Name _____Title _____

Alternate:
Name _____Title _____

These individuals must know their responsibilities during times of emergency. They must also know the location of fire extinguishers and where to send visitors and employees during emergencies.

Fire evacuation procedures:

Severe weather procedures:

Bomb threat procedures:

Earthquake procedures:

This form is to be updated annually.

Emergency Preparedness Policy - Employee Training

Training on Emergency Preparedness Policy should be provided to all employees and should cover, but not be limited to:

1. How to report emergencies
2. Description of alarm system
3. Evacuation policy, procedures and escape route assignments
4. Exit diagrams
5. Procedures for sheltering-in-place
6. Procedures for employees who remain in place to operate fire extinguishers or shut down critical systems
7. Procedures to account for employees
8. The duties, responsibilities and names of employees assigned with rescue and medical tasks.
9. The names, titles, departments and phone numbers of employees who can be contacted for additional information or clarification of some aspect of the plan.
10. The site of an alternative communications center to be used in the event of a fire or explosion.

Date of Training _____/_____/_____

Trainer's Name _____

Trainees' Names _____

_____

_____

_____

_____

_____

_____

_____

LOCKOUT/TAGOUT POLICY

This Policy is to ensure that all individuals are protected from unexpected activation or release of stored energy of machinery or equipment. This could occur during maintenance, repairing and cleaning activities. Normal equipment operations are not considered in this policy. Lockout is a first means of protection. Warning tags only supplement the use of locks. Tags alone may be used only when the application of a lock is not practical.

Definitions
Lockout—The practice of using keyed or combination security locks to prevent the unwanted activation of mechanical or electrical equipment.

Tagout—The practice of using tags in conjunction with locks to increase the visibility and awareness that equipment is not to be energized or activated until such devices are removed. Tagout devices will be non-reusable, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds.

Activation/Energizing—To set machinery into motion by starting, switching, pushing, moving or otherwise engaging power sources for such equipment. To provide a flow of electricity or complete a circuit that is the main power source for the machinery/equipment.

Energy Control Procedures—Use of lockout/tagout equipment to ensure safe work practices.

Hazardous Motion—Motion of equipment under mechanical stress or gravity that may abruptly release and cause injury. Hazardous motion may result even after power sources are disconnected. Examples are coiled springs, raised hydraulic equipment and any sources of potential energy that may cause injury.

Responsibilities

Department Heads
The Department Head will:

- Ensure procedures are developed and maintained outlining the lockout/tagout steps for all required equipment.
- Ensure supervisors are providing employees with lockout/tagout training.

Supervisor
The Supervisor will:

- Ensure each employee engaging in work requiring lockout/tagout of energy sources understands and adheres to adopted procedures.
- Assure employees have received training in energy control procedures prior to operating the machinery or equipment.
- Provide and maintain necessary equipment and resources, including accident prevention signs, tags, padlocks, seals and/or other similarly effective means.
- Notify the Department Head of new or revised equipment, machinery or operations that require the use of lockout/tagout devices during servicing, maintenance or repair.
- Maintain all training records for lockout/tagout employee training.

Employees
Employees are responsible to adhere to specific procedures as outlined in this document for all tasks that require the use of lockout/tagout procedures. Report any hazards that would not be controlled with lockout/tagout procedures.

Employee Training
Employees will receive annual lockout/tagout training. Employees will be trained on all new equipment prior to machinery operation. All new employees or employees who transfer jobs duties will be trained in their equipment's lockout/tagout procedures.

Lockout/Tagout Equipment
Hardware includes locks, and tags, and other devices used for isolating, securing or blocking machines from energy sources.

- The devices shall be singularly identified, the only device used for controlling energy and not used for other purposes.
- The devices must be capable of withstanding the environment for the maximum period of exposure time.
- The tagout device shall be constructed and printed so exposure to weather conditions will not cause the tag to deteriorate and become illegible.
- The tag shall not deteriorate in a corrosive environment.
- The devices shall be standardized by one of the following criteria: color, shape or size.
- The device shall be substantial enough to prevent removal with the use of excessive force or bolt cutters.

- The tagout device and attachment shall be substantial enough to prevent inadvertent removal.

Identification on lockout/tagout device
- Shall identify the applying employee.
- Shall warn against hazardous conditions if the machines are energized.

Lockout/Tagout Procedures
An equipment survey will be conducted to locate and identify all isolating devices. The survey will identify switches, valves or other energy isolating devices to be locked or tagged out. More than one energy source (electrical, mechanical, stored energy or others) may be involved. Operators will be trained in the equipment lockout procedures. This training will include the type and magnitude of energy the machine or equipment utilizes.

Lockout steps
1. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
2. Operate the switch, valve or other energy isolating device(s) so the equipment is isolated from it energy source(s).
3. The energy source will be identified in the equipment survey. Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
4. Lockout/Tagout the energy isolating devices with assigned individual lock(s) or tag(s).
5. With no employees exposed, test the lockout procedure by testing the operating device. CAUTION: Return operating controls to neutral or off position after the test.
6. The equipment is now locked out.
7. Mark the tag with name and date.

Machine Power Restoration
1. After servicing and/or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure no one is exposed.
2. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices.
3. Operate the energy isolating devices to restore energy to the machine or equipment.

Restoration with more than one operator:
If more than one individual is required to lockout or tagout equipment, each shall place his/her own personal lockout/tagout device on the energy isolating device(s).

1. When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used.
2. If lockout is used, a single lock may be used to lockout the machine or equipment with the key placed in a lockout box or cabinet, which allows the use of multiple locks to secure it.
3. Each employee will then use his or her own lock to secure the box or cabinet.
4. As each person no longer needs to maintain his or her lockout protection, that person will remove his or her lock from the box or cabinet.

Temporary Removal of Lockout Device
If the lockout/tagout device must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, the following sequence of actions will be followed:

1. Clear the machine of tools and materials.
2. Ensure all employees have been safely positioned or removed from the area.
3. Instruct employees to remove the lockout/tagout devices.
4. Energize and proceed with testing or positioning.
5. De-energize all systems and reapply lockout devices as previously stated.

Maintenance When Energy Source Cannot Be Locked
Maintenance, repairing, cleaning, servicing, adjusting or setting up operations that cannot be accomplished with the energy source disconnected may be performed under the following conditions:

- The operating station (i.e.-external control panel) is under the control of a qualified operator.
- Employees are in clear view or communication with each other.
- All employees must be out of the area of hazard.
- Machine elements are locked out separately if the operator is required to leave the control station to install a tool.
- The machine shall be de-energized during adjustment or replacement of mechanical components.

Energy Control Procedure Form

Machine:_____(type, manufacturer, model and serial number)

Location:_____

Energy sources and locations of energy isolating devices:

1. _____
2. _____
3. _____
4. _____

Authorized employee(s)_____

Affected employee(s)_____

Qualified employee(s)_____

Procedure developed on _____ by_____

Specific procedure for this equipment is as follows:

_____

_____

_____

_____

_____

_____

_____

Annual Inspection Certification Form

Machine: _____

Inspector: _____

Employees Consulted:

- _____
- _____
- _____
- _____

Date: _____

Results of Inspection:

_____

_____

_____

_____

_____

_____

_____

_____

Signature of Inspector_____ Date_____

Signature of Safety Director_____ Date_____

PERSONAL PROTECTIVE EQUIPMENT POLICY

The purpose of this policy is to ensure employee safety using personal protective equipment (PPE).

Responsibility
The Department Head will assess the workplace to determine if hazards are present, or likely to be present, which will require the use of personal protective equipment. Supervisors are responsible for training and ensuring that employees are using PPE. Employees are responsible for wearing PPE and complying with City policies for this equipment.

Program Review and Update
The personal protective equipment policy will be reviewed or updated whenever there is new equipment or personnel changes that might affect the policy. The policy shall be reviewed when the supervisor feels that employees need refresher training.

Methods of Compliance

Hazard Assessment and Equipment Selection
The first critical step in developing a comprehensive safety and health program is to identify physical and health hazards in the workplace. This process is known as a "hazard assessment" Examples of physical hazards include moving objects, fluctuating temperatures, high intensity lighting, rolling or pinching objects, electrical connections and sharp edges. Examples of health hazards include overexposure to harmful dusts, chemicals or radiation.

The hazard assessment should begin with a walk-through survey of the facility to develop a list of potential hazards. Things to look for during the walk-through survey include:

- Sources of electricity.
- Sources of motion such as machines or processes where movement may exist that could result in an impact between personnel and equipment.
- Sources of high temperatures that could result in burns, eye injuries or fire.
- Types of chemicals used in the workplace.
- Sources of harmful dusts.

- Sources of light radiation, such as welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
- The potential for falling or dropping objects.
- Sharp objects that could poke, cut, stab or puncture.
- Biologic hazards such as blood or other potentially infected material.

When the walk-through is complete, the employer should become aware of the different types of PPE available and the levels of protection offered. It is definitely a good idea to select PPE that will provide a level of protection greater than the minimum required to protect employees from hazards.

Hazard assessment should be an on-going project as new equipment and potential hazards change.

When hazards are present, or likely to be present, the employer will:

- Select the types of personal protective equipment that will protect the employee from the hazards identified in the hazard assessment (Appendix A).
- Communicate selection decisions to each affected employee.
- Review the hazard that requires the use of PPE.
- Ensure PPE properly fits each affected employee.
- Replace worn or damaged PPE

Training

The City of Sedalia will provide training to each employee who is required to use PPE. Each employee will be trained to know at least the following:

- When it is necessary;
- What is necessary;
- How to properly put on, take off, adjust and wear it;
- Its limitations;
- Proper care, maintenance, useful life and disposal.

When the Supervisor believes that any previously trained employee does not understand the use of the equipment, he will retrain the employee. Circumstances requiring retraining include, but are not limited to:

- Changes in the workplace,
- Changes in the types of PPE to be used,
- Inadequacies in an employee's knowledge.

Each employee will demonstrate an understanding of the training and the ability to use PPE properly, before being allowed to perform work requiring its use.

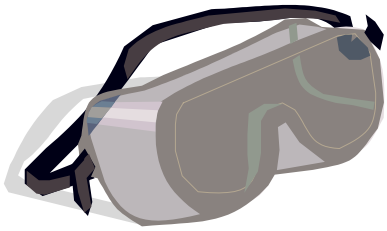
The supervisor will verify that each employee has received and understood the required training through a written certification (Appendix A) that contains:

- The name of each employee trained,
- The date(s) of training and
- The subject of the certification.

Appendix A
Personal Protective Equipment Training

Subject of training:	Employee's Name:	Date	Training Successful (circle one)	Retraining Date / Reason for retraining
When and why PPE is required			(Yes/No)	
What specific PPE is required			(Yes/No)	
How to properly put on, take off, adjust and wear PPE			(Yes/No)	
Limitations of PPE			(Yes/No)	
The proper care, maintenance, useful life and disposal of the PPE			(Yes/No)	

Training performed by:
Date of training:
Employee Signature:



EYE AND FACE PROTECTION POLICY

Employees can be exposed to a large number of hazards that pose danger to their eyes and face. Therefore, employees must use appropriate eye or face protection when exposed to hazards including:

- Flying particles
- Molten metals
- Liquid chemicals or Acid Liquids
- Chemical gasses and vapors

Eye safety checklist:

- Be alert to the eye hazards present at your worksite.
- Wear the appropriate protective eyewear – glasses, goggles, face shields, etc. for the specific hazards.
- Remember that regular eyeglasses or contact lenses will not protect from eye hazards. If corrective lenses must be worn, protective eyewear must be worn over them.
- Make sure protective eyewear fits properly and is clean and in good condition before and after each use.
- Replace faulty eyewear immediately. Scratched or cracked lenses lessen the impact resistance of the eyewear and impairs ability to see.
- Follow established safety guidelines.
- Learn basic first-aid for eye injuries.
- Know where all eyewash stations and emergency equipment are located

Eye and face protection can protect from many kinds of hazards, but only if worn. Make it a habit to wear face protection on the job.

Protective eye gear is available from the department Supervisor. It is each employee's responsibility to obtain the proper protective eyewear from his/her supervisor.

FOOT PROTECTION POLICY

Many work related accidents involve the foot and leg. Falling objects cause most of these, but compression, punctures, burns and slipping on wet surfaces are also common. All of these accidents are easily prevented by wearing the proper safety shoes. Therefore, employees must wear protective footwear (safety shoes or boots) when working in areas where there is a danger of foot injuries that could result from:

- Falling or rolling objects
- Objects piercing the sole
- Exposure of employees' feet to electrical hazards
- Exposure to hot substances or corrosive or poisonous materials
- Working around wet or slippery surfaces

The Supervisor will be able to advise what boots are required for each of your specific jobs. Some examples of safety boots are:

Standard Safety Shoe – Protects employee from falling objects, compression from rolling objects and punctures. Typically, safety shoes have steel toe caps to guard against injuries from falling objects and compression, and instep protection of aluminum, steel, fiber or plastic to protect the top of the foot. Steel insoles or reinforced metal soles protect from puncture. Cleated, non-slip rubber or neoprene soles protect against slipping on wet or oily surfaces. Icy surfaces may require strap-on cleats.

Electrical Hazard Shoe - Workers in electrical environment must wear safety shoes with leather, cork or other conductive soles and no exposed metal, which could cause sparking. For protection from live electrical current, shoes, including metal parts must be thoroughly insulated with rubber soles.

Rubber or Neoprene Boot - Protects employee from chemicals and solvents that can burn or eat away at ordinary shoe materials.

Wear protective foot wear that is appropriate for the job. Foot wear should be comfortable to wear for many hours, kept clean and dry and should be inspected regularly for cuts, cracks and embedded metal. Replace them when they get worn.

HEAD PROTECTION POLICY

Protecting employees from potential head injuries is a key element of any safety program. A head injury can impair an employee for life or it can be fatal. Wearing a safety helmet is one of the easiest ways to protect an employee's head from injury.

Employees must wear head protection if any of the following apply:

- Objects might fall from above and strike them on the head.
- They might bump their heads against fixed objects, such as exposed pipes, beams, etc.
- There is a possibility of accidental head contact with electrical hazard.

When selecting head protection, electric shock and burn hazards must be guarded against as well as dangers from falling objects. Protective helmets designed to reduce electric shock must be worn when electrical hazards could contact the head.

Head protection that is either too large or too small is inappropriate for use, even if it meets all other requirements. Protective headgear must fit appropriately on the body and for the head size of each employee. Most protective headgear comes in a variety of sizes with adjustable headbands to ensure a proper fit. Some protective headgear allows for the use of various accessories to help employees deal with changing environmental conditions, such as earmuffs, safety glasses, face shields, etc.

Periodic cleaning and inspection will extend the use life of protective helmets. Checks should be made for holes, cracks or other damage that might compromise the protective value of the helmet.

Protective Headgear with any of the following defects should be removed from service and replaced:

- Perforation, cracking or deformity of the brim or shell
- Indication of exposure of the brim or shell to heat, chemicals or ultraviolet light and other radiation.

HEARING PROTECTION POLICY

Every employee shall use hearing protection in the following situations and/or when appropriately needed:

- When using any machine or piece of equipment with an 85 dB or higher reading.
- Using power tools such as hammer, drills, etc.
- On all riding lawn equipment.
- Operating chainsaws, leaf blowers, and chipper machines.
- Wet vacs
- Brush clipper, string trimmers, post hole diggers, etc.

Earmuffs

Earmuffs consist of cushioned cups attached to a headband that may be worn over the head, behind the neck or under the chin. Cups are made of molded plastic and filled with foam or similar material. They should adjust up and down, and in and out, for a good fit. Cushions filled with foam, liquid or air cover the cups and completely seal them around the ears. To work right, earmuffs must form a seal around the ears, completely enclosing them, without pinching the earlobes. No hair or clothing should stick out from under the cups.

Earplugs

Properly fitting earplugs need not interfere with comfort or ability to hear important sounds. Earplugs reduce noise levels by up to 30 decibels and protect from gradual loss of hearing that may not noticed until permanent damage has occurred. To work properly, earplugs must completely fill the ear canal.

Each employee issued hearing protection is responsible for the care, maintenance and daily inspection of the equipment.

- Earmuffs - Worn cushions should be replaced when they are hard, cracked or worn out.
- Earplugs - Employee's hands should be clean when inserting earplugs and reusable earplugs should be washed after each use in warm soapy water to avoid ear infection.

SELF CONTAINED BREATHING APPARATUS POLICY

RESPIRATORY PROTECTION

The self –contained breathing apparatus (SCBA) is a supplied-air respirator with the air supply contained in a tank carried on the back. It is the respirator of choice for extremely hazardous environments in which physically dangerous or unknown conditions exist. SCBAs when properly used, prevent respiratory contact or contamination with the products of combustion, super heated gases, toxic gases and all other potentially injurious atmospheric contaminants.

It is mandatory that all Fire Department personnel be equipped with a self-contained breathing apparatus (SCBA) and be trained in its proper use and care.

SCBA shall be used by all personnel operating in any of the following situations:

- A working interior fire.
- A location above a working fire.
- In a potentially explosive atmosphere such as natural gas or LPG leaks.
- Vehicle fires.
- Any unventilated confined space.
- Any atmosphere suspected to be oxygen deficient or contaminated with toxic gases.

Before entering any unsafe areas, make sure employee can get out quickly. The respirator will sound an alarm when the air supply is low, which means there is about five minutes of air left. Leave the area immediately. Always work with a buddy in conditions that require wearing the SCBA and whether the alarm sounds or not, leave the area immediately if feeling dizzy, faint or sick. The respirator may not be working properly. When working with a SCBA apparatus, safety and common sense can be matter of life and death.

Choose a SCBA that's the right size and feels comfortable. Do not try to make it more comfortable or better fitting by altering it in any way or repairing it with parts from another respirator. Follow instructions for putting it on, adjusting the straps if necessary.

Each employee will be accountable for the facemask and responsible for its maintenance and cleaning. The following items should be checked daily:

- Cylinder air pressure.
- Regulator and low air alarm bell or whistle.
- Body harness straps
- Face piece free from cracks and tears

Any SCBA not functioning properly will be taken out of service. The SCBA must be thoroughly evaluated, repaired as necessary by a certified technician and tested prior to being returned to service.

HAND PROTECTION POLICY

Many hand injuries can be avoided by following precautions and wearing proper hand protection for the job.

Whether working with heat, sharp or abrasive objects, strong chemicals, or electrical or biological hazards, be sure to use gloves that are right for the job. Use the chart below with the Supervisor's recommendation.

HAZARD	GLOVES
Mild heat, cold, sharp edges	Fabric Gloves
Electricity	Rubber Gloves with Insulated Liners
Chemicals, Corrosives	Rubber, Neoprene, Vinyl
Sparks, rough surfaces, scraping	Leather Gloves
Extreme Heat	Leather, Wool, Terry Cloth
Radiation	Lead-lined Gloves
Knives, sharp cutting edges	Metal-mesh Gloves
Food Handling, Health Services	Disposable Plastic

Employees shall use protective gloves when exposed to the following hazards and any other situations that may require the use of gloves:

- When coming into contact with or working around human body fluids including blood, vomit, etc.
- When cleaning bathrooms, water fountains, sink traps, etc.
- When handling recyclable material including glass or plastic containers, tins and aluminum cans, paper and carton containers, etc.
- During rubbish or Trash Pick-ups.
- When handling extreme hot or cold temperatures.
- When handling solvent and other identifiable toxic substances.
- When lifting or carrying heavy objects or any item that may have sharp edges.

Each employee issued gloves is responsible for their care, maintenance and inspection.

Make sure gloves are the right size. Gloves that are too small tire the hands and wear out quickly, while too-large gloves interfere with work and increase the likelihood of an accident. Check with the Supervisor before wearing gloves around machinery with moving parts – they can get caught. Stay alert to hand safety hazards, follow guidelines for equipment use, and use the right gloves for the situation.

ELECTRIC POWER AND HAND TOOLS POLICY

This policy applies to all employees who use hand and power tools and are exposed to the hazards of falling, flying, abrasive and splashing objects. All electrical connections for these tools must be suitable for the type of tool and the working conditions (e.g. wet, dusty, flammable vapors). When a temporary power source is used, a ground-fault circuit interrupter shall be used. Four basic safety rules can help prevent hazards associated with the use of hand and power tools:

- Keep all tools in good condition with regular maintenance.
- Use the right tool for the job.
- Examine each tool for damage before use and do not use damaged tools.
- Operate tools according to the manufacturers' instructions.

Hand Tools

Hand tools are tools that are powered manually and include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance. Some examples include the following:

- If a screwdriver is used as a chisel, the tip of the screwdriver may break and fly off, hitting the user or other employees.
- If a wooden handle on a tool, such as a hammer or an axe, is loose, splintered, or cracked, the head of the tool may fly off and strike the user or other employees.
- If the jaws of a wrench are sprung, the wrench might slip.
- If impact tools such as chisels, wedges or drift pins have mushroomed heads, the heads might shatter on impact, sending sharp fragments flying toward the user or other employees.

To prevent hazards associated with the use of hand tools, employees should observe the following general precautions:

- Employees should be trained in the proper use and handling of tools and equipment. When using saw blades, knives or other tools, employees should direct the tools away from aisle areas and away from other employees.
- Knives and scissors must be sharp. Dull tools can cause more hazards than sharp ones.
- Cracked saw blades must be removed from service.
- Wrenches must not be used when jaws are sprung to the point that slippage occurs.

- Impact tools such as drift pins, wedges and chisels must be kept free of mushroomed heads. The wooden handles of tools must not be splintered.
- Iron or steel hand tools may produce sparks that can be an ignition source around flammable substances. Where this hazard exists, spark-resistant tools made of non-ferrous materials should be used.
- Appropriate personal protective equipment such as safety goggles and gloves must be worn to protect against hazards that may be encountered while using hand tools.
- Workplace floors shall be kept clean and dry to prevent accidental slips with or around dangerous hand tools.

Power Tools

Power tools are extremely hazardous when used improperly and must be fitted with guards and safety switches. The types of power tools are determined by their power source: electric, pneumatic, liquid fuel, and hydraulic.

To prevent hazards associated with the use of power tools, employees should observe the following general precautions:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil and sharp edges.
- Disconnect tools when not using them, before servicing and cleaning them and when changing accessories such as blades, bits, and cutters.
- Keep all employees not involved with the work at a safe distance from the work area.
- Secure work with clamps or a vise, freeing both hands to operate the tool.
- Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
- Maintain tools with care. Keep them sharp and clean for best performance.
- Follow instructions in the user's manual for lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance when operating power tools.
- Wear proper apparel for the task. Loose clothing, ties or jewelry can become caught in moving parts.
- Remove all damaged portable electric tools from use and tag them: "Do Not Use."

- When working on ladders or scaffolding rest power tools on a flat surface or in a bin secured to the ladder (a falling tool can seriously injure a co-worker or bystander).
- Before plugging or unplugging tools, be sure power switch is turned to "off".
- Do not mix horseplay and power tools,, and don't tolerate this type of behavior from other workers.

Guards

The exposed moving parts of power tools need to be safeguarded. Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating or moving parts of equipment must be guarded. Machine guards, as appropriate, must be provided to protect the operator and others from the following:

- Point of operation.
- Nip points.
- Rotating parts.
- Flying chips and sparks.

Safety guards must never be removed when a tool is being used. Portable circular saws having a blade greater than two inches (5.08 centimeters) in diameter must be equipped at all times with guards. An upper guard must cover the entire blade of the saw. A retractable lower guard must cover the teeth of the saw except where it makes contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work material.

Operating Controls and Switches

The following hand-held power tools must be equipped with a constant-pressure switch or control that shuts off the power when pressure is released:

- drills
- tappers
- fastener drivers
- horizontal, vertical and angle grinders with wheels more than two inches (5.08 centimeters) in diameter
- disc sanders with discs greater than two inches (5.08 centimeters)
- belt sanders
- reciprocating saws
- saber saws
- scroll saws

- jigsaws with blade shanks greater than 1/4-inch (0.63 centimeters) wide
- other similar tools

These tools also may be equipped with a "lock-on" control, if it allows the worker to also shut off the control in a single motion using the same finger or fingers.

The following hand-held power tools must be equipped with either a positive "on-off" control switch, a constant pressure switch or a "lock-on" control:

- disc sanders with discs two inches (5.08 centimeters) or less in diameter;
- grinders with wheels two inches (5.08 centimeters) or less in diameter;
- platen sanders, routers, planers, laminate trimmers, nibblers, shears and scroll saws;
- jigsaws, saber and scroll saws with blade shanks 1/4-inch (6.35 millimeters) or less in diameter.

It is recommended that the constant-pressure control switch be regarded as the preferred device.

Other hand-held power tools such as circular saws having a blade diameter greater than two inches (5.08 centimeters), chain saws and percussion tools with no means of holding accessories securely must be equipped with a constant-pressure switch.

Electric Tools

Employees using electric tools must be aware of several dangers. Among the most serious hazards are electrical burns and shocks. Electrical shocks, which can lead to injuries such as heart failure and burns, are among the major hazards associated with electric powered tools. Under certain conditions, even a small amount of electric current can result in fibrillation of the heart and death. An electric shock also can cause the employee to fall off a ladder or other elevated work surface and be injured due to the fall.

To protect the user from shock and burns, electric tools must have a three-wire cord with a ground and be plugged into a grounded receptacle, be double insulated or be powered by a low voltage isolation transformer. Three-wire cords contain two current-carrying conductors and a grounding conductor.

Any time an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong must never be removed from the plug. Double-insulated tools are available that provide protection against electrical shock without third-wire grounding. On double insulated tools, an internal layer of protective insulation completely isolates the external housing of the tool. The following general practices should be followed when using electric tools:

- Operate electric tools within their design limitations.
- Use gloves and appropriate safety footwear when using electric tools.
- Store electric tools in a dry place when not in use.
- Do not use electric tools in damp or wet locations unless they are approved for that purpose.
- Keep work areas well lit when operating electric tools.
- Ensure cords from electric tools do not present a tripping hazard.
- Employees who use electric tools must be protected by ground-fault circuit interrupters or an assured equipment-grounding conductor program.

Portable Abrasive Wheel Tools

Portable abrasive grinding, cutting, polishing and wire buffing wheels create special safety problems because they may throw off flying fragments.

Abrasive wheel tools must be equipped with guards that: (1) cover the spindle end, nut and flange projections, (2) maintain proper alignment with the wheel and (3) do not exceed the strength of the fastenings.

Before an abrasive wheel is mounted, it must be inspected closely for damage and should be sound- or ring-tested to ensure it is free from cracks or defects.

- To test, wheels should be tapped gently with a light, non-metallic instrument. If the wheels sound cracked or dead, they must not be used because they could fly apart in operation.
- A stable and undamaged wheel, when tapped, will give a clear metallic tone or "ring."
- To prevent an abrasive wheel from cracking, it must fit freely on the spindle. The spindle nut must be tightened enough to hold the wheel in place without distorting the flange.
- Always follow the manufacturer's recommendations.
- Take care to ensure the spindle speed of the machine will not exceed the maximum operating speed marked on the wheel.
- An abrasive wheel may disintegrate or explode during start-up. Allow the tool to come up to operating speed prior to grinding or cutting.

- The employee should never stand in the plane of rotation of the wheel as it accelerates to full operating speed.
- Portable grinding tools need to be equipped with safety guards to protect employees not only from the moving wheel surface, but also from flying fragments in case of wheel breakage.

When using a powered grinder:

- Always use eye or face protection.
- Turn off the power when not in use.
- Never clamp a hand-held grinder in a vise.

Pneumatic Tools

- Pneumatic tools are powered by compressed air and include chippers, drills, hammers and sanders. There are several dangers associated with the use of pneumatic tools. First and foremost is the danger of getting hit by one of the tool's attachments or by some kind of fastener the employee is using with the tool.
- Pneumatic tools must be fastened securely to the air hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool must also be used as an added safeguard.
- If an air hose is more than 1/2-inch (12.7 millimeters) in diameter, a safety excess flow valve must be installed at the source of the air supply to reduce pressure in case of hose failure. In general, the same precautions should be taken with an air hose that are recommended for electric cords, because the hose is subject to the same kind of damage or accidental striking, and because it also presents tripping hazards.
- When using pneumatic tools, a safety clip or retainer must be installed to prevent attachments such as chisels on a chipping hammer from being ejected during tool operation.
- Pneumatic tools that shoot nails, rivets, staples or similar fasteners and operate at pressures more than 100 pounds per square inch (6,890 kPa), must be equipped with a special device to keep fasteners from being ejected, unless the muzzle is pressed against the work surface.
- Airless spray guns that atomize paints and fluids at pressures of 1,000 pounds or more per square inch (6,890 kPa) must be equipped with automatic or visible manual safety devices that will prevent pulling the trigger until the safety device is manually released.
- Eye protection is required, and head and face protection is recommended for employees working with pneumatic tools.

- Screens must also be set up to protect nearby employees from being struck by flying fragments around chippers, riveting guns, staplers or air drills.
- Compressed air guns should never be pointed toward anyone.
- Employees should never "dead-end" them against themselves or anyone else.
- A chip guard must be used when compressed air is used for cleaning.
- Use of heavy jackhammers can cause fatigue and strains. Heavy rubber grips reduce these effects by providing a secure handhold.
- Workers operating a jackhammer must wear safety glasses and safety shoes to protect against injury if the jackhammer slips or falls.
- A face shield should be used.
- Working with noisy tools such as jackhammers requires proper, effective use of appropriate hearing protection.

Liquid Fuel Tools

Fuel-powered tools are usually operated with gasoline. The most serious hazard associated with the use of fuel-powered tools comes from fuel vapors that can burn or explode and also give off dangerous exhaust fumes. The employee must be careful to handle, transport and store gas or fuel only in approved flammable liquid containers, according to proper procedures for flammable liquids. Before refilling a fuel-powered tool tank, the user must shut down the engine and allow it to cool to prevent accidental ignition of hazardous vapors. When a fuel-powered tool is used inside a closed area, effective ventilation and/or proper respirators such as atmosphere-supplying respirators must be utilized to avoid breathing carbon monoxide. Fire extinguishers must also be available in the area.

Hydraulic Power Tools

The fluid used in hydraulic power tools must be an approved fire resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The exception to fire-resistant fluid involves all hydraulic fluids used for the insulated sections of derrick trucks, aerial lifts and hydraulic tools that are used on or around energized lines. This hydraulic fluid shall be of the insulating type.

The manufacturer's recommended safe operating pressure for hoses, valves, pipes, filters, and other fittings must not be exceeded. All jacks, including lever and ratchet jacks, screw jacks and hydraulic jacks, must have a stop indicator, and the stop limit must not be exceeded. Also, the manufacturer's load limit must be permanently marked in a prominent place on the jack, and the load limit must not be exceeded.

A jack should never be used to support a lifted load. Once the load has been lifted, it must immediately be blocked up. Put a block under the base of the jack when the foundation is not firm, and place a block between the jack cap and load if the cap might slip.

To set up a jack, make certain of the following:

- The base of the jack rests on a firm, level surface,
- The jack is correctly centered,
- The jack head bears against a level surface, and
- The lift force is applied evenly.

Proper maintenance of jacks is essential for safety. All jacks must be lubricated regularly. In addition, each jack must be inspected according to the following schedule: (1) for jacks used continuously or intermittently at one site—inspected at least once every six months, (2) for jacks sent out of the shop for special work—inspected when sent out and inspected when returned, and (3) for jacks subjected to abnormal loads or shock—inspected before use and immediately thereafter.

Employee Training

- Supervisors shall train employees to operate the tool regardless of their similarity to another tool of the same type.
- Employees should be able to demonstrate the safe operation of the tool.
- Employees should inspect equipment before each use.
- They shall demonstrate defects in machinery.
- Supervisors shall train employees to report defects and method of obtaining a replacement tool.

ELECTRICAL SAFETY POLICY

This policy focuses on the design and use of electrical equipment and systems. The policy covers only the exposed or operating elements of an electrical installation such as lighting, equipment, motors, machines, appliances, switches, controls, and enclosures, requiring that they be constructed and installed to minimize workplace electrical dangers. Installation of main building electrical systems, transformers, power-lines, underground lines or other system devices shall be installed by a trained and licensed electrical contractor.

There are four main types of electrical injuries: electrocution (death due to electrical shock), electrical shock, burns and falls. Employees will be trained to recognize, evaluate, control or eliminate the hazards.

Recognizing Hazards

The first step toward protecting workers is to recognize the many hazards faced on the job. To do this, the Supervisor and employee must know which situations can place employees in danger. The following is a checklist to be used to evaluate potential hazardous conditions or exposures:

- Wiring is adequate.
- Electrical equipment is appropriate for the environment, with the correct capacity and labeling.
- Equipment is in good condition and not damaged before installation.
- The current will break at the listed rating for the circuit breaker.
- Electrical parts are not exposed.
- Overhead power-lines are not within contact range of work area.
- Wires do not have poor insulation.
- Electrical systems and tools that are grounded or double-insulated.
- Circuits are not overloaded.
- Damaged power tools and equipment are removed from site.
- Appropriate PPE is used by employees.
- Appropriate tools are used by employees.
- Chemicals are labeled and used correctly.
- Ladders do not conduct electricity.
- The area is dry with no standing water.
- Equipment is installed securely.
- Equipment is not exposed to possible overheating due to poor air circulation or covering the ventilation device.

Extension Cord Use

The size of wire in an extension cord must be compatible with the amount of current the cord is expected to carry. The amount of current depends on the equipment plugged into the extension cord. Current ratings (how much current a device needs to operate) are often printed on the nameplate. If a power rating is given, it is necessary to divide the power rating in watts by the voltage to find the current rating. For example, a 1,000-watt heater plugged into a 120-volt circuit will need almost 10 amps of current. Add to find the total current needed to operate all the appliances supplied by the cord. Choose a wire size that can handle the total current. Remember—the larger the gauge number, the smaller the wire.

The length of the extension cord also needs to be considered when selecting the wire size. Voltage drops over the length of a cord. If a cord is too long, the voltage drop can be enough to damage equipment. Many electric motors only operate safely in a narrow range of voltages and will not work properly at voltages different than the voltage listed on the nameplate. Even though light bulbs operate (somewhat dimmer) at lowered voltages, do not assume electric motors will work correctly at less-than-required voltages. Also, when electric motors start or operate under load, they require more current. The larger the size of the wire, the longer a cord can be without causing a voltage drop that could damage tools and equipment.

The grounding path for extension cords must be kept intact to keep employees safe. A typical extension cord grounding system has four components:

- a third wire in the cord, called a ground wire;
- a three-prong plug with a grounding prong on one end of the cord;
- a three-wire, grounding-type receptacle at the other end of the cord; and
- a properly grounded outlet.

Extension cords might be used in wet places, so adequate insulation is necessary to prevent shocks. Because extension cords are often used near combustible materials (such as wood shavings and sawdust) a short in an extension cord could easily cause arcing and a fire.

Cords must be replaced when the internal wire is cut in any form. Minor repairs may be made with the use of electric rated tape to the exterior plastic protection of a cord. The supervisor will determine when the cord should be removed from service. Any damage to the connecting plug, grounding prong or wire should render the cord out of service. The cord shall

be cut up and thrown away. Cords shall be inspected quarterly and documented.

Isolate Energized Components
Electrical hazards exist when wires or other electrical parts are exposed. These hazards need to be controlled to create a safe work environment. Isolation can be accomplished by placing the energized parts at least eight feet high and out of reach, or by guarding. Guarding is a type of isolation that uses various structures—like cabinets, boxes, screens, barriers, covers and partitions—to close off live electrical parts.

Practice the following precautions to prevent injuries from contact with live parts:

- Immediately report exposed live parts to a supervisor if not authorized to make repairs to equipment.
- Provide guards or barriers if live parts cannot be enclosed completely.
- Use covers, screens or partitions for guarding that require tools to remove them.
- Replace covers that have been removed from panels, motors or fuse boxes.
- Even when live parts are elevated to the required height (eight feet), care should be taken when using objects (like metal rods or pipes) that can contact these parts.
- Overhead powerlines shall be insulated or shielded to prevent contact if operations require employee to be within the contact area.
- Close unused conduit openings in boxes so that foreign objects (pencils, metal chips, conductive debris, etc.) cannot get inside and damage the circuit.

Use Proper Insulation
Insulation is made of material that does not conduct electricity (usually plastic, rubber, or fiber). Insulation covers wires and prevents conductors from coming in contact with each other or any other conductor. If conductors are allowed to make contact, a short circuit is created. In a short circuit, current passes through the shorting material without passing through a load in the circuit, and the wire becomes overheated. Insulation keeps wires and other conductors from touching, which prevents electrical short circuits.

- In all situations, employees must be careful not to damage insulation while installing it.
- Do not allow staples or other supports to damage the insulation.

- Bends in a cable must have an inside radius of at least 5 times the diameter of the cable so that insulation at a bend is not damaged.
- Extension cords come with insulation in a variety of types and colors. The insulation of extension cords is especially important.
- Insulation on individual wires is often color-coded. In general, insulated wires used as equipment grounding conductors are either continuous green or green with yellow stripes. The grounded conductors that complete a circuit are generally covered with continuous white or gray insulation. The ungrounded conductors, or "hot" wires, may be any color other than green, white, or gray. They are usually black or red.
- Conductors and cables must be marked by the manufacturer to show the following:
    - Maximum voltage capacity,
    - AWG size,
    - Insulation-type letter, and
    - The manufacturer's name or trademark.

Control Hazards of Fixed Wiring

The National Electric Code (NEC) requirements for fixed wiring shall always be followed. The wiring methods and size of conductors used in a system depend on several factors:

- Intended use of the circuit system
- Building materials
- Size and distribution of electrical load
- Location of equipment (such as underground burial)
- Environmental conditions (such as dampness)
- Presence of corrosives
- Temperature extremes

Aluminum wire and connections should be handled with special care. Connections made with aluminum wire can loosen due to heat expansion and oxidize if they are not made properly. Loose or oxidized connections can create heat or arcing. Special clamps and terminals are necessary to make proper connections using aluminum wire. Antioxidant paste can be applied to connections to prevent oxidation.

Control Hazards of Flexible Wiring

Electrical cords supplement fixed wiring by providing the flexibility required for maintenance, portability, isolation from vibration, and emergency and temporary power needs. Flexible wiring can be used for extension cords or power supply cords. Power supply cords can be removable or permanently

attached to the appliance. Flexible cords cannot be used as a substitute for the fixed wiring of a structure. Flexible cords must not be:

- run through holes in walls, ceilings or floors;
- run through doorways, windows or similar openings (unless physically protected);
- attached to building surfaces (except with a tension take-up device within six feet of the supply end);
- hidden in walls, ceilings or floors; or
- hidden in conduit or other raceways.

Ground Circuits and Equipment

When an electrical system is not grounded properly, a hazard exists. This is because the parts of an electrical wiring system that a person normally touches may be energized, or live, relative to ground. Parts like switch plates, wiring boxes, conduit, cabinets and lights need to be at 0 volts relative to ground. If the system is grounded improperly, these parts may be energized. The metal housings of equipment plugged into an outlet needs to be grounded through the plug.

Metal plumbing is often used as a ground. When plumbing is used as a grounding conductor, it must also be connected to a grounding device such as a conductive rod. Rods used for grounding must be driven at least eight feet into the ground.

Leakage current occurs when an electrical current escapes from its intended path. Leakages are sometimes low-current faults that can occur in all electrical equipment because of dirt, wear, damage or moisture.

A ground fault occurs when current passes through the housing of an electrical device to ground. Proper grounding protects against ground faults. Ground faults are usually caused by misuse of a tool or damage to its insulation. This damage allows a bare conductor to touch metal parts or the tool housing. Grounding does not guarantee that an employee will not be shocked, injured, or killed from defective equipment. However, it greatly reduces the possibility.

Equipment needs to be grounded under any of these circumstances:

- The equipment is within eight feet vertically and five feet horizontally of the floor or walking surface.
- The equipment is within eight feet vertically and five feet horizontally of grounded metal objects that could be touch.
- The equipment is located in a wet or damp area and is not isolated.

- The equipment is connected to a power supply by cord and plug and is not double-insulated.

Ground Fault Circuit Interrupters (GFCI)
A GFCI is a fast-acting switch that detects any difference in current between two circuit conductors. If either conductor comes in contact—either directly or through part of a body—with a ground (a situation known as a ground fault), the GFCI opens the circuit in a fraction of a second. If a current as small as 4 to 6 mA does not pass through both wires properly, but instead leaks to the ground, the GFCI is tripped. The current is shut off. For a GFCI to work properly, the neutral conductor (white wire) must (1) be continuous, (2) have low resistance, and (3) have sufficient current-carrying capacity.

GFCIs help protect employees from electrical shock by continuously monitoring the circuit. However, a GFCI does not protect a person from line-to-line hazards such as touching two "hot" wires (240 volts) at the same time or touching a "hot" and neutral wire at the same time. Also be aware that instantaneous currents can be high when a GFCI is tripped. A shock may still be felt. A reaction to the shock could cause injury, perhaps from falling.

Test GFCIs regularly by pressing the "test" button. If the circuit does not turn off, the GFCI is faulty and must be replaced. The NEC requires that GFCIs be used in these high-risk situations:

- Electricity is used near water.
- The user of electrical equipment is grounded (by touching grounded material).
- Circuits are providing power to portable tools or outdoor receptacles.
- Temporary wiring or extension cords are used.

Specifically, GFCIs must be installed in bathrooms, garages, outdoor areas, crawl spaces, unfinished basements, kitchens and near wet bars.

Bond Components to Assure Grounding Path
In order to assure a continuous, reliable electrical path to ground, a bonding jumper wire is used to make sure electrical parts are connected. To make a good electrical connection, a bonding jumper needs to be installed. A metal cold water pipe that is part of a path to ground may need bonding jumpers around plastic anti-vibration devices, plastic water meters or sections of plastic pipe. A bonding jumper is made of conductive material and is tightly connected to metal pipes with screws or clamps to bypass the plastic and assure a continuous grounding path. Bonding jumpers are necessary

because plastic does not conduct electricity and would interrupt the path to ground. Additionally, interior metal plumbing must be bonded to the ground for electrical service equipment in order to keep all grounds at the same potential (zero volts). Even metal air ducts should be bonded to electrical service equipment.

Control Overload Current Hazards

When a current exceeds the current rating of equipment or wiring, a hazard exists. The wiring in the circuit, equipment, or tool cannot handle the current without heating up or even melting. Not only will the wiring or tool be damaged, but the high temperature of the conductor can also cause a fire. To prevent this from happening, an over-current protection device (circuit breaker or fuse) is used in a circuit. These devices open a circuit automatically if they detect current in excess of the current rating of equipment or wiring. This excess current can be caused by an overload, short circuit or high-level ground fault. Over-current protection devices are designed to protect equipment and structures from fire. They do not protect you from electrical shock.

A circuit breaker should not be used regularly to turn power on or off in a circuit, unless the breaker is designed for this purpose and marked SWD (stands for "switching device"). A fuse is another type of over-current protection device. After an overload is found and corrected, a blown fuse must be replaced with a new one of appropriate amperage.

Hazardous Environments

Only equipment rated for hazardous environments shall be used or taken into the environment. Hazardous environments are places that contain flammable or explosive materials such as flammable gasses or vapors (Class I Hazardous Environments) finely pulverized flammable dusts (Class II Hazardous Environments) or fibers or metal filings that can catch fire easily (Class III Hazardous Environments). Hazardous environments may be found in aircraft hangers, gas stations, storage plants for flammable liquids, grain silos and mills where cotton fibers may be suspended in the air. Special electrical systems are required in hazardous environments.

MACHINE GUARDING POLICY

This policy establishes the requirements for isolation of both point of operation and power transmission hazards so employees are protected from getting caught in or struck by machines or equipment during usage, servicing and repair.

Responsibilities
The Department Head is responsible for developing, implementing and enforcing the use of this policy.

Supervisors
- Ensure training is conducted and documented for all covered employees.
- Ensure machine operators conduct daily inspections of the guards and devices. The inspections should verify the units work as designed and the operators are protected.
- Make sure all required operators test all machine guarding before any machine is used.
- Assure that all employees in the area know not to try to operate the equipment if it is not protected.
- Assure that the authorized person performs the repair of any machine guarding that is found not operating, as required before any machine is used.
- Participate in developing written procedures for all pieces of equipment that may need repair to make sure that all guards and devices are put back in operation and tested before being released to any department or operator.
- Maintain an adequate supply of locks, tags, multiple lock adapters (hasps) and single-use cable ties to secure tags that meet the requirements identified in the Lockout/Tagout Policy, for use by employees on multiple energy source equipment.
- Assure that only employees trained as "Authorized" are allowed to perform repair on equipment.
- Maintain full repair records as well as inspection records.
- Assure all new equipment purchased for the facility is guarded as required by this Policy when possible.

Employees
- All employees must follow the procedures in this policy as they apply to their classification as operator, or other employee.

- Actively participate in assigned training sessions, and follow the instructions provided.

Employee Training

- Review of general machine guarding.
- Review of specific procedures for machinery, equipment and processes.
- Location and use of specific machine guarding procedures.
- Procedures when questions arise

Only trained and authorized employees will repair, replace or adjust machinery, equipment or processes as authorized by management when all required training is in place. No employee may alter or make any guard or device ineffective so as to change the protection of any machine or operation.

Routine Maintenance & Machine Adjustments

Machine guarding procedures are not required if equipment must be operating for proper adjustment. This rare exception may be used only by trained and authorized employees when specific procedures have been developed to safely avoid hazards with proper training. All consideration shall be made to prevent the need for an employee to break the plane of a normally guarded area of the equipment by use of tools and other devices. Supervisor permission is required before any operation without guards.

HAZARD COMMUNICATION POLICY

The Hazard Communication Policy's purpose is to protect employees from exposure to hazardous chemicals that could harm their health and to help assure the evaluation and transmission of information concerning chemicals used in the workplace. This policy sets uniform guidelines to be used as a minimum.

Department Heads/Supervisors
Coordinate and meet all requirements of this policy.

Employees
Responsible for following the Hazard Communication Policy requirements.

Chemical Inventory
A chemical inventory must be performed for all chemicals used. This is not limited to just liquids, but could also include solids, mists, dusts, gases, fumes, vapors and biological constituents. Those items purchased and used in the same manner and quantity as would be in a residential setting (i.e. White Out, glass cleaner, etc.) do not have to be part of this inventory.

The inventory shall list the chemical name, department used in, storage areas, the quantity and the MSDS date.

Chemical Name	Department	Storage Area	Quantity	MSDS Date
1.				
2.				
3.				
4.				

Hazardous Chemical List
Hazardous chemicals present at worksites and for which MSDSs are on file should be listed in the front of the MSDS manual. The list should have both the manufacturer's name and the trade names of each chemical. Any new chemical received should be added to the list immediately. The **supervisor** will be responsible for maintaining the chemical list.

Material Safety Data Sheets (MSDS)
MSDSs prepared by the chemicals manufacturer and sent by the supplier shall be used to provide information to the employees. The **supervisor** has the responsibility of ensuring MSDSs are received on all purchased

hazardous chemicals upon receipt of the product. When MSDSs are not received, a letter should be sent or a telephone call placed to the manufacturer requesting the MSDS. A record of all correspondence and phone calls will be kept to comply with state and federal regulations covering these requirements.

Copies of MSDSs are to be kept on file **in each department and** available for employee review at any time. MSDSs should also be located in the jobsite trailer or in company vehicle. Any missing, incomplete or inaccurate MSDSs are to be reported to the **supervisor** who will order an updated copy from the manufacturer. MSDSs should be retained for 30 years as part of medical records retention rules under 29 CFR 1910.1020.

MSDS Requirements

1. Obtain from distributor or manufacturer.
2. Written in English. Other languages may be obtained, but there must be an English version available.
3. Readily accessible within employee work area. They can be electronic, but employee must know how to obtain, and must be available should there be loss of power.
4. It's recommended to keep the lists forever, and they may be used for legal purposes should an exposure occur with an old chemical.
5. Establish an MSDS renewal plan that best fits each work place, updating the data sheets as needed.
6. There is no standard format, but the MSDS must list the following:
   - Chemical identity on label
   - Chemical and common name
   - Chemical and common name of all ingredients if it's a mixture
   - Physical and chemical characteristics
   - Physical hazards
   - Health hazards
   - Routes of entry
   - Exposure limits
   - Carcinogen or not
   - Precautions for safe handling and use
   - Hazard control measures
   - Emergency and first aid procedures
   - Date of preparation or last change
   - Contact information of manufacturer

Labeling

1. For hazardous chemicals purchased from suppliers, labeling information will be provided by the suppliers. Existing labels will not be removed or defaced unless the container is immediately relabeled with the trade name and hazard warnings. Missing or defaced labels will be replaced as soon as possible. All employees should report missing or defaced labels to their supervisor immediately.
2. When hazardous chemicals are transferred from the original container to transfer/use containers, the latter must be labeled with trade name and hazard warnings.
3. Labels for transfer/use containers will either be obtained from the supplier or will be prepared by the **supervisor**.
4. The **supervisor** will be responsible for labeling containers.

Labeling Requirements

Each container must be labeled, tagged or marked with the identity of hazardous chemicals contained therein, and must show hazard warnings appropriate for employee protection. The hazard warning can be any type of message, words, pictures or symbols that provide at least general information regarding the hazards of the chemical(s) in the container and the targeted organs affected, if applicable. Labels must be legible, in English (plus other languages, if desired) and prominently displayed.

Informing and Training Employees

General Training

All employees subject to exposure to hazardous chemicals will receive basic training on the following topics:

- The Hazard Communication Policy.
- Description of MSDSs and how to read them.
- Container labels or other forms of warning and how to read and interpret hazard information.
- Location and availability of this Policy.
- Location and availability of the Hazardous Chemical list and MSDSs for review.
- General methods and observations that may be used to detect the presence of a hazardous chemical.

Specific Training

- Employees must be trained in the hazards and protective measures for each hazard to which they have significant potential for exposure.

- Employees must be informed when new hazards are introduced in their work area and trained on correct handling and work procedures involving the product.
- Employees will be provided with personal protective equipment and properly trained in its use when conditions warrant its use or when an employee requests it.
- When non-routine tasks are to be performed by employees, they shall review chemical hazards associated with the process with their supervisor prior to commencement of the task. Training will be conducted covering safe use of the chemicals involved, hazards of exposure and protective equipment use to prevent exposure to the chemicals.

Training Documentation

- Document the date, time, topic covered and who attended.
- General employee training is ideal during the new employee safety orientation.
- Have a detailed session for those who work or handle the hazardous chemicals.
- Chemicals can be explained and grouped together or a session on each chemical can be held.
- Designate person(s) responsible for conducting training.

Hazard Communication Policy
Employee Training Acknowledgment

_____
Instructor

_____
Date

The undersigned employees of **the City of Sedalia** acknowledge they have received hazard training (includes initial, non-routine task, and/or retraining) on the Hazard Communication Policy and have received instruction on the current hazardous chemicals in their work area, how to read the MSDSs and interpret hazard information, and protective measures to use with chemicals in use in their area.

Name Signature

_____

_____

_____

_____

_____

_____

_____

_____

Note:

_____

_____

BLOOD BORNE PATHOGENS POLICY

Blood borne pathogens are microorganisms found in human blood, which can cause diseases in humans. Human blood can be found in the following blood, semen, feces, amniotic fluid, saliva and several other bodily fluids. Infectious diseases, which are associated with exposure to blood borne pathogens, include HIV, hepatitis B and C, malaria, syphilis, viral hemorrhagic fever and several others. Any operations, which may result in a cut, puncture or amputation, could expose employees to blood borne pathogens. Proper work methods and use of personal protective equipment are required when the presence of human blood is anticipated.

All suspicious material should be treated as if it were infected with a blood borne pathogen. This approach to infection control is called universal precautions. Universal precautions should be implemented whenever a blood borne pathogen's presence is in question or known. Universal precautions are a combination of work practices and use of personal protective equipment used to protect employees from exposure to all human blood or other potentially infected material.

Work Practices for Blood Borne Pathogen Cleaning

- Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses are prohibited in work areas where there is a likelihood of exposure.
- All procedures involving blood shall be performed in such a manner as to minimize splashing, spraying and splattering.
- Personal protective equipment shall be worn at all times while handling blood laden material.
- All employees shall wash their hands and exposed skin with soap and water as soon as possible when handling a blood laden material. This applies even when personal protective equipment is worn.
- If skin is exposed directly to a blood laden material, it should be washed immediately. If washing facilities are not easily accessible, non-water antibacterial gel should be used immediately. The exposed area should be washed with soap and water as soon as possible.
- All personal protective equipment shall be removed as soon as possible upon leaving the work area and placed in designated containers for storage or washing.
- All contaminated trash shall be placed in a leak proof disposable container or trash bag.

- All exposures, puncture with a potentially contaminated object or other exposure situations shall be reported to the employee's direct supervisor.
- All exposures shall be reported with an Employer's Exposure Incident Investigation Form immediately.
- Provision for hepatitis B vaccination series shall be made available as soon as possible but no later than 24 hours after exposure for all exposed employees.

*See **Exposure Incident Investigation Form** At End of This Section*

Personal Protective Equipment for Handling Blood Borne Pathogens

- Latex or rubber gloves shall be worn when blood-laden materials are handled.
- Splash proof goggles shall be worn when there is an exposure of blood-laden material being splashed in the eyes of the employee. Ex: Wash blood off a wall with liquid.
- Disposable aprons or full-body work clothing shall be worn whenever potential clothing contamination exists.
- If non-disposable clothing is worn, proper laundry handling procedures should be followed.

Surface Cleaning Procedures

Contaminated walls or other surfaces should be cleaned with an approved disinfectant germicide containing a viralcide or household bleach solution (5.25 percent concentration) in a solution of one-part bleach to ten-part water. Examples of potentially contaminated surfaces include bathroom fixtures and bathroom walls.

Caution should be taken when using a bleach solution. Bleach can also irritate the respiratory system of some individuals. Bleach solutions should be used in a well-ventilated area. If bleach is a possible irritant to an individual, another disinfectant should be used.

Post Exposure

If an employee has had a known exposure to a blood borne pathogen, they should be offered the hepatitis B vaccination series within 24 hours of exposure at no cost to the employee. Follow-up documentation of the route of exposure and circumstances under which the exposure occurred, will be filled out and a copy of the Exposure Incident Form will be placed in Worker Compensation files in the City Clerk's office. The source's blood shall be

tested. Results of testing must be made available to exposed employee and applicable laws followed. The exposed employee's blood must also be tested. If consent is not obtained then the employee must sign a waiver, but can re-elect to be tested at a later date. The employee can receive counseling for exposure.

Incident Analysis
A hazard analysis of the specific incident needs to be conducted by the supervisor or one who has authority to make safety decisions within the department to make the necessary changes so the incident does not occur again.

Hepatitis B. Vaccination
The hepatitis B vaccination series is available at no cost after initial employee training and within ten days. Vaccination is encouraged unless:

1. documentation exists that the employee has previously received the series;
2. antibody testing reveals that the employee is immune; or
3. medical evaluation shows that vaccination is not recommended.

However, if an employee declines the vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept in the employee's personnel file.

Exposure Incident Investigation Form

Employer: _____

Investigator: _____

Date of Exposure Incident: _____

Employee Information:

Name(s)	Home Address	Age & Sex	Social Security #	Length of Employment

Time & location of incident: _____

Employee task & activities at time of incident: _____

Description of incident/illness: _____

Supervisor at time of incident: _____

Part(s) of body contaminated: _____

Quantity of potentially infectious material to which personnel were exposed:

Name & address of Physician & Hospital providing post-exposure care:

What workplace condition, practice, or personal protective equipment contributed to the incident? _____

Describe corrective actions:

Have corrective measures been taken? _____
Date of the last area inspection: _____
Name of Inspector: _____
Was a city safety policy violated? _____
Which policy: _____

Will a new safety policy need to be adopted? _____

Provide new policy recommendations: _____

Additional comments:

HOUSEKEEPING POLICY

Good housekeeping is a necessary requirement for maintaining safety at all workplaces. Clean and tidy work sites hold fewer hazards for all employees. Accidents and injuries are avoided and productivity improved where good housekeeping is a daily occurrence.

General Information
Good housekeeping is possibly the most visible evidence of management and employee concern for safety and health on a day-to-day basis. An orderly workplace contributes to a safe working environment by minimizing obstacles and potential safety and health threats such as spills, trip hazards, etc.

Reasons for housekeeping:
- Prevents accidents.
- Prevents fire.
- Saves time.
- Increases productivity.
- Gives employees the freedom to move.
- Gives employees pride.
- Protects products and equipment.
- Reduces waste.

No program can be successful without employee participation. Employees shall be trained in housekeeping procedures.

Walk-Around Assessment
- The supervisor will walk around the facility for an assessment to identify main housekeeping issues.
- Employees will look for a lack of order, unremoved spills or obstructions or other hazards due to poor organization or poor housekeeping.
- Employees working in each area will identify and recommend corrective actions for their area.
- Grounds will be inspected for refuse or an untidy appearance due to storing materials haphazardly.
- Any hazards found need to be addressed. The nature of the hazard will dictate the speed with which the hazard is addressed. A procedure should be developed to follow up on all noted hazards.
- Copies of the walk-around assessment will be maintained by the department head.

Chemical Storage

Flammable and combustible substances are stored in the following storage areas:

- Flammable and combustible substance storage is not allowed in office areas unless it is required for maintenance and operation of building and storage. Flammable and combustible storage procedures should be in place in each individual department.

Aisles, Walkways, and Floor

- Provide sufficient safe clearances and access to any and all work stations, work areas, fire aisles, fire extinguishers, fire blankets, electrical disconnects, safety showers, other emergency aids, doors and access to stairways.
- Clearly mark to distinguish walkways from areas not for pedestrian traffic.
- Keep aisles and walkways free of physical obstructions that would prevent access, including path-blocking objects, liquid or solid spills and other obstructions.
- Keep aisles at least three feet wide where necessary for reasons of access to doors, windows, or standpipe connections.
- Keep stairs clean, dry, free of waste, well-lit and provided with adequate hand rails and treads that are in good condition.
- Keep floors clean, dry (dry as possible), slip-resistant, free of waste, unnecessary material, oil and grease, protruding nails, splinters, holes or loose boards.
- Provide an adequate number of waste receptacles at accessible locations throughout all work areas.
- Route air hoses, extension cords, etc. out of all travel paths.

Shop Areas

- Maintain adequate lighting systems in a clean and efficient manner and replace bulbs as soon as possible after failure.
- Keep windows clean by washing them regularly.
- Properly maintain doors and windows in a good working order and repair any damage to doors and windows as soon as possible.
- Provide adequate ventilation to all work areas to keep air free of dust and other contaminants.
- Maintain and clean all ventilation systems and HVAC systems at regular intervals.

General Outside Area

- Keep all doors completely free of debris, shrubs or other obstructions.
- Maintain visibility through all windows by washing at regular intervals.
- Keep doors and windows properly maintained.
- Provide any stairs or platforms adjacent to or leading into the building(s) with adequate rails, adequate treads, and an area clean and free of materials.
- Keep grounds neat and orderly, free of refuse and unnecessary materials.
- Store materials outdoors only in designated areas.
- Provide designated walkways, preferably paved and kept clear of snow, ice, materials or any other physical hazards.
- Provide a lighting system that is adequate to allow employees to navigate around the grounds as necessary at dusk and after dark.
- Maintain a neat landscaping appearance. Trim lawn, trees and shrubs in such a way as to minimize any possible safety hazards.
- Prevent trees and shrubs from obstructing doors and windows.

Training

All employees need to fully understand the safety and health hazards of poor housekeeping and improper chemical storage to protect themselves. Employees will be trained in safe work practices, hazard reporting and other areas pertinent to housekeeping.

LADDERS, STAIRWAYS AND FLOOR OPENINGS POLICY

Your life can depend on how you inspect, use and care for ladders.

There are three types of portable ladders: step, single and extension. A step-ladder is self supporting and non-adjustable in length. A single ladder is a single, non-self supporting and non-adjustable in length. An extension ladder is a non-self supporting, adjustable in length portable ladder. Portable ladders can be constructed of wood, aluminum and fiberglass materials.

All portable ladders receive one of four ratings, based on their maximum working load (the maximum weight they can safely support).

Rating	Working Load
Extra heavy duty (I-A)	300 pounds
Heavy duty (I)	250 pounds
Medium duty (II)	225 pounds
Light duty (III)	200 pounds

Check the ladder's load limit and don't exceed its limit. Remember to also include the weight of the tools or materials you plan to use.

General Ladder Practices

The following work practices shall be followed when using a portable ladder:

- Place ladder on a secure footing. Don't try to increase height by standing ladder on boxes or other material.
- Hold ladder in a secure position with a tie off at the top.
- Extend ladder three feet above the point of support.
- Place the ladder at a pitch so the distance is one quarter the working length of the ladder.

- Face the ladder when climbing up or down.
- Short ladders shall not be spliced together to make a longer ladder.
- Never stand on the top step of a ladder. The third rung to the top is the highest an employee should climb on a ladder.
- Use both hands when climbing or descending.
- Never use a metal ladder while working near electrical equipment.
- Never use a ladder for a purpose other than climbing (i.e. no work platforms).
- Inspect the ladder before use. Check for loose, bent rungs, or loose nails or bolts.
- Never use a broken ladder.
- Never lean on the ladder. Your belly button should not pass the side rail.
- Never overload a ladder.
- Never place a ladder against a window or any type of piping.
- Never place a ladder in front of a door that opens out towards the ladder.
- Never attempt to carry tools or other objects while climbing a ladder.
- Extend both side rails out secure on a step ladder before climbing.
- Allow only one person on a ladder at a time.
- Make sure your hands and shoes are clean and dry.

Ladder Maintenance

- Remove broken ladders from the job site. Repair or destroy to prevent reuse.
- Store ladders away from excessive heat and dampness whenever possible.
- Keep ladders clean and free of dirt or grease.
- Inspect and document ladders routinely for defects.

Training Requirements

Supervisors shall train all employees to recognize hazards related to ladders, walking surfaces and stairways, and instruct them to minimize these hazards. Examples include:

- Nature of fall hazards in the work area
- Correct procedures for erecting, maintaining and disassembling the fall protection systems to be used
- Proper construction, use, placement and care in handling of all stairways and ladders and
- Maximum intended load-carrying capacities of ladders used

Supervisors will retrain each employee as necessary to maintain their understanding and knowledge on the safe use and construction of ladders and stairs.

ERGONOMICS AND MATERIAL HANDLING POLICY

This policy applies to all operations, facilities and workstations. It provides a series of specific actions to be implemented with the ultimate goal of integrating ergonomics into every business decision. This process promotes continuous improvement in the efficiency, comfort and well being of all employees through a team effort of management and employee involvement.

The objective is to fit the job and the work area to the employee over time by designing tasks so they are within the employee's capabilities and limitations. This action will lead to the reduction of musculoskeletal disorders (MSDs) and will in turn improve work quality and output, reduce fatigue and absences and reduce employee compensation costs associated with injuries and lost time.

Hazard Assessments

Ergonomics hazards will be addressed by reviewing job duties.

- Review normal job duties for signs of ergonomics problems
- Discuss job duties with employees for their opinion of ergonomics issues
- Review accident reports for prior ergonomics issues
- Look for alternatives and solutions to lessen the ergonomics hazard

Investigate Conditions.

Try to find which jobs may be causing problems by: looking around your workplace, talking to employees and becoming aware of early warning signs:

- Employee fatigue or discomfort
- Employees restricting their movements or range of motion because of fatigue or discomfort (e.g., a stiff neck, sore shoulder, or backache)
- Employees modifying tools, equipment or workstations on their own
- High absenteeism or employee turnover rates
- Poor product or service quality
- Employee reports of problems

To determine which tasks to address first, consider the following:

- Frequency and severity of complaints, symptoms and injuries
- Contributing factors or other problems identified in a particular task
- Employee ideas for improvements
- Difficulty of implementing various improvements
- Time frame for making improvements

- Potential effects on productivity, efficiency and product or service quality
- Technical and financial resources

An Ergonomically Correct Workspace Includes

- Adjustable furniture
- Employee's ability to maintain neutral position and avoid awkward postures and extended reaches
- Variety of working positions available to avoid prolonged static postures
- Adequate room for a full range of body motion
- Easy access to all tools and equipment
- Work items in front of employee and within easy reach

Stretch muscles

- Hand stretches—Make a fist, then extend and spread fingers.
- Wrist and forearm stretches—Hold arms out in front of body and bend hands up and down. Place palms together with fingers pointed upward and elbows pointed out, bring hands down until you feel the stretch.
- Shoulder stretches—Shrug shoulders; roll shoulders forward and back. With elbows out, move arms back to bring shoulder blades together. Reach arms overhead and stretch; bend from side to side.
- Neck stretches—Rotate head up and down. Turn head from side to side. Tilt head toward each shoulder.
- Back and arm stretches—Put hands behind head and pinch shoulder blades together. Bend forward in chair and touch the floor. While sitting, grasp your shin or knee and pull knee toward your chest. Stand up, place hands on your hips and bend backwards.

Take breaks

- Eye breaks—Every 20 minutes look away from the monitor and focus on something at a distance of about 20 feet for a minute or so. This allows eye muscles to relax. Also, blink rapidly for a few seconds to refresh the eye's surface.
- Mini-break—keyboarding is typically done in short bursts. Between those bursts of activity, allow your hands to relax in a flat and straight posture. A mini-break is not a break from work; rather it is a break from using the typing or "mousing" muscles. Make a phone call or file some documents.
- Rest breaks—Take a short rest break every 30 to 60 minutes. Stand up and get a drink of water, make some photocopies, etc. Just get away from your computer workstation for a couple of minutes.

Corrective Action
Administrative improvements include changing work practices or the way work is organized.

- Provide variety in jobs.
- Adjust work schedules and work pace.
- Provide recovery time (i.e., muscle relaxation time).
- Modify work practices.
- Ensure regular housekeeping and maintenance of workspaces, tools and equipment.
- Encourage exercise.

Provide variety in jobs—There are a couple of ways to increase variety in jobs. Job enlargement means increasing the variety by combining two or more jobs or adding tasks to a particular job. To be effective, these improvements rely on rotating combining jobs and tasks which differ in the following ways:

- Muscles or body parts used
- Working postures
- Amount of repetition
- Pace of work
- Amount of physical exertion required
- Environmental conditions

Adjusting work schedules and work pace—Try to limit the amount of time any employee has to spend performing a "problem job." If you have new employees or employees returning from long absences, introduce them to a normal work pace and workload gradually. Try to break up work with frequent, short recovery periods. Even recovery periods as short as a few seconds on a regular basis are helpful.

Modify work practices—Employees should be encouraged to be comfortable, to change positions and to stretch when working.

MOUNTING AND DISMOUNTING EQUIPMENT AND VEHICLES POLICY

Getting in and out of larger equipment can cause occupational accidents. The higher seating areas require the employee to climb up into the cab. Employees often fall injuring their backs, legs or ankles. Employees should receive training on and supervisors are to enforce the following safety rules:

- Park in an area of low traffic to avoid, dismounting into traffic.
- Set equipment parking brake.
- Maintain a three-point contact when mounting and dismounting by keeping two feet and one hand or two hands and one foot on the machine/ladder/basket at all times.
- Face the equipment when mounting or dismounting.
- Do not jump down to the ground.
- Do not swing out and off of the equipment.
- Go slow to prevent slipping.
- Make sure shoes are clean of mud or other slippery substances.
- Perform regular preventive maintenance inspections on equipment mechanical features, ladders, rungs, handles/handholds and attachment points for personal fall arrest systems.
- Seatbelts should always be used, along with any other required equipment.

Three-Point Contact

SEATBELT USAGE POLICY

The City of Sedalia values the lives and safety of our employees. Because it is estimated that seat belts reduce the risk of motor vehicle fatalities by 45 percent, the City of Sedalia has adopted the following policy concerning employee seatbelt usage.

In addition to following all traffic regulations, all employees and their passengers are required to wear a properly worn seatbelt when traveling in any vehicle while conducting city business. This requirement applies to all city owned vehicles, rental vehicles or vehicles owned by individual employees, regardless of whether the employee is compensated for the use of his/her vehicle.

If an employee is provided a company-owned vehicle that is used in the course of his/her employment and is also available for that employee's personal use, that employee, together with all passengers who occupy the vehicle at any time and for any purpose, whether business-related or personal, are required to use seatbelts at all times.

A properly worn seatbelt means using all available straps as provided by the manufacturer, snugly fitted to transfer the impact of the collision to the parts of the body that can take it – your hipbones and shoulder bones.

Seatbelts were designed with your safety and security in mind and can make a difference in life or death if you are involved in a vehicle accident. Use your seatbelt. They do save lives!!

FLEET SAFETY POLICY
For Cars, Light Duty and Heavy Duty Trucks

The purpose of this policy is to ensure safety and provide guidance to employees who drive city vehicles.

Responsibilities
Department Head is responsible for ensuring the policies and procedures are enforced by the Fleet Administrator, while providing resources to ensure the vehicles are properly maintained and ensuring employees are trained in defensive driving techniques.

Driver Selection
Drivers will be selected and evaluated upon their ability to operate the city vehicle. The department will:

- Review previous driving experience through reference checks for the last five years.
- A statement will be provided by the driver explaining any denial of driving privileges from former employers.
- A Commercial Drivers License (CDL) is required if the driver operates:
    - A single vehicle with a Gross Vehicle Weight rating (GVWR) of more than 26,000 pounds, or
    - A Gross Combined Weight Rating (GCWR) of more than 26,000 pounds, inclusive of a towed unit with a GVWR of more than 10,000 pounds or more, or
    - Designed to transport at least 16 passengers including the driver, or
    - Transporting a quantity of hazardous materials requiring placarding.
- Ensure drivers are qualified to operate the vehicle(s) they will operate.
- Drivers are subject to the City of Sedalia's Alcohol & Substance Abuse Policy.

Motor Vehicle Record Review
A motor vehicle report will be obtained prior to driving a city vehicle and annually. A driving record that fails to meet the criteria listed below violates this policy and will result in a loss of the privilege of driving a city vehicle.
Criteria that may indicate an unacceptable driving record include, but are not limited to:

- Two or more moving violations within one year.

- Two or more chargeable accidents within one year. Chargeable means the driver is determined to be the primary cause of the accident through speeding or inattention.
- Contributing factors, such as weather or mechanical problems, may be taken into consideration.
- Any combination of accidents and/or moving violations.

Road Testing
A prospective driver will be given a road test in the truck, or similar truck that will be driven. The test will include:

- Inspection of the vehicle for maintenance issues.
- Connecting and disconnecting of trailer to the power unit.
- Use of the vehicle controls, operations and emergency equipment.
- Operating the vehicle in traffic, turning, backing, parking, chocking and passing.
- Emergency braking or stopping.

Alcohol and Drug Testing
Before any employee is allowed to drive a city truck, they must pass an alcohol and drug exam, and be in good physical condition.

General Rules and Regulations for Use of City Vehicles

Assigned city vehicles are provided to eligible employees to enable them to efficiently perform their job functions for the city.

- Seat belts shall be worn by all persons in the vehicle at all times.
- Cellular phones shall not be used by the driver while operating the vehicle. The driver will pull over to a safe parking area for the phone call.
- The fleet administrator is responsible for ensuring proper vehicle maintenance and licensing.
- The vehicle's equipment or features shall not be altered unless prior approval from the fleet administrator is obtained..
- The assigned driver must inform the fleet administrator immediately of any vehicle maintenance needs or safety problems.
- The vehicle's interior and exterior must be kept clean. No vehicle will be used for transporting any bulk material that protrudes from the truck/cargo area or interior compartments including city equipment or hazardous materials unless authorized.
- Employees must have a valid and current driver's license to operate a city vehicle or a personal vehicle, with current auto insurance while on city business. For those employees who are assigned a city vehicle, an

updated copy of their driver's license must be kept on file in each department at all times along with a copy included in the personnel files.
- Copies of the vehicle registration and insurance card must be kept in the city vehicle at all times.
- Vehicles are subject to inspection at any time.
- Periodic defensive driving education and training will be offered. All employees utilizing city vehicles or conducting city business while using personal vehicles will be required to attend the training every two years at a minimum.

Use of Pool Vehicles

- The City of Sedalia will maintain a limited number of pool vehicles that may be used by employees for corporate business travel.
- If possible, pool vehicles should be used in place of a personal vehicle for business trips.
- Automobiles should be reserved and are available on a first-come, first-serve basis. In case of conflicting requests, priority will be given to out-of-town trips.
- Pool vehicles must be used for city business. Pool vehicles should not be taken home at night unless authorized.
- Pool vehicles must be returned clean and with a full tank of fuel. When a vehicle reaches close to one-fourth of a tank, it must be refueled immediately.

Vehicle Inspections

A quarterly vehicle inspection will be completed by the fleet administrator to supplement the preventative maintenance activities and daily "walk-around" inspections.

Passengers and Authorized Drivers of City Vehicles

City vehicles must be driven only by authorized employees, or in case of repair testing, by a mechanic. Spouses, other family members or non-employees are *not* authorized to drive company vehicles. Passengers are generally limited to those individuals who need to ride in the vehicle to conduct city business such as other employees or vendor representatives. Drivers shall be trained in all specialized vehicle equipment such as lift devices, doors or alarms prior to being authorization to operate the vehicle.

Business Use of Rental Vehicles

When renting a car in lieu of using a company vehicle, all aspects of the city vehicle policy will apply.

Driver Safety Rules

The safety of our employees, whether they are driving a city vehicle or their own vehicle, is our utmost priority. All employees should adhere to the following safety rules.

- Each employee *must* have a valid state driver's license and is responsible for knowing and complying with all federal, state, county and local driving laws.
- The use of a city vehicle while under the influence of intoxicants and other drugs that could impair driving ability is forbidden. This behavior is sufficient cause for discipline, up to and including termination of employment.
- No driver shall operate a city vehicle when the ability to do so safely has been impaired by illness, fatigue, injury, consumption of alcohol or prescription medication.
- Passengers are limited to the number of seat belts available. Seat belts must be worn by all occupants of the vehicle.
- No hitchhikers are allowed to ride in city vehicles.
- Employees must perform a thorough "walk-around" inspection of the vehicle before starting or moving the vehicle. If the vehicle is not in a safe operating condition, it is the employee's responsibility to report the condition to the supervisor.
- Drivers are responsible for the security of company vehicles assigned to them. The vehicle engine must be shut off, ignition keys removed and vehicle doors locked whenever the vehicle is left unattended.
- Headlights shall be used one hour before sunset and one hour after sunrise, during inclement weather or at any time when a distance of 500 feet ahead of the vehicle cannot be clearly seen, and as otherwise required by law.
- Employees must report any accident in accordance with the "Accident Reporting Procedures".

Defensive Driving Guidelines

- Drivers are required to maintain a safe following distance at all times. Drivers should keep a three-second interval between their vehicle and the vehicle immediately ahead. During slippery road conditions, the following distance should be doubled or more.
- Drivers must yield the right of way at all traffic control signals, emergency vehicles and signs. Drivers should also be prepared to yield for safety's sake at any time. Pedestrians and bicycles in the roadway always have the right of way.

- Drivers must honor posted speed limits. In adverse driving conditions, reduce speed to a safe operating speed that is consistent with the conditions of the road, weather, lighting and volume of traffic. Tires can hydroplane on wet pavement at speeds as low as 40 mph.
- Turn signals must be used to show where you are heading while going into traffic and before every turn or lane change.
- When passing or changing lanes, view the entire vehicle in your rear view mirror before pulling back into that lane. When passing or merging into traffic, always look to your left and rear, allowing you to see vehicles that may be in your blind spot.
- Be alert of other vehicles, pedestrians and bicyclists when approaching intersections. Never speed through an intersection on a caution light. When the traffic light turns green, look both ways for oncoming traffic before proceeding.
- When waiting to make left turns, keep your wheels facing straight ahead. If rear-ended, you will not be pushed into the lane of oncoming traffic.
- When stopping behind another vehicle, leave enough space so you can see the rear wheels of the car in front. This allows room to go around the vehicle if necessary and may prevent you from being pushed into the car in front of you if you are rear-ended.
- Avoid backing where possible, but when necessary, keep the distance traveled to a minimum and be particularly careful. Check behind your vehicle before backing. Back to the driver's side. Do not back around a corner or into an area of no visibility.
- Drive courteously to avoid confrontations with other drivers.

Reporting Requirements

- If an employee's driver's license is revoked or suspended, the City must be notified as soon as possible, and immediately discontinue operation of the city vehicle. Failure to do so may result in disciplinary action, including termination of employment.
- All accidents in company-provided vehicles, regardless of severity, must be reported. Accidents that occur in personal vehicles while on city business must follow these same accident procedures for workers compensation purposes.
- Failing to stop after an accident and/or failure to report an accident may result in disciplinary action, up to and including termination of employment.
- Drivers must report all ticket violations received during the operation of a city vehicle or while driving a personal vehicle on company business within 72 hours.

Accident Reporting Procedures

In an attempt to minimize the results of an accident, the driver must prevent further damages or injuries, obtain all pertinent information and report information accurately.

- Call for medical aid if necessary.
- All accidents, regardless of severity, must be reported to the police.
- Record names and addresses of driver, witnesses and occupants of the other vehicles and any medical personnel who may arrive at the scene.
- Pertinent information to obtain includes: license number of other drivers; insurance company names and policy numbers of other vehicles; make, model and year of other vehicles; date and time of accident; and overall road and weather conditions.
- Do not discuss the accident with anyone at the scene except the police. Do not accept any responsibility for the accident. Don't argue with anyone.
- Provide the other party with your name, address, driver's license number and insurance information.
- Immediately report the accident to the department head, who will provide a copy of the accident report and/or written description of the accident to the fleet administrator.

AERIAL LIFTS POLICY

Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to job sites above ground: Extensible boom platforms, aerial ladders, articulating boom platforms and vertical towers.

Before Operating An Aerial Lift

- Check operating and emergency controls, safety devices (such as outriggers and guardrails), personal fall protection gear, wheels, tires and other items specified by the manufacturer.
- Look for possible leaks (air, hydraulic fluid and fuel-system) and loose or missing parts.
- Check where the lift will be used. Is it on a level surface that won't shift?
- Check the slope of the ground or floor. Do not work on steep slopes that exceed slope limits listed by the manufacturer.
- Look for hazards such as holes, drop-offs, bumps, debris, overhead power lines and other obstructions.
- Set outriggers, brakes, and wheel chocks, even if you're working on a level slope.
- Manufacturer's manuals should be provided for operations and maintenance mechanics.
- Operators and mechanics should be trained by a qualified person experienced with the aerial lift model.

Using An Aerial Lift

- Close lift platform chains or doors.
- Stand on the floor of the bucket or lift platform.
- Do not climb on or lean over guardrails.
- Do not exceed manufacturer's load-capacity limits, including the weight of such things as bucket liners and tools.
- If working near traffic, set up work-zone warnings like cones and signs.

To Prevent Electrocutions:

- Non-electrical employees must stay at least 10 feet away from overhead power lines.
- Electrical employees must de-energize/insulate power lines or use proper personal protective equipment and tools.
- Insulated buckets protect from electrocution due to electric current passing through you and the boom to ground. The buckets do not protect if there's another path to ground such as if you touch another wire.

To Prevent Falls:
To help keep employees inside guardrails or in buckets, a full-body harness or a positioning device on bucket trucks or boom-supported lifts will be used. A positioning device (belt) with a short lanyard can be used, if there is an anchorage inside the bucket.

To Prevent Tipovers
- Check the manufacturer's instructions.
- Do not drive with the lift platform elevated unless the manufacturer says that is acceptable.
- Do not exceed vertical or horizontal reach limits or the specified load-capacity of the lift.
- On an elevated scissor lift, avoid too much pushing or pulling.

Training
Training must include:
- Any electrical, fall and falling-object hazards.
- Procedures for dealing with hazards.
- How to operate the lift correctly including maximum intended load and load capacity. The user must show he or she knows how to use the lift.
- Manufacturer's requirements.
- If the hazards change, the type of aerial lift changes, or an employee is not operating a lift properly, employees must be retrained.

Maintenance and Inspections
De-energize and lockout/tagout aerial lifts before any maintenance or repairs. Each aerial lift must be inspected as the manufacturer requires, generally every three months or after 150 hours of use, whichever comes first. The owner of a lift must do a detailed annual inspection, as required by the manufacturer.

When Operating a Leased Lift
- Be sure the lift is properly inspected and serviced before rental.
- Obtain the operator and maintenance manuals and maintenance history.
- Operator controls should be easy to reach and properly marked.
- Aerial lift shall not be modified without written permission of the manufacturer.
- Aerial lifts shall be used only under conditions approved by the manufacturer.
- Proper personal fall protection shall be provided and used.

LIFTING DEVICES AND EXCAVATORS POLICY

Mechanical lifting devices such as forklifts, lifts, backhoes, loaders, cranes, excavators, etc. can create hazardous work environments. Most of these devices are power driven and are used in construction work and maintenance. These are usually devices that have articulating arms or lifts than can reach heights of over 10 ft.

Before Operating Any Lifting Device or Excavator

- Check operating and emergency controls, safety devices (such as arm restraints, and outriggers), wheels, tires and other items specified by the manufacturer.
- Look for possible leaks (air, hydraulic fluid and fuel-system) and loose or missing parts.
- Check where the device will be used. Is it on a level surface that won't shift?
- Check the slope of the ground or floor. Do not work on steep slopes that exceed slope limits listed by the manufacturer.
- Look for hazards such as holes, drop-offs, bumps, debris, overhead power lines and other obstructions.
- Set outriggers, brakes, and wheel chocks, even if you're working on a level slope.
- Make sure that all personnel are clear from the maximum area of the articulating arm or machine component.
- Make sure that operators and mechanics are sufficiently trained by a qualified person experienced with the type of machinery to be operated.

Using Lifting Devices and Excavators

- If working near traffic, set up work-zone warnings like cones and signs.
- Make sure that any safety devices are being used; i.e., harnesses, cages, etc.
- Make sure that all body parts are confined within the safe area of the equipment.
- If possible, use a spotter when operating near electrical lines or other objects that could create a safety problem.
- Do not exceed manufacturer's load-capacity limits, including the weight of any attachments that are being utilized or lifting heavy objects.

To Prevent Electrocutions:

- Non-electrical employees must stay at least 10 feet away from live or unknown overhead power lines. In the case of high voltage power lines, operators should use the following recommended table:

FPL Power Line Voltage	OSHA Minimum Approach Distance
0 - 69,000 volts	**10 feet**
115,000 – 138,000 volts	**11 feet**
230,000 volts	**13 feet**
500,000 volts	**18 feet**

Note: When uncertain of a power line's voltage, contact your immediate supervisor. If the power line has been insulated by the utility company, personnel should follow their recommend guidelines.

- Electrical employees are the only personnel authorized to de-energize/insulate power lines since they have the proper protective equipment and tools.
- Operators should ensure that if they are dragging with an articulating arm, that adequate clearances are available away from all power lines and other electrical sources.

To Prevent Tipovers

- Check the manufacturer's instructions.
- Do not drive with the articulating arm in an unlock position unless the manufacturer certifies that it is acceptable.
- Do not exceed vertical or horizontal reach limits or the specified load-capacity of the device.
- Make sure that all outriggers, blocks or wheel checks are properly set.
- Ensure that all lifting devices, or devices with articulating arms are properly set on surfaces that provide a good foundation and do not exceed the manufactures limits for horizontal stability.

Training

Training must include:

- Procedures for electrical or gas sources both in ground and above ground.

- How to operate the equipment correctly including maximum intended load and load capacity. This training should include; machinery check procedures, safety devices, standard operating guidelines and manufacturers limits. In addition, the operator must pass a practical competency test on the machine to be operated. This test should be given by a person who is already certified on the equipment.
- Manufacturer's requirements.
- Identification of hazards, site assessment, and city safety procedures.
- If a safety problem is observed, the operator shall be retrained on the correct procedures.

Maintenance and Inspections

The operator shall be responsible for any normal routine inspections of the device to be operated. This shall include all safety devices, hydraulic hoses, tires, outriggers, blocks and wheel chocks in addition to the overall condition of the equipment. If a problem is found that would affect the operation of the equipment, the operator shall immediately report the problem to their supervisor. The equipment should not be used until the maintenance department has corrected the problem or certified that it is safe for operation.

When Operating Leased Equipment

- Be sure the equipment is properly inspected and serviced before rental.
- Obtain the operator and maintenance manuals and maintenance history.
- Operator controls should be easy to reach and properly marked.
- Lifting devices and excavators shall not be modified without written permission of the manufacturer.
- All equipment shall be used only under conditions approved by the manufacturer and for its intended purpose.
- Use of all safety equipment provided with the equipment shall be used.

TRENCHING AND EXCAVATION

This program sets forth the practices required for trenches or excavations that will be entered by employees with a depth of four feet or greater along any portion of its length. All excavations or trenches four feet deep or greater shall be appropriately benched, shored or sloped according to the procedures and requirements set forth in this program. Excavations or trenches 20 feet deep or greater must have a protective system designed by a registered professional engineer.

Site Superintendent
The Site Superintendent has the primary responsibility for the implementation of the Trenching and Excavation program at their jobsite. The supervisor has ultimate responsibility for the safety of the employees and general public affected by the excavation. This includes evaluation of the work to be performed, determination of the means of protection that will be used and adherence to the provisions of this program as appropriate. The superintendent must ensure daily, or more often as required, that site conditions are safe for employees to work in trenches/excavations.

Competent Person
The competent person is a person capable of identifying existing and potential hazards and who has authorization to take prompt corrective measures to eliminate these hazards. The competent person is to be clearly designated and be placed in charge of all trenching and excavations performed at the construction site. Underground utilities must be located and marked before add trenching or excavation begins.

Employees
Employees have the primary responsibility for working in accordance with the provisions of this program. No employee should enter an excavation meeting the scope of this program until authorized by the competent person. Employees are not allowed in the excavation while heavy equipment is digging.

Pre-excavation Digging
The location of sewers, telephone, fuel, electric, water lines, or any other underground installations that may be encountered during excavation work must be determined and marked prior to opening an excavation. If it is not possible to establish the exact location of these installations, the work may proceed with caution if detection equipment or other safe and acceptable means are used to locate the utility.

Trenching or excavations must not endanger the underground installations or the employees engaged in the work. Utilities left in place should be protected by barricades, shoring, suspension or other means as necessary to protect employees.

Protection of the Public
Trenching or excavations must be isolated from public access by a substantial physical barrier. Barricades, lighting and posting shall be installed as appropriate prior to the start of excavation operations. All temporary excavations of this type shall be backfilled as soon as possible. If left open overnight, sheeting and marking should be considered.

Guardrails, fences or barricades should be installed around excavations adjacent to walkways, roads, streets, paths or other traffic areas. All protection, guarding and signage should meet the requirements of the municipal, State or Federal agency responsible for the roadway. Warning lights or other illumination shall be used as necessary for the safety of the public at night. Wells, holes, pits and similar excavations must be effectively barricaded or covered and posted. Walkways or bridges used by the general public to cross excavations must be equipped with standard guardrails.

Surface Encumbrances
All equipment, materials, supplies, buildings, roadways, trees, utility vaults, boulders, etc. that could present a hazard to employees working in the excavation must be removed or supported as necessary to protect employees.

Protective Systems
Benching, sloping, shoring, under the base of the footing of a foundation or wall require a support system designed by a registered professional engineer. Sidewalks, pavement, utility vaults or other similar structures shall not be undermined unless a support system or another method of protection is provided to protect employees from their possible collapse. Sloping or benching is often the preferred method of protection. However, shoring or shielding is used when the location or depth makes sloping to the allowable angle impractical.

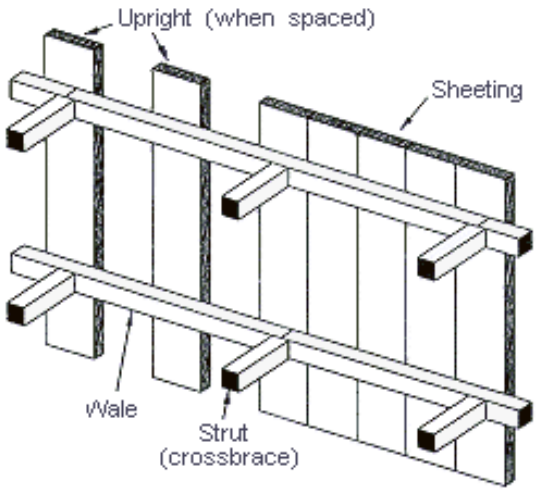
Sloping
Maximum allowable slopes for excavations less than 20 feet is 34°.

SHORING TYPES

Shoring is the provision of a support system for trench faces used to prevent movement of soil, underground utilities, roadways and foundations. Shoring or shielding is used when the location or depth of the cut makes sloping back to the maximum allowable slope impractical. Shoring systems consist of posts, wales, struts and sheeting. There are two basic types of shoring, timber and aluminum hydraulic.

Timber Shoring

The soil type must first be determined. There are six tables of information, two for each soil type. Using the appropriate soil type table, the selection of the size and spacing of the members is then made. The selection of the timber members is based on the depth and width of the trench where the members are to be installed and, in most instances, the selection is also based on the horizontal spacing of the crossbraces. Instances where a choice of horizontal spacing of crossbracing is available, the horizontal spacing of the crossbraces must be chosen by the user before the size of any member can be determined. When the soil type, the width and depth of the trench, and the horizontal spacing of the crossbraces are known, the size and vertical spacing of the crossbraces are known, the size and vertical spacing of the crossbraces, the size and vertical spacing of the wales, and the size and horizontal spacing of the uprights can be read from the appropriate table.



Hydraulic Shoring

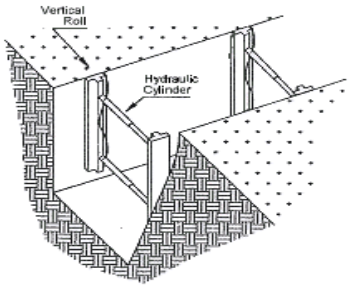
Hydraulic shoring is a prefabricated strut and/or wale system manufactured of aluminum or steel. Hydraulic shoring provides a critical safety advantage over timber shoring because employees do not have to enter the trench to install or remove hydraulic shoring. Other advantages of most hydraulic systems are that they:

- are light enough to be installed by one employee;
- are gauge-regulated to ensure even distribution of pressure along the trench line;
- can have their trench faces "preloaded" to use the soil's natural cohesion to prevent movement
- can be adapted easily to various trench depths and widths.

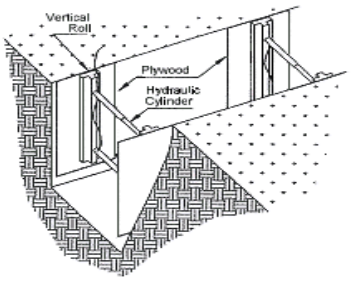
All shoring should be installed from the top down and removed from the bottom up. Hydraulic shoring should be checked at least once per shift for leaking hoses and/or cylinders, broken connections, cracked nipples, bent bases and any other damaged or defective parts.

Shoring Variations

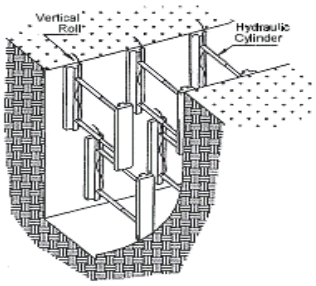
Typical Aluminum Hydraulic Shoring Installations



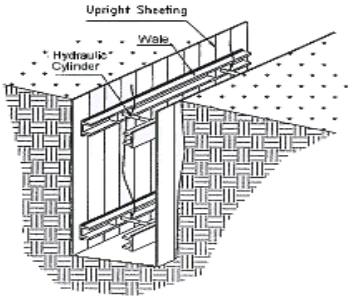
Vertical Aluminum Hydraulic Shoring (Spot Bracing)



Vertical Aluminum Hydraulic Shoring (With Plywood)



Vertical Aluminum Hydraulic Shoring (Stacked)



Aluminum Hydraulic Shoring Waler System (Typical)

Pneumatic Shoring

Pneumatic shoring works in a manner similar to hydraulic shoring. The primary difference is that pneumatic shoring uses air pressure in place of hydraulic pressure. A disadvantage to the use of pneumatic shoring is that an air compressor must be on site.

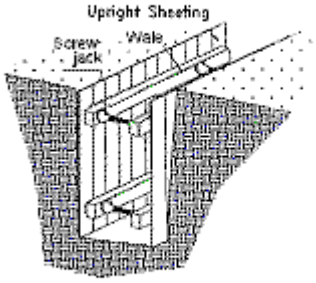
Screw Jacks—differ from hydraulic and pneumatic systems in that the struts of a screw jack system must be adjusted manually. This creates a hazard because the worker is required to be in the trench in order to adjust the strut. In addition, uniform "preloading" cannot be achieved with screw jacks, and their weight creates handling difficulties.

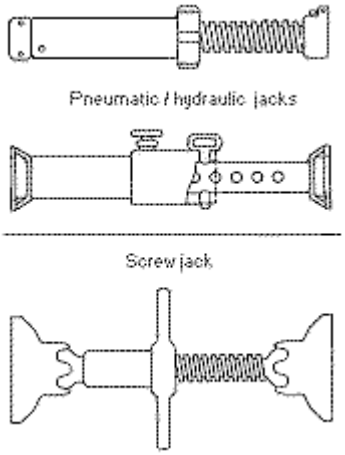
Single-Cylinder Hydraulic Shores—generally used in a water system, as an assist to timber shoring systems, and in shallow trenches where face stability is required.

Underpinning—involves stabilizing adjacent structures, foundations, and other intrusions that may have an impact on the excavation. As the term indicates, underpinning is a procedure in which the

foundation is physically reinforced. Underpinning should be conducted only under the direction and with the approval of a registered professional engineer.

Shoring Variations



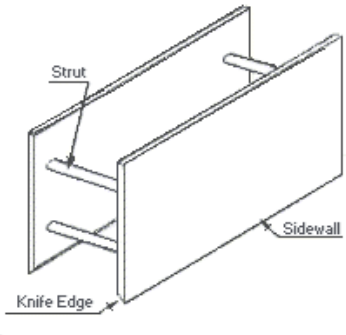


Shielding Types

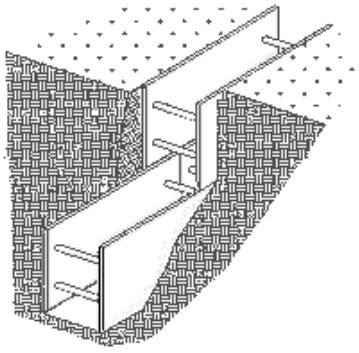
Trench Boxes

Trench boxes are different from shoring because, instead of shoring up or otherwise supporting the trench face, they are intended primarily to protect workers from cave-ins and similar incidents. The excavated area between the outside of the trench box and the face of the trench should be as small as possible. The space between the trench boxes and the excavation side are backfilled to prevent lateral movement of the box. Shields may not be subjected to loads exceeding those the system was designed to withstand.

TRENCH SHIELD



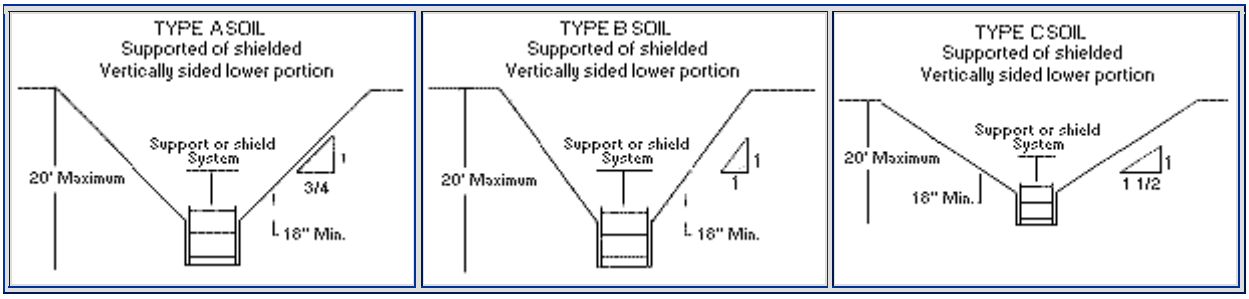
TRENCH SHIELD, STACKED



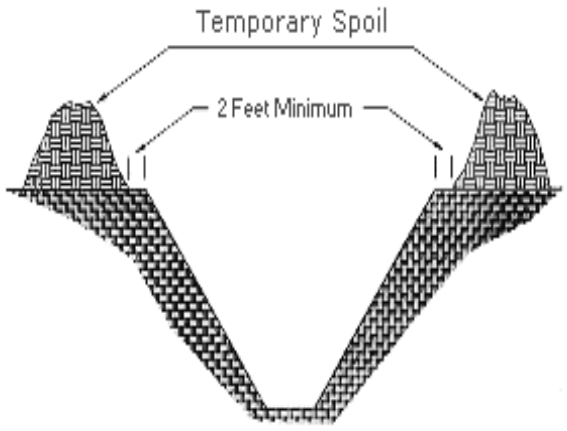
Combined Use
Trench boxes are generally used in open areas, but they also may be used in combination with sloping and benching. The box should extend at least 18 inches (0.45 m) above the surrounding area if there is sloping toward excavation. This can be accomplished by providing a benched area adjacent to the box.

Earth excavation to a depth of two feet (0.61 m) below the shield is permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of possible loss of soil from behind or below the bottom of the support system. Conditions of this type require observation on the effects of bulging, heaving and boiling as well as surcharging, vibration, adjacent structures, etc., on excavating below the bottom of a shield. Careful visual inspection of the conditions mentioned above is the primary and most prudent approach to hazard identification and control.

Slope And Shield Configurations



Spoil Protection
Temporary Spoil—must be placed no closer than two feet (0.61 m) from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. This distance should not be measured from the crown of the spoil deposit. Spoil should be placed so that it channels rainwater and other runoff water away from the excavation. Spoil should be placed so that it cannot accidentally run, slide, or fall back into the excavation.



Temporary Spoil

Permanent Spoil—should be placed at some distance from the excavation. Permanent spoil is often created where underpasses are built or utilities are buried. The improper placement of permanent spoil, i.e. insufficient distance from the working excavation, can cause an excavation to be out of compliance with the horizontal-to-vertical ratio requirement for a particular excavation. This can usually be determined through visual observation. Permanent spoil can change undisturbed soil to disturbed soil and dramatically alter slope requirements.

Safety Practices

Surface Crossing of Trenches—Surface crossing of trenches should be discouraged. However, if trenches must be crossed, such crossings are permitted only under the following conditions:

- Vehicle crossings must be designed by and installed under the supervision of a registered professional engineer.
- Walkways or bridges must be provided for foot traffic. These structures shall:
    - have a safety factor of four;
    - have a minimum clear width of 20 inches (0.51 m);
    - be fitted with standard rails;
    - extend a minimum of 24 inches (.61 m) past the surface edge of the trench.

Access and Egress—Access to and exit from the trench require the following:

- Trenches four feet or more in depth should be provided with a fixed means of egress, ramps or ladders.
- Ramps should be solely used by employees for access and exit designed by competent person; secured against displacement; sound, free from trip hazards and slip-resistant.
- Spacing between ladders or ramps must be such that an employee will not have to travel more than 25 feet laterally to the nearest means of egress.
- Ladders will be tied, blocked or otherwise secured in place. Ladders will extend a minimum of 36 inches (0.9 m) above the landing.
- Metal ladders should be used with caution, particularly when electric utilities are present.

Exposure to Falling Loads—Employees must be protected from loads or objects falling from lifting or digging equipment. Procedures designed to ensure their protection include:

- Employees are not permitted to work under raised loads.
- Employees are required to stand away from equipment that is being loaded or unloaded.
- Equipment operators or truck drivers may stay in their equipment during loading and unloading if the equipment is properly equipped with a cab shield or adequate canopy.

Warning Systems for Mobile Equipment—The following steps should be taken to prevent vehicles from accidentally falling into the trench:

- Barricades must be installed where necessary.
- Where an operator's view of the edge of an excavation is obstructed, a warning system, such as hand or mechanical signals must be used.
- Stop logs must be installed if there is a danger of vehicles falling into the trench.
- Soil should be graded away from the excavation; this will assist in vehicle control and channeling of run-off water.

Hazardous Atmospheres and Confined Spaces—Employees shall not be permitted to work in hazardous and/or toxic atmospheres. Such atmospheres include those with:

- Less than 19.5 percent or more than 23.5 percent oxygen;
- A combustible gas concentration greater than 20 percent of the lower flammable limit; and
- Concentrations of hazardous substances that exceed those specified in the *Threshold Limit Values for Airborne Contaminants* established by the ACGIH (American Conference of Governmental Industrial Hygienists).

Some trenches qualify as confined spaces. When this occurs, compliance with the Confined Space Program and company procedures is required.

Hazardous conditions might exist in a trench when excavating near a leaking utility pipe or underground storage tank. Geological conditions also can create hazardous conditions. Consider the following prior to entry to test for atmospheric contaminants where hazardous conditions could reasonably be expected:

- Testing should be conducted before employees enter the trench and should be done regularly to ensure that the trench remains safe.

- The frequency of testing should be increased if equipment is operating in the trench.
- Testing frequency should also be increased if welding, cutting or burning is done in the trench.

Employees required to wear respiratory protection must be trained, fit-tested and enrolled in the company's Respiratory Protection Program.

Emergency Rescue Equipment—Emergency rescue equipment is required when a hazardous atmosphere exists or can reasonably be expected to exist. Requirements are as follows:

- Respirators must be of the type suitable for the exposure. Employees must be trained in their use and a respirator program must be instituted.
- Attended (at all times) lifelines must be provided when employees enter bell-bottom pier holes, deep confined spaces, or other similar hazards.
- Employees who enter confined spaces must be trained.

Emergency Response—Emergency response for all excavations should be preplanned. A phone call should be made prior to the excavation to determine who would perform a trench collapse rescue. Also determine what equipment, if any, is needed at the site for the rescue team. Larger local fire departments will usually bring their own equipment. A rural department might not be as well equipped or trained.

Standing Water—Methods for controlling standing water and water accumulation must be provided and should consist of the following if employees are permitted to work in the excavation:

- Use of special support or shield systems approved by a registered professional engineer.
- Water removal equipment, i.e. well pointing, used and monitored by a competent person.
- Safety harnesses and lifelines used in conformance with 29 CFR 1926.104.
- Surface water diverted away from the trench.
- Employees removed from the trench during rainstorms.
- Trenches carefully inspected by a competent person after each rain and before employees are permitted to re-enter the trench.

Inspections

The competent person is required to conduct inspections:

- Daily and before the start of each shift by using (company's name here) "Daily Trenching Inspection Log" found at the end of this program.
- As dictated by the work being performed in the trench.
- After every rainstorm.
- After other events that could increase hazards, such as snowstorm, windstorm, thaw, earthquake, dramatic change in weather, etc.
- When fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom or other similar conditions occur.
- When there is a change in the size, location or placement of the spoil pile.
- When there is any indication of change or movement in adjacent structures.

CONFINED SPACE ENTRY PROGRAM

Table of Contents

1.0 Purpose

The purpose of the City of Sedalia Confined Space program is to enable safe employee entry of confined spaces while complying with OSHA regulations found at (29 CFR 1910.146). Minimum requirements for space preparation, air monitoring, equipment, and training necessary for confined space entry are detailed here. Poorly planned and executed entries into confined spaces could result in serious injury or death due to the decreased room for error within confined spaces. Properly planned confined space entries can be completed without entrant injuries which eliminates the risks involved with rescuing incapacitated entrants.

2.0 Applicability

The requirements of this program apply to all entries into confined spaces a defined in this program. Anticipated confined spaces include meter and valve vaults, water storage tanks, chemical and sewage storage tanks, sewer manholes, large diameter sewers, dry pit underground pumping stations, and submersible types of wastewater pumping stations which have hazard assessments and rescue pre-plans on file. Other confined spaces that may arise in the future will be entered only after all requirements of this program have been met and authorized entrants, attendants, supervisors, and rescue team (where required) have been trained on that specific space or a similar space.

3.0 Responsibilities

The Confined Space Program development and maintenance is the responsibility of the Public Works Director. The Public Works Director will conduct an annual review of entry permits and immediate review of the program following any incidents including procedure or equipment failures, personnel injuries, or deaths. Performance of the tasks stated above may be delegated to a person competent in confined space regulatory requirements.

The Water Pollution Control Superintendent is responsible for implementation of the confined Space Program. The Water Pollution Control Superintendent collects expired entry permits and maintains them in a file for the purpose of the annual review.

Supervisory personnel are responsible for assigning work that will or may require entry into confined spaces to employees who have been properly

trained and equipped as described in this confined space program. Supervisors are responsible for providing adequate manpower and equipment to perform safe confined space entries. Confined space entry supervisors are not required to be supervisory personnel in that other employees report to them on a daily basis.

City of Sedalia field employees are directly responsible for adhering to the requirements of this confined space program and reporting any difficulties, mishaps, near misses, or injuries during confined space entries. Any comments or suggestions to improve the safety of entries should be expressed to an immediate supervisor to be considered for future updating into this Confined Space Program.

4.0 Control Measures

All hazards that could be reasonably expected during an entry must be addressed prior to deeming conditions acceptable for entry.

a) For those confined spaces utilized for storage of chemicals, as much of the chemical as possible must be removed prior to entry. Chemical storage tanks are to be drained and rinsed three times (triple rinse) prior to entry.
b) All confined spaces must be isolated from uncontrolled energy sources through the use of lockout/tagout of electrical parts and mechanical equipment inside the space.
c) Purging and ventilating a confined space must be performed to help remove atmospheric hazards such as flammable gases and vapors or toxic materials that are immediately dangerous to life and health (IDLH).
d) Unauthorized entry into a confined space through an entryway opened by trained and authorized personnel must be prevented through use of barriers and/or obvious signage. Each confined space must have a "Danger-Confined Space, Do Not Enter without permit" or similar sign placed on or near the entryway.
e) Even though conditions prior to entry may be acceptable, there is always the possibility that conditions could change. Therefore, it is necessary to ensure that acceptable entry conditions are maintained throughout the entry. Continuous testing of the atmosphere within the space and inspection to ensure that an atmospheric condition(s) of the confined space is not compromised is required.

5.0 Equipment

No Permit-Required entries will be attempted without the following equipment:

a) One (1) – Self-retracting vertical lifeline with hand crank for retrieval per entrant
b) One (1) – Full body harness for each authorized entrant, attendant, supervisor, and rescue team member (Note: the attendant and supervisor may be the same person)
c) One (1) – Ventilation kit including electric or gas blower, optional saddle vent for placement in manholes, and 25 feet or more of flexible duct
d) One (1) – Multi-gas meter with pump capable of pulling air through 20 feet of tubing. Multi-gas meters must measure oxygen, lower explosive limit, hydrogen sulfide and carbon monoxide gases which may be present in the atmosphere of the confined space to be entered without entering the confined space until after atmospheric conditions are known and determined safe for entry
e) Respiratory protection as outlined in the Hazard Assessment for confined space to be entered
f) Ladders if any as specified in Hazard Assessment
g) First aid kit
h) A cell phone (working and usable at the confined space site) to be kept outside of the space by the attendant
i) Optional equipment: Intrinsically safe (Class I, Division I) lighting, two-way radios/ walkie-talkies

6.0 Atmospheric Testing

Atmospheric testing of oxygen level, percent Lower Explosive Limit (LEL), and carbon monoxide is required prior to entry and continuously during entry of any confined space encountered by City of Sedalia employees. The presence of hydrogen sulfide, carbon monoxide, and methane may be likely within the various types of confined spaces entered by City employees. Proper ventilation of the space will help minimize any atmospheric hazards. It is important to note that carbon monoxide and methane are lighter than air, thus will tend to be at the top of the confined space. Hydrogen sulfide is heavier than air, thus will tend to collect at the bottom of the confined space.

a) Oxygen (O_2) – Always test/observe oxygen levels first because abnormal oxygen reading will alter readings for percent LEL. The typical ambient atmospheric oxygen level is 20.9%. Acceptable entry conditions must have oxygen levels between 19.5% and 23.5%. Low levels of oxygen cause sluggishness, disorientation, unconsciousness, and eventual death depending on the actual oxygen level. Elevated oxygen levels do not present a health effect but can lead to explosive conditions or increase the intensity of a fire.

b) Percent LEL- the Lower Explosive Limit reading must be less than 10% of the LEL. Meters are typically calibrated to a mixture that represents 10% LEL for methane. Barring entry at only 10% LEL is a safety margin, which compensates for the likelihood that real-world atmospheres can contain explosive gases other than methane.

c) Hydrogen Sulfide (H_2S) – Test for H_2S after Oxygen levels and the LEL has been found to be within allowable limits. The H_2S level must be below 10 parts per million (ppm) for acceptable entry conditions. Hydrogen Sulfide is a highly toxic, flammable, colorless gas that often smells of rotten eggs. Exposure to lower concentrations of roughly 15 ppm can result in eye irritation, a sore throat and cough, and shortness of breath. H_2S levels over 100 ppm or more (IDLH levels) cause fluid in the lungs leading to unconsciousness, then eventually death.

d) Carbon monoxide (CO) – Test for CO after Oxygen, LEL, and Hydrogen Sulfide are found to be within allowable limits. The CO level must be below 25 parts per million (ppm) for acceptable entry conditions. Carbon monoxide is a colorless and odorless gas often created by decomposition or incomplete combustion. Sharp headaches and disorientation begin at roughly 200 ppm CO exposure, leading to unconsciousness, and eventual death at approximately 1200 ppm.

e) Other toxic gases- Most four-gas meters monitor the previously mentioned contaminants. Some meters add the ability to measure volatile organics at part per million (ppm) levels which is useful in determining the required level of respiratory protection in spaces containing chemicals such as gasoline or other solvents.

Meter readings are taken every 4 feet in height to account for multiple gas densities and possible differences in concentrations. Keep the tubing inlet at one height approximately 2-5 minutes to allow air from that particular height

to reach the meter through the length of tubing and to give the meter time to respond.

Wearable multi-gas meters may be worn by the authorized entrant if specified within the hazard Assessment for the particular confined space and are required any time an entrant must travel over 20 feet from the point where the attendant is performing air monitoring.

7.0 Authorized Entrants

Authorized entrants have the right to observe all space preparations and air monitoring prior to entry, may sign off on the atmospheric testing results on the permit, and are responsible for the following:

a) Follow all the safety procedures related to the task(s) to be performed within the confined space.
b) Egress the confined space, terminate the entry and report the situation to supervision immediately if an unsafe condition arises during an entry.
c) Maintain safe working conditions while the work is performed in the confined space.
d) Complete the confined space permits entrant section and initial that each required item is verified as complete.
e) Communicate regularly with the attendant so the attendant can keep track of the entrant's condition.

8.0 Attendants

During entry, at least one attendant must be stationed outside the confined space at all times in order to monitor the condition of the entrant. An attendant cannot enter the confined space itself or leave the area without another attendant taking over for them.

Duties:

a) Know the hazards that may be faced during entry, including the possible effects or symptoms of chemical exposure.
b) Maintain an accurate count of the number of entrants to the space and ensure that only authorized entrants are allowed.
c) Remain outside the confined space during entry until relieved by another attendant.
d) Maintain communication with entrants to monitor their status and be able to alert entrants to the need to evacuate the space.

e) Monitor activities inside and outside the space to determine if it is safe for the entrants to remain in the space and order evacuation if a prohibited condition occurs, behavioral effects of exposure are observed, or the attendant cannot safely and effectively perform all their duties.
f) Summon rescue and other emergency services as soon as it is determined that entrants may need assistance to escape from the confined space.

9.0 Entry Supervisor

Entry supervisors have the following responsibilities and may serve as entry attendant as well as long as all tasks can be performed competently.

a) Know the hazards that may be faced during entry, including the possible effects or symptoms of chemical exposure.
b) Initiate the confined space entry permit.
c) Verify that all atmospheric tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place prior to approving the permit and allowing entry.
d) Before an entrant enters the confined space, the entry supervisor shall determine the availability and capabilities of a rescue team and if a rescue team should be on standby for a particular entry.
e) Ensure there is no entry into an IDLH atmosphere. If a rescue is eminent, a rescue team must be first be **on site** if an IDLH confined space must absolutely be entered to effect a rescue attempt.
f) Determine the need for any additional equipment to perform the entry safely.
g) Terminate and cancel the permit if any condition prohibited by the entry permit occurs.

10.0 Training

Confined space training is required for all entrants, attendants, supervisors, and rescue team members so they can acquire the understanding, knowledge, and skills needed to safely complete their specific responsibilities in an entry.

a) Each affected employee must be trained prior to being assigned any confined space entry duties. Training shall include working knowledge of the types, weights and layering of various gases which may be found in confined spaces.

b) Training must include all portions of the City of Sedalia Confined Space program as well as hands on training with the equipment to be used during the expected confined space entries.
c) Training sessions will cover all responsibilities of the entrant, attendant, and supervisor, although each individual's authorized level of involvement will be determined by management.
d) Establishment of in house rescue teams are not anticipated at this time due to the general prohibition of entering IDLH confined space atmospheres and the availability of local emergency department personnel.
e) New training will be necessary if new hazards are present that were not included within the original or refresher training sessions.
f) Additional training may be required if management has reason to believe that the employee does not know or understand safe entry procedures.
g) Successfully completed training is noted by adequate training documentation of the training provider/ instructor, training date, name of employee, and passing score on topic exam.

11.0 Rescue Services

Outside rescue teams will be used if internal rescue of entrants is necessary. The Hazard Assessment and Rescue Plan must state local first responders will be called upon to perform an internal rescue if such a rescue becomes necessary. Every attempt will be made to limit the need for internal rescue; therefore equipment to allow the attendant and/or entry supervisor to retrieve and injured entrant from outside the space is required.

a) Outside rescue teams must be informed of the hazards that may be encountered when performing a rescue on the particular space.
b) Rescue teams are given access to the confined spaces in order to develop appropriate rescue plans or practice rescue operations as those rescue teams may desire.
c) If IDLH conditions exist, rescue teams are to be notified in advance of an entry and the entry supervisor must determine if the rescue team should be assembled beside the confined space or will mobilize to the confined space only after a call for help is sent.

12.0 Non-Permit Required Confined Spaces

Nearly all confined space entries will be Permit-Required. Non-permit entries are allowed only under the following conditions as per 29 CFR 1910.146 (c) (5) and (c) (7):

a) The only hazard within the space is a potential hazardous atmosphere
b) A continuous forced-air ventilation system has been installed within the space
c) Acceptable air monitoring results for the spaces are documented
d) The City has certified the space as non-permit required (within the past year) and has allowed authorized entrants to review that certification prior to entry.

13.0 Entry Permit System

The entry supervisor initiates the completion of a confined space permit during which all hazards within the space are indentified and the appropriate control measures are described. A blank sample permit is shown in the Appendix. If a confined space is located on a customer property and the customer requires their permit filled out, both the customer's and City's permit must be completed in order to decrease the chance that a step is inadvertently missed or left out due to unfamiliarity with the customer permit.

The permit must include the following:

a) Description of the space (sewer at Main & Olive, manhole #1, etc.)
b) Purpose of the entry, work to be performed
c) Date and authorized duration of the entry permit (maximum of 8 hours)
d) Name(s) of the authorized entrants into the space
e) Name(s) of attendants
f) Name of the entry supervisor
g) Recognized hazards of the confined space
h) Isolation and control measures implemented prior to entry
i) Description of the air monitoring meter (Make and model)
j) Pre-entry (initial) atmospheric test results with the testers initials and note if applicable to all vertical heights within the confined space
k) Continuous or periodic atmospheric test results with the tester's initials and time of test (entry + 5 minutes, + 10 minutes, etc.)
l) Description of rescue or emergency services that can be summoned and the means for summoning those services
m) Means of communication between the entrant and attendant
n) Any other information either currently or for permit review in the future
o) Reference to any other permits related to the work (hot work, general work permit)

p) Entry supervisor signature, date, total elapsed time of entry, and time of permit termination.

14.0 Contractor Coordination

Clearly defined roles for confined space entries are required due to the risks of poor communication between different companies where confined space entries are concerned. Should the City need to allow workers from other companies inside confined spaces controlled by the City, the following will apply:

a) The number or entrants and the number of companies involved at any one time will be kept to a minimum.
b) Hazards of the particular space must be communicated in advance to the contractor and this program must be provided in advance to the contractor.
c) The Contractor must provide the City a copy of their Confined Space Program.
d) Contractor workers must have and submit proof of documentation of confined space training for the work each individual will be performing. The training must have been completed within the past 12 months and have covered similar entries as to the entry being planned.
e) The Contractor will be required to complete their own entry permit and comply with all applicable portions of the Contractor's Confined Space Program.
f) The Contractor is responsible for providing means for an external rescue as well as coordinating with a Rescue Team which may or may not be onsite depending on the individual confined space.
g) Copies of Entry Permits must be provided to the City.
h) Any incidents, injuries, or mishaps must be reported to the City.

15.0 Program Review and Updates

The Public Works Director will conduct an annual review of entry permits and immediate review of the program following any incidents including equipment failures, personnel injuries, or deaths. Performance of these tasks may be delegated a person competent in confined space regulatory requirements.

Significant changes to the confined space program will require retraining of all affected employees. Minor changes may be disseminated through memos

provided to affected employees with a sign-off stating that they have read and understood the changes.

16.0 Definitions

Attendant: An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in this Confined Space program.

Confined Space: A space that is (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and (2) Has limited or restricted means for entry or exit (for example, tanks, tanker trucks, pipes, manholes, wet wells, silos, storage bins and tanks, hoppers, meter and valve vaults, and pits); and (3) Is not designed for continuous employee occupancy.

Entrant (Authorized Entrant): An employee who has received confined space entrant training and is authorized by the City Entry Supervisor to enter a confined space.

Entry: Entry to a confined space occurs as any part of the body breaks the plane of the opening(s) of a confined space and includes ensuing work activities in the space.

Entry Permit: The completed form documenting all conditions of the confined space thereby helping to ensure all hazards are adequately controlled prior to entry into a permit-required confined space.

Entry Supervisor: The person responsible for determining if acceptable entry conditions are present within a permit-required confined space prior to allowing entry by an authorized entrant. The entry supervisor also oversees entry operations and terminates the entry.

External Rescue: Removal of an injured entrant from a confined space performed without any personnel (including the attendant, supervisor, or rescue team) entering the confined space. Equipment designed for external rescue includes hand-cranked winches or lifelines connected to full body harnesses or in some cases wristlets.

Hazardous Atmosphere: An atmosphere that could cause death, incapacitation, impairment of the ability to self-rescue, injury, or acute illness from one of more of the following causes: 1) Flammable gas, vapor,

mist, or dust in excess of 10% of the lower explosive limit, 2) Oxygen concentrations below 19.5% or above 23.5%, or 3) airborne concentration of any substance in excess of the applicable permissible exposure limit according to OSHA General Industry subpart G "Occupational Health and Environmental Control" or subpart Z "Toxic and Hazardous Substances".

IDLH (Immediately Dangerous to Life and Health): Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a confined space.

Internal Rescue: The active rescue of an incapacitated confined space entrant by a Rescue Team. The attendant and supervisor are not authorized to attempt an internal rescue unless they are part of the Rescue Team and there are replacement for the attendant and supervisor.

OSHA (Occupational Safety and Health Administration: Federal governmental agency responsible for creating and enforcing safety and health regulations for most private and public sector employees. Regulations can be accessed from the OSHA website www.osha.gov. Day to day work by City employees and their designated contractor falls under 29 Code of Federal Regulations Part 1910 (General Industry). Part 1926 (Construction) contains regulation, which are applicable during installation of systems at a customer facility.

Permit Required Confined Space: OSHA definition- A confined space as defined above which has one or more of the following characterizes: (1) Contains or has a potential to contain a hazardous atmosphere; (2) Contains a material that has the potential for engulfing an entrant; (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) Contains any other recognized serious safety or health hazard.

Permit System: The City's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Rescue Team: Trained personnel (usually trained fire department and rescue personnel) designated to rescue entrants from confined spaces through internal access to the confined space by any means if necessary.

Members of the rescue team must have hands-on practice with confined spaces of the same or similar complexity.

Retrieval System: A system designed to allow an external rescue including equipment such as hand-cranked winches or lifelines connected to full body harnesses or in some cases wristlets.

Testing: The process of identifying and evaluating hazard that may confront the entrant and monitoring any increased hazard levels during the entry.

WELDING POLICY

Welding occurs as a cutting, finishing and binding process of many metals. There are several hazards associated with this exposure such as fire, respiration of hazardous materials, ultra violet light, flying particles and failure of pressurized gas cylinders. The object being welded, location of welding operations and welding sticks are also hazard factors. Trained personnel shall perform welding operations. Welding in a Confined Space will require a Confined Space permit with all Confined Space Entry safety procedures enforced.

Responsibilities

Department Head
Responsible for ensuring the welding safety program is implemented by supervisors and all required equipment is provided to the employees.

Supervisor
Responsible for ensuring employees are trained and operate safe welding procedures. Supervisors will enforce use of personal protective equipment. Additionally, the supervisor will recognize welding hazards and take corrective actions if needed.

Employee
Responsible for following the welding safety procedures and notifying the supervisor of welding hazards and unsafe conditions. The employee will report any incidents that might or did result in an accident.

Compressed Gas Cylinders Safety
Employees who operate, move and store gas cylinders shall perform the following operations to ensure safe use of pressurized cylinders:

- Valve protection caps shall be in place and secured.
- When cylinders are hoisted, they shall be secured on a cradle, slingboard or pallet. They shall not be hoisted or transported by means of magnets or choker slings.
- Cylinders shall be moved by tilting and rolling on the bottom edges.
- Cylinders transported by powered vehicles shall be secured in a vertical position.
- Valve protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve protection caps to pry cylinders loose when frozen. Warm, not

boiling, water shall be used to thaw frozen cylinders caps or knobs loose.

- Regulators shall be removed and valve protection caps put in place before cylinders are moved.
- A suitable cylinder truck, chain or other steadying device shall be used to keep cylinders from being knocked over while in use.
- Cylinder valves shall be closed when not in use.
- Compressed gas cylinders shall be secured in an upright position at all times.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) by a minimum distance of 20 feet or by a noncombustible barrier at least five feet high having a fire-resistance rating of at least one-half hour.
- Inside buildings, cylinders shall be stored in a well-protected, well-ventilated, dry location at least 20 feet from highly combustible materials such as oil or gasoline. Cylinders should be stored in definitely assigned places away from elevators, stairs or gangways.

Placing Cylinders

- Cylinders shall be kept away from the actual welding or cutting operations. If impractical, fire resistant shields shall be provided.
- Cylinders shall be placed where they cannot become part of an electrical circuit. Electrodes shall not be struck against a cylinder to strike an arc.
- Fuel gas cylinders shall be placed with valve end up whenever they are in use. They shall not be placed in a location where they would be subject to open flame, hot metal or other sources of artificial heat.
- Cylinders containing oxygen, acetylene or other fuel gas shall not be taken into confined spaces.

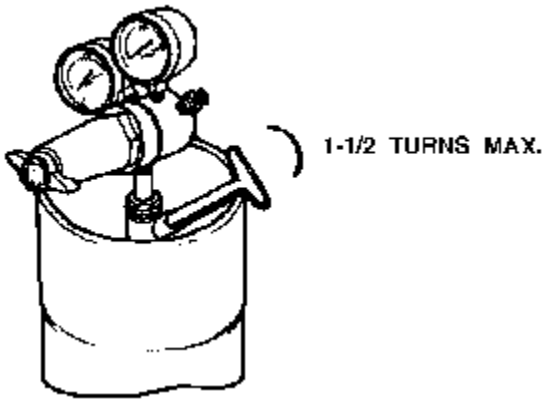
Treatment of Cylinders

- Cylinders shall not be used as rollers or supports.
- No person other than the gas supplier shall attempt to mix gases in a cylinder. No employee shall refill a cylinder. No employee shall use a cylinder's contents for purposes other than those intended by the supplier. All cylinders used shall meet the Department of Transportation requirements.
- No damaged or defective cylinder shall be used.

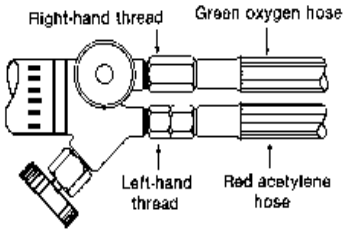
Use of Fuel Gas

Supervisors shall thoroughly instruct employees in the safe use of fuel gas, as follows:

- A regulator with shutoff valves shall be attached to the cylinder's valve or manifold that dispenses fuel gas through torches or other devices.
- Before a regulator is connected to a cylinder valve, the valve shall be opened slightly and closed immediately. This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator. The employee cracking the valve shall stand to the side of the outlet, not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame or other possible sources of ignition.



- The cylinder valve shall always be opened slowly to prevent damage to the regulator. Quick closing valves shall not be opened more than one turn. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow can be shut off quickly in case of an emergency. In the case of manifolded or coupled cylinders, at least one such wrench shall be available for immediate use. Nothing shall be placed on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with the quick closing of the valve.
- Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.
- If a leak is detected around the valve stem at opening, the valve shall be closed and gland nut tightened. If this action does not stop the leak, the cylinder shall not be used, properly tagged and removed from the work area. If the fuel gas leaks from the cylinder valve, rather than from the valve stem, and the gas cannot be shut off, the cylinder shall be properly tagged and removed from the work area. If a regulator attached to a cylinder valve will effectively stop a leak through the valve seat, the cylinder may remain in the work area but not used.



- If a leak should develop at a fuse plug or other safety device, the cylinder shall be removed from the work area.

Hose

- Fuel gas and oxygen hose shall be easily distinguishable from each other. The contrast may be made by different colors or by surface characteristics readily distinguishable by the sense of touch. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.
- When parallel sections of oxygen and fuel gas hose are taped together, not more than four inches out of 12 inches shall be covered by repair tape.
- All hose in use, carrying acetylene, oxygen, natural or manufactured fuel gas, or any gas or substance which may ignite or enter into combustion or be in any way harmful to employees, shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.
- Hose which has been subject to flashback, or which shows evidence of severe wear or damage, shall be tested to twice the normal pressure to which it is subject, but in no case, less than 300 p.s.i. Defective hose shall not be used.
- Hose couplings shall be of the type that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
- Boxes used for the storage of gas hose shall be ventilated.
- Hoses, cables and other equipment shall be kept clear of passageways, ladders, and stairs.

Torches

- Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills or other devices designed for such purpose.
- Torches in use shall be inspected at the beginning of each working shift for leaking shutoff valves, hose couplings and tip connections. Defective torches shall not be used.
- Torches shall be lighted by friction lighters or other approved devices, and not by matches or from hot work.

Regulators and Gauges

Oxygen and fuel gas pressure regulators, including their related gauges, shall be in proper working order or taken out of service.

Oil and Grease Hazards

Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes or within a fuel oil or other storage tank or vessel.

FALL PREVENTION POLICY

Slips, trips and falls are the third leading cause of work-related injuries. Ninety percent are due to the inattention of the person walking. The remaining l0 percent of slips, trips and falls are due to physical hazards.

The City of Sedalia and employees have a shared duty in the recognition, avoidance and control of hazards to prevent slips, trips and falls.

This policy describes the procedures which shall be followed when dealing with slips, trips and falls within the workplace.

Responsibilities of the Department Head/Supervisor

- Conduct regular and frequent inspections of working and walking areas to identify environmental and equipment hazards which could cause slips, trips and falls.
- Provide training for all employees on the prevention of slips, trips and falls.
- Require all workers to wear proper footwear for their work and environment.
- Report, record and thoroughly investigate all slips, trips and falls. Take corrective action immediately.
- Encourage daily stretching to increase flexibility and reduce daily fatigue.

Slipping Hazards

Slipping injuries are especially linked with wet floors. Slips occur when foot and floor surface cannot make effective contact or grip. This hazard is generally controlled and minimized by good housekeeping and maintenance, supplemented by encouragement to wear suitable footwear where the hazard cannot be completely eliminated.

Hazards causing slipping

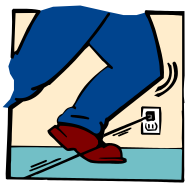
- Accidental spills or splashes of liquids or solids.
- Poorly drained or wet floors.
- Wet leaves, ice, rain, sleet or snow.
- Dusty floors.

- Sloping surfaces.
- Loose mats on floors.
- Change from wet to dry surfaces. (footwear still wet)
- Unsuitable or worn floor surface/covering.
- Unsuitable footwear, including worn shoes.
- Distracting conditions – glare, shadows or excess noise.

Control Measures

- Make arrangements to deal with spills quickly. Make it clear that it is everyone's responsibility to report and act on spills immediately. This includes spills of grease or oil or water and other substances. It also includes the accumulations of ice, water and mud which are tracked in from the outdoors.
- After wet cleaning, use appropriate signs/barriers or arrange alternative bypass routes.
- Ensure that carpets are securely fixed and do not have curling edges.
- Ensure adequate draining of floor surfaces; in cold conditions (frost, snow or sleet) grit or salt exterior surfaces where appropriate.
- Provide doormats and signs of risk on coming from dry to wet areas. Make sure that the mats are big enough to deal with the traffic.
- Ensure that staff wears suitable footwear.

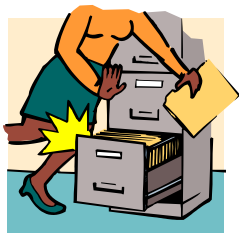
Tripping Hazards



Trips occur due to obstructions on the floor surface (clutter, wires, debris) fixed or otherwise, or when a person's view of obstructions is impeded or obscured. These hazards are generally controlled minimized by good planning, housekeeping and maintenance.

Hazards causing tripping

- Untied shoe laces
- Loose Floorboards and tiles
- Loose or worn carpets and mats
- Uneven floor surfaces, holes and cracks, bumps, ridges, protruding drain covers or nails, etc.
- Changes in surface level: ramps, steps and stairs
- Cables across walking areas
- Obstructions: materials, rubbish, etc.
- Low wall and floor fixtures: door stops, catches, etc.
- Electrical and telephone socket outlets

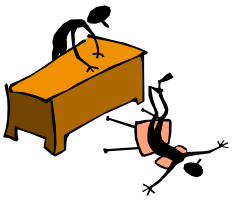


- Poor visibility or lighting – shadows, glare

Control Measures

- Look before you walk. Make sure pathways are clear. When carrying a load, make sure you can see over or around it.
- Ensure that all floor surfaces are maintained - repair damaged surfaces and fill holes and cracks, etc.
- Ensure adequate lighting where necessary
- Ensure that steps and access ramps are fitted with secure handrails
- Position equipment to avoid cables crossing pedestrian routes, use cable covers to securely fix to surfaces and restrict access to prevent contact
- Keep access areas free from obstructions. Clean regularly, do not allow rubbish to build up. Store goods and materials in suitable receptacles. Ensure that waste materials are regularly disposed of especially flammable and combustible materials.
- If you see anything on the floor – a pen, paperclip, etc. – PICK IT UP!

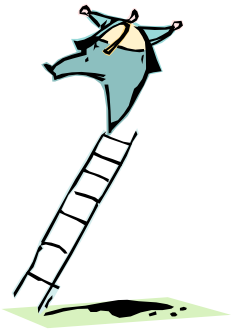
Falling Hazards



Falls are the most common type of injury. Yet almost all falls can be prevented by using common safety sense and learning how to recognize and correct typical fall hazards.

Hazards causing falls

- Steps
- Wet floors
- Loose or irregular surfaces
- Oil and grease
- Obstructed aisles
- Improper shoes
- Moving too fast
- Poor lighting



Control Measures

- Place barriers around temporary openings, open manholes, etc.
- Do not jump down from high places such as vehicle cabs, tailgates, etc.
- Do not tip back when sitting in chairs
- Fit secure fencing and guard rails around any place where a person could fall into

- Conduct regular visual inspections of pathways, manhole covers and other potential hazards.
- Hold on to hand rails when walking up or down steps.
- Keep file drawers shut. Close file drawers after each use.
- Do not use chairs or boxes as ladders.
- Use proper personal protective equipment such as a full-body harness if you are going to be on a high structure.

LAWN MOWER AND WEED EATER SAFETY POLICY

Since nearly all mower and weed eater accidents result from human error, it is important to recognize potential hazards before they happen. Injuries include deep cuts, loss of fingers and toes, burns, eye injuries, etc.

A few simple precautions will help you get your work completed more efficiently and safely.

Lawn Mower Safety Guidelines

- Review the operator's manual that comes with the mower and become familiar with the mower's safety features.
- Get mower serviced before each cutting season.
- Keep all safety shields and mower shut-off mechanisms in place. These are provided by the manufacturer to insure your safety.
- Know how to start and stop the machine safely.
- Wear long pants and heavy-duty shoes with non-slip soles when mowing.
- Before starting the mower, walk around the area and pick up any rocks, sticks, wires, etc. in the path.
- Before starting, fill the gas tank while the engine is still cold. Wipe up all spills. Never smoke near gasoline.
- Never leave the mower unattended while the engine is running.
- Stop mowing when a person or pet is in the area.
- Never cross driveways or paths with the blade rotating. The blade can pick up and throw rocks.
- To clear clogged discharge chute, turn off the engine and then clear chute.
- If the blade strikes an object, shut down the mower and examine it thoroughly for damage.

Walk-behind rotary mowers

- Buy a mower with a control that stops the mower when letting go of the handle.
- Do not mow up and down an incline. Mow across instead.
- Keep the mower flat when cutting.
- Push the mower - pulling it increases the risk of slipping and pulling it over the foot.

Riding mowers

- Don't carry passengers on a riding mower.
- Always start the machine from the operator's seat, not while standing beside it.
- Slow down at corners, blind spots, and descending hills.
- Watch for holes, ruts, or bumps obscured by grass.
- Do not mow in reverse. If you must back up, disengage the blade and proceed with caution.
- Mow up and down slopes, never across. On a slope: if the tires slip, the slope is too steep. Disengage the blade and move slowly straight down the slope.
  If there is doubt about tipping or losing control of the riding mower, stay off the slope.

Weed Eater Safety Guidelines

- Never install a blade on a weed eater that was not designed for it. Insure that if a weed eater can be used as a bladed unit all proper blade specific safety guards are installed.
- Use the recommended size line for the weed eater. Heavier line will stress the motor.
- Keep the weed eater head clean of debris and dirt.
- Keep the weed eater dry and do not use in rain or wet conditions.
- Before refueling the weed eater, turn it off and let it cool down. Gasoline spilled on hot engine parts could ignite. Gasoline, propane, kerosene, and other flammable liquids should be stored outside, in properly-labeled, non-glass safety containers.
- Maintain the weed eater's engine according to its maintenance schedule for peak performance and safety.

Personal Safety

- Always wear protective eyewear, such as safety glasses, goggles, or face shield.
- Don't forget ear protection, as well as boots, long pants, and gloves.
- Remember to watch where mowing or weed eating. Bystanders, children, and vehicles up to 50 feet away can be struck by debris kicked up by the mower or weed eater.

With a little extra caution and safety measures, many of the injuries caused by lawn mowers and weed eaters can be prevented.

HEAT STRESS POLICY

Heat stress is a condition in which the body has suddenly lost the ability to cool itself. During periods of physical exercise, heat begins to build up from energy produced by working muscles and is also absorbed from the surrounding area. Under these conditions, it is common to lose two quarts of fluid or more during an hour's work. Dehydration occurs when the body is depleted of adequate fluid needed to maintain a safe temperature. It is then that heat stress injuries soon become evident.

GENERAL PRECAUTIONS

1. Condition body for working in hot environments – start slowly then build up to more physical work. Allow body to adjust over a few days.

2. Drink liquids. Fluid replacement of six ounces or more should occur every 15 to 20 minutes. Electrolyte drinks, like Gatorade, are good for replacing both water and minerals lost through sweating. Avoid caffeinated beverages like coffee and soda pop.

3. Take a break when overheating or headaches occur. Cool off for a few minutes before going back to work.

4. Wear light weight, light colored, "breathable" clothing when working out in the sun. Remove heavy clothing or protective equipment during rest periods.

5. Take advantage of fans, air-coolants or air-conditioners, ventilators, and exhaust systems.

SYMPTOMS/TREATMENT OF THREE MAJOR FORMS OF HEAT STRESS

Heat Cramps

Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Heat cramps are caused by heavy sweating and usually accompany the early stages of dehydration.

Heat Cramps First Aid

- Massage or use firm pressure on the muscle that is cramping.
- Drink small sips of water.
- Move into the shade or a cooler place (not cold).

Heat Exhaustion

Heat exhaustion is more serious than heat cramps. It occurs when the body's internal air-conditioning system is overworked, but hasn't completely shut down. In heat exhaustion, the surface blood vessels and capillaries which originally enlarged to cool the blood collapse from loss of body fluids and necessary minerals. This happens when you don't drink enough fluids to replace what you're sweating away.

The symptoms of heat exhaustion include: headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120-200), and low to normal blood pressure.

Heat Exhaustion First Aid

- A person suffering from heat exhaustion should be moved to a cool location such as a shaded area or air-conditioned building.
- Have them lie down with their feet slightly elevated.
- Loosen their clothing, apply cool wet cloths or fan them.
- Have them drink water or electrolyte drinks, such as Gatorade.
- Try to cool them down.
- Have them checked by medical personnel if necessary.
- Victims of heat exhaustion should avoid strenuous activity for at least a day.
- They should continue to drink water to replace lost body fluids.

Heat Stroke

Heat stroke is a life threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or heat exhaustion before progressing into the heat stroke stage, but this is not always the case. It should be noted that heat stroke is sometimes mistaken for heart attack. It is therefore very important to be able to recognize the signs and symptoms of heat stroke – and to check for them anytime an employee collapses while working in a hot environment.

The early symptoms of heat stroke include a high body temperature (103°F); a distinct absence of sweating (usually); hot red or flushed dry skin; rapid pulse; difficulty breathing; constricted pupils; any and all signs or symptoms of heat exhaustion such as dizziness, headache, nausea,

vomiting, or confusion, but more severe; bizarre behavior; and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108°F.

Heat Stroke First Aid

- It is vital to lower a heat stroke victim's body temperature. Seconds count.
- Pour water on them, fan them, or apply cold packs.
- Call 911 and get an ambulance on the way as soon as possible.

FIRE EXTINGUISHER SAFETY POLICY

Types of Portable Fire Extinguishers

- **Class A –** Ordinary combustibles (paper, wood, rags, etc.)
- **Class B –** Flammable Liquids
- **Class C –** Electrical Equipment
- **Class D –** Combustible Metals
- **Combination Types –** ABC and BC

General Principles of Fire Extinguisher Use

Use the PASS system when fighting fires

- **P**ull pin **–** this allows you to activate the extinguisher
- **A**im **–** hold hose and point at the base of the fire
- **S**queeze – the trigger mechanism to release the extinguishing agent
- **S**weep – back and forth at the base of the fire

Hazards involved with incipient state fire fighting

- A fire at the INCIPIENT stage when it has just started and it is easily extinguishable by one extinguisher and requires no special fire fighting gear or equipment
- A fire can quickly go beyond the incipient stage.
- Ensure others are warned when a fire is discovered.

Locations of fire extinguishers

- Maximum employee travel distance to any extinguisher
- Class A – 75 feet
- Class B – 50 feet
- Class C – Applicable Class A or B distance
- Class D – 75 feet

Maintenance and Inspection

- Visual inspection each month
- Maintenance check every year
- Hydrostatically tested whenever they show new evidence of corrosion or mechanical damage and:

  CO_2 – 5 years

  Water – 5 years

  Dry Chem – 12 years (empty and refill every 6 years)

Rules for Fires

Fires are very dangerous, be certain that you will not endanger yourself or others when attempting to put out a fire.

Pull the Fire Alarm
Call 911
Assist anyone in danger

- Never fight a fire if you don't know what is burning
- If you don't know what is burning, you don't know what type of extinguisher to use. Even if you have an ABC extinguisher, there may be something in the fire that could explode or produce highly toxic smoke.
- Never fight a fire if the fire is spreading rapidly beyond the spot where it started
- The time to use an extinguisher is in the incipient, or beginning, stages of a fire. If the fire is already spreading quickly, it is best to simply evacuate the building, closing doors and windows behind you as you leave
- Never fight a fire if you don't have adequate or appropriate equipment
- If you don't have the correct type or large enough extinguisher, it is best not to try to fight the fire
- Never fight a fire if you might inhale toxic smoke
- If the fire is producing large amounts of smoke that you would have to breathe in order to fight it, it is best not to try, gases from manmade materials can be fatal in very small amounts
- Never fight a fire if your instincts tell you not to
- If you are uncomfortable with the situation for any reason, just let the fire department do their job
- The final rule is to always position yourself with an exit or means of escape at your back before you attempt to use an extinguisher to put out a fire
- In case the extinguisher malfunctions, or something unexpected happens, you need to be able to get out quickly, and you don't want to become trapped
- Just remember, always keep an exit at your back

WIRELESS COMMUNICATION POLICY

ERROR! BOOKMARK NOT DEFINED. The City of Sedalia recognizes that employees are our most valuable asset and the City is firmly committed to the safety of our employees by providing a safe working environment.

Distractions occur during driving. As a driver, your first responsibility is to pay attention to the road. Curbing the use of cell phone/hand held devices and wireless communication devices, while driving, is one way to minimize the risk of accidents to our employees. The following Cell Phone/Hand Held Device/Wireless Communication Policy has been established for all employees who drive while conducting business on behalf of the City in any manner.

Definitions

Mobile Hand Held Units – Hand held devices may include cell phones, iPhones, pagers, palm pilots, iPods and other communication devices.

Wireless Communication – Hands free enabling devices including head sets and Bluetooth.

Procedures

- Allow voicemail to handle your calls and return them when safe.
- If you need to place or receive a call, pull off the road to a safe location and stop the vehicle before using the phone.
- Ask a passenger to make or take the call.
- Inform regular callers of the best time to reach you based upon your driving schedule.
- The only exception to this policy is for calls placed to 911.
- If placing or accepting an emergency call, keep the call short and use hands' free options, if available.
- When receiving an emergency call, ask the caller to hold briefly until you can safely pull your vehicle off the road.
- Do not use your cellular phone to send text messages, surf the internet or receive or respond to emails while driving.
- Use hands free enabling devices cautiously. They do not guarantee l00% safety, but do provide workers with less distraction.

BACK INJURY PREVENTION POLICY

The City of Sedalia places a high emphasis on the prevention of back injury and the policy and procedures necessary to safeguard each employee from potential back injury risks.

Back injuries are a leading cause of lost time from work. They can cause pain and inconvenience – and perhaps a lifetime of suffering.

Lifting incorrectly is a major contributor to back injuries. These injuries are not confined to workers who do heavy lifting all day long. Back injuries occur in all kinds of jobs, so it is important for everyone to understand how to lift safely.

To lift safely, first plan your lift. Take a good look at the load, determining size, weight, shape and how it is positioned. Could the load be too heavy, too big or too awkward for you to move by yourself?

Also plan the route which you will take. Look for any potential problems such as a slippery or uneven floor surface or obstacles along the way. Don't forget to have a look at the spot where you will set down the load so you can determine any difficulties.

RISKY MOVES

Certain actions are more likely to cause back injuries than others. Anytime you find yourself doing one of these things, you should think: DANGER! My back is at risk!

- *Heavy lifting* … especially repetitive lifting over a long period of time.
- *Twisting at the waist* while lifting or holding a heavy load (this frequently happens when using a shovel).
- *Reaching and lifting* … over your head, across a table, or out the back of a truck.
- *Lifting or carrying objects with awkward or odd shapes.*
- *Working in awkward, uncomfortable positions* … gardening, kneeling, tasks that require you to bend over for long periods of time … Also, sitting or standing for too long without shifting.

When you find yourself in one of these situations, take measures to protect your back by using proper lifting procedures, getting help, turning with your feet instead of with your waist, or taking short breaks to stretch and flex your muscles.

HOW TO PICK UP A LOAD

- Get as close as possible to the load.
- Get a firm footing. Position your feet approximately shoulder-width apart. If necessary, straddle the load.
- Keep your back straight. Tuck in your backside, and bend your knees. Never bend from the waist or stretch out your upper body.
- Grip with your whole hands. Fingers alone are too weak.
- Bend your knees and lift with your legs, not your back.
- Move your feet to turn. Don't twist your back.
- Before you start to move with the load, be sure you can see over it.
- When setting down the load, make sure you do not put strain on your back by bending over. Squat down again if necessary.

There's no point in getting a back injury by trying to be a hero with a heavy load. Get help if you need it. Two or more people can do a team lift. Mechanical aids such as a hand truck or pallet jack can also be called into service.

Some lifts require special techniques:

- If you must lift a load higher than your shoulders, use a stepstool, stepladder or similar safe device with assistance.

- It can also be tough to pick up a load from deep inside a bin. In this case, get close to the load and press your bent knees against the bin.

- For light objects in a bin, flex one knee and swing the other leg out behind you. Use one hand on the edge of the bin for balance, and use the other hand to pick up the item.

According to the Bureau of Labor Statistics, more than one million workers suffer back injuries each year, and back injuries account for one of every five workplace injuries.

INJURY MANAGEMENT

ACCIDENT/INCIDENT REPORTING PROCEDURES AND INVESTIGATION

This policy sets out guidelines and procedures for the reporting and investigation of accidents and incidents involving City employees.

Definitions

Accident - described as things that happen unintentionally.

Incident - wider meaning that can be used both for accidents and for intentional actions.

Responsibility

The Department Head and/or Supervisor shall notify the City Clerk's Office as soon as possible when an accident or incident has occurred including minor occurrences. A Supervisor's Report of Accident Investigation form shall be completed and submitted to the City Clerk within 24 hours of the accident or incident. If the accident or incident occurs over the weekend, the report shall be provided to the City Clerk on the next available working day.

The Department Head and/or Supervisor shall investigate all accidents and incidents with the primary focus to understand why the accident or incident occurred and provide corrective actions. You know the employees and the work better than anyone else. You are in the best position to get the facts and find a practical solution to the problem, or recognize those problems needing the attention of technical personnel.

The City Clerk shall file the claim as required by law to the appropriate insurance company.

How to handle an employee injury

- Provide immediate medical attention to the injured employee.
- Contact the employee's supervisor as soon as possible.
- All initial medical appointments and follow-up appointments for worker compensation claims shall be made through the City Clerk's Office.
- The Supervisor or his designee shall transport the injured employee to the City's company doctor to receive appropriate medical attention. If an injury occurs after 5:00 p.m., or on weekends, that require medical

treatment, the injured employee will need to go to the emergency room at Bothwell Regional Health Center.
- If applicable, a post-accident drug and/or alcohol test will be conducted as required in accordance with Section 9.3 of the City of Sedalia's Controlled Substance & Alcohol Testing Policy.

Accident/Incident Investigation

All accidents and incidents (serious and minor) shall be investigated.

The investigation of the accident or incident can help to promote better relations with employees by demonstrating concern for their safety and providing the need for accident/incident prevention.

How to Conduct the Investigation:

The most important part of an investigation is to **FOLLOW THROUGH**!

Use the (4) P's to investigate and document:

- People – Document the names of eyewitness or the ear (hearing) witness
- Position – Exact location of the accident or incident
- Part – Identify the effected parts of the body or where vehicle damage occurred.
- Photograph – Take pictures of the site, if needed, for records

Investigation Interview Steps

Each accident and incident will be reviewed by the Safety Committee, therefore, it is important to obtain all pertinent information when interviewing.

The investigation should describe the events that created the accident or incident and should occur within 24 hours when the facts are fresh in the memories of witnesses and employees involved in the accident or incident.

A thorough investigation provides information about improper work habits, methods and conditions which can be corrected to prevent future accidents and incidents.

- Create a feeling of trust and keep an open mind during the investigation.
- Eliminate distractions and allow the proper timeframe for the interview.
- Ask open-ended questions – Who, What, Where, When, Why and How??

- Ask questions that will solve the problem and reduce the likelihood of a similar accident or incident.
- Listen. During a typical interview, the interviewer should be talking 25 percent of the time and the interviewee should be speaking 75 percent of the time. Don't interrupt persons while they describe what they saw and heard.
- Never point fingers, assume or jump to conclusions. Never attribute accident or incident causes to carelessness. They are caused by "hidden" problems that can be corrected if identified.
- All witnesses to the accident should speak with the Department Head and/or Supervisor and cooperate fully in during the investigation.
- Interview witnesses separately to get a full detail of their recollection of events without the influence from other witnesses. Let witnesses know their input is important and can prevent reoccurrence.
- If the injured employee is hurt or distressed about the event, the employee interview should be conducted when the employee is calm or medically fit.

Correcting Accident/Incident Causes

Be sure the condition which caused the accident or incident is eliminated or controlled at once. Time has been wasted if the results of the investigation are not used to devise ways of preventing more accidents or incidents.

Procedures to follow

1. If human error is involved, be sure the employee is properly instructed on how to perform the task safely. Also, all employees involved in similar operations should receive the same instructions.
2. Where the operation can be changed to eliminate the hazard, make the changes if it is within your authority to do so. If it exceeds your authority, get approval from your Department Head.
3. When equipment changes or guards are necessary, decide exactly what is needed, then discuss it with the Department Head.
4. Make a written record of your findings, the action already taken and your recommendations on the "Supervisor's Report of Accident Investigation" form.

Supervisor's Report of Accident Investigation Form

All accident and incidents shall be reported on the "Supervisor's Report of Accident Investigation" form which is incorporated. All information on the form must be complete and accurate. Once the report form has been

completed, a copy is to be sent to the City Clerk's office. The report will be filed with the appropriate insurance company and a file will be set up and retained in the City Clerk's Office.

Medical Authorization to Obtain Information Form

Injured employees must fill out the "Medical Authorization to Obtain Information" release form when requested by the appropriate insurance company.

Disciplinary Action

Department heads may take disciplinary action against employees to correct below standard work performance and/or improper work conduct, including safety violations as set forth in the City's Personnel Regulations.

AUTHORIZATION TO OBTAIN INFORMATION

I AUTHORIZE any licensed physician, medical practitioner, nurse, pharmacist, hospital, clinic or other medical or medically related facility, insurance or reinsurance company, consumer reporting agency, employer or former employer who has any information as to the diagnosis, treatment or prognosis of any physical or mental condition of me, and any information regarding my occupation and salary, to give any and all such information to Missouri Employers Mutual Insurance, its employees, reinsurers, Premier, CCO, HNC Solutions, Healthlink/CompManagement and the Division of Workers' Compensation to which I am submitting a claim.

I UNDERSTAND that the information obtained by use of this authorization will be used by the company to determine eligibility for workers compensation benefits. Any information obtained will not be released to any person or organization except to other persons or organizations performing a business or legal service in connection with my claim or as may be otherwise permitted or required by law.

I UNDERSTAND the information contained in these records may include information relating to sexually transmitted disease, acquired immunodeficiency syndrome (AIDS), or human immunodeficiency virus (HIV). It may also include information about behavioral or mental health services, and drug or alcohol use or abuse. **I HEREBY CONSENT AND AUTHORIZE** the medical record provider to release and provide records containing this information to Missouri Employers Mutual Insurance.

I KNOW that I may request to receive a copy of this authorization.

I AGREE that a photocopy of this authorization shall be as valid as the original.

I AGREE that this authorization shall be valid for the duration of this claim.

Date	**Print Name of Injured Employee**
	Signature of Injured Employee or Authorized Representative

***NOTE TO RECORD PROVIDER:**

The Health Insurance Portability and Accountability Act (HIPAA) expressly indicates that a patient's consent or authorization is not required for records to be disclosed when the request is made pursuant to workers compensation laws. See 45 CFR Section 164.512(1). This request for records is made pursuant to The Missouri Workers' Compensation Act, Section 287.210 RSMo., subsections 5 and 6.

Submit completed form to the City Clerk, who will submit to Missouri Employer's Mutual Insurance Company.

LIGHT DUTY RETURN TO WORK
POLICY AND PROCEDURES

Policy

The City of Sedalia has established a Light Duty Return to Work Program which, if available, will apply to job related injuries with limitations to assist injured employees to return to regular employment following a job accident or incident.

The return to work process should start as soon as possible. Specific injuries may need differing amounts of time for healing. The time limits on light duty return to work should be flexible and based on the medical judgment of the treating physician.

Responsibility

After the injured employee has been medically examined, the injured employee shall bring a return to work document from the doctor. The employee's Supervisor and/or Department Head will review the physician's certification to determine whether it indicates any restrictions. The Supervisor will then assess how such restrictions are likely to impact the employee's ability to perform his/her regular duties.

Light Duty

A light duty job means some job tasks are removed from the regular job duties because of medical restrictions. Employees must fully understand that this is temporary work used as a part of the rehabilitation program and that they will be expected to return to their full job as soon as medically able. The City is not required to make light duty job available to employees.

The City of Sedalia will determine the appropriate work hours, shifts, duration and locations of all light duty assignments.

Supervisors or other designated personnel need to work closely with the workers on light duty to make sure the job tasks fit the medical needs. Workers need close monitoring during the light duty assignment. They will be directed not to work outside their restrictions and fellow workers must know not to ask them to do so.

If an injured employee refuses the light duty assignment by not arriving for work on the date and time specified, the employee will be subject to appropriate discipline.

Permanent Restrictions

If an employee has permanent work restrictions preventing a return to regular work, the light duty position will end. The City of Sedalia will determine if the permanent restriction and/or restrictions will prevent the employee from performing their essential job functions.

Work Release

The employee may not return to regular work duty without a signed release form from the treating physician.

CITY OF SEDALIA
WC LIGHT DUTY AGREEMENT

Employee's Name: _____ Department: _____

Employee's Title: _____ Date: _____

My work duties are changed from _____ until _____

I am assigned to alternative work duties or limited duties. My revised work duties are listed below:

_____
_____
_____
_____
_____
_____

The above duties are within the restrictions specified by your treating physician.

I agree to do the above work duties and follow my doctor's medical restrictions. If I ignore any medical restrictions, I understand that my employer may take disciplinary action.

If a supervisor or anyone else asks me to do work assignments or activities that don't follow my medical restrictions, I must immediately report the situation to my Supervisor and/or Department Head, who will take action to correct the situation.

If I think my new work duties are causing discomfort or making my medical condition worse, I will report this immediately to my Supervisor.

Employee Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____

CITY OF SEDALIA

WORKER'S COMPENSATION LIGHT DUTY POLICY

The City of Sedalia is committed to providing a safe and healthy workplace for our employees. Preventing injuries is our primary objective. We have developed a Light Duty Return to Work Program.

This program is a team effort and all levels of management, including supervisors and employees, must make a commitment.

If an employee is injured, we will use our Light Duty Return to Work Program to determine if there are light duty jobs available to provide assistance to employees with medical restrictions. We will get immediate appropriate medical attention for employees who are injured on the job and attempt to create opportunities for them to return to safe, productive work as soon as medically appropriate.

Our ultimate goal is to return employees to their original job. If an injured employee is unable to perform all of the tasks of the original job, we will determine if there is light duty work available which will provide productive light duty work while the employee is recovering and unable to return to regular duties. The goal of our program is to provide meaningful work assignments as soon as it is feasible following an injury, while avoiding any aggravation of the injury.

_____

Gary Edwards,
City Administrator
City of Sedalia, MO

City of Sedalia

FIRST AID MANUAL

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FIRST AID MANUAL

First aid is emergency medical treatment for someone who is ill or injured, given before more thorough medical attention can be obtained.

ANAPHYLAXIS
A severe allergic reaction (anaphylaxis) can produce shock and life-threatening respiratory distress and circulatory collapse.

In sensitive people, anaphylaxis can occur within minutes, but may also occur up to several hours after exposure to a specific allergy-causing substance. A wide range of substances — including insect venom, pollen, latex, and certain foods and drugs — can cause anaphylaxis. Some people have anaphylactic reactions from unknown causes.

If you're extremely sensitive, you might break out in hives and your eyes or lips might swell severely. The inside of your throat might swell as well, even to the point of causing difficulty breathing and shock. Your blood pressure drops, and your internal organs can be affected. Dizziness, mental confusion, abdominal cramping, nausea, vomiting or diarrhea also may accompany anaphylaxis.

How you can be ready?
If you've had an anaphylactic reaction in the past, carry medications with you as an antidote. Epinephrine is the most commonly used drug for severe allergic reactions. It comes only as an injection that must be prescribed by your doctor. You can self-administer epinephrine with an auto-injector, such as the EpiPen. Be sure to read the injection instructions as soon as you receive an auto-injector, and have your household members read them as well.

You should also carry an antihistamine pill, such as diphenhydramine (Benadryl, others), because the effects of epinephrine are only temporary. Seek emergency medical attention immediately after taking these medications.

If you observe someone having an allergic reaction with signs of anaphylaxis:

1. Call 911.
2. Check for special medications that the person might be carrying to treat an allergic attack, such as an auto-injector of epinephrine (for example, EpiPen). Administer the drug as directed — usually by

pressing the auto-injector against the person's thigh and holding it in place for several seconds. Massage the injection site for 10 seconds to enhance absorption. After administering epinephrine, have the person take an antihistamine pill if he or she is able to do so without choking. Look for a medical emergency ID bracelet or necklace.

3. Have the person lie still on his or her back with feet higher than the head.
4. Loosen tight clothing and cover the person with a blanket. Don't give anything else to drink.
5. If there's vomiting or bleeding from the mouth, turn the person on his or her side to prevent choking.
6. If there are no signs of circulation (breathing, coughing or movement), begin CPR.

ANIMAL BITES

If an animal bites you, follow these guidelines:

- **For minor wounds.** If the bite barely breaks the skin and there is no danger of rabies, treat it as a minor wound. Wash the wound thoroughly with soap and water. Apply an antibiotic cream to prevent infection and cover the bite with a clean bandage.
- **For deep wounds.** If the animal bite creates a deep puncture of the skin or the skin is badly torn and bleeding, apply pressure with a clean, dry cloth to stop the bleeding and see your doctor.
- **For infection.** If you notice signs of infection, such as swelling, redness, increased pain or oozing, see your doctor immediately.
- **For suspected rabies.** If you suspect the bite was caused by an animal that might carry rabies — including any wild or domestic animal of unknown immunization status — see your doctor immediately.

Doctors recommend getting a tetanus shot every 10 years. If your last one was more than five years ago and your wound is deep or dirty, your doctor may recommend a booster. You should have the booster within 48 hours of the injury.

Domestic pets cause most animal bites. Dogs are more likely to bite than cats are. Cat bites, however, are more likely to cause infection. Bites from nonimmunized domestic animals and wild animals carry the risk of rabies. Rabies is more common in raccoons, skunks, bats and foxes than in cats and dogs. Rabbits, squirrels and other rodents rarely carry rabies.

BLACK EYE

The so-called black eye is caused by bleeding beneath the skin around the eye. Sometimes a black eye indicates a more extensive injury, even a skull fracture, particularly if the area around both eyes is bruised (raccoon eyes) or if there has been a head injury.

Although most black eye injuries aren't serious, bleeding within the eye, called a hyphema, is serious and can reduce vision and damage the cornea — the clear, protective "window" at the front of the eye. In some cases, abnormally high pressure inside the eyeball (glaucoma) also can result.

To take care of a black eye:

- Using gentle pressure, apply a cold pack or a cloth filled with ice to the area around the eye. Take care not to press on the eye itself. Apply cold as soon as possible after the injury to reduce swelling, and continue using ice or cold packs for 24 to 48 hours.
- Be sure there's no blood within the white and colored parts of the eye.

Seek medical care immediately if you experience vision problems (double vision, blurring), severe pain, or bleeding in the eye or from the nose.

BLEEDING

To stop serious bleeding, lay the affected person down with the head slightly lower than the trunk, or elevate the person's legs. If possible, elevate the wound above the level of the heart to reduce blood flow. Apply steady, firm pressure directly to the wound using a sterile cloth. Maintain this pressure until the bleeding stops. Then wrap the wound tightly with a gauze bandage, and secure it with adhesive tape.

If the bleeding continues and seeps through the bandage, add more absorbent material. Do not remove the first bandage. If the bleeding doesn't stop, apply pressure to the major artery that delivers blood to the area of the injury.

When the bleeding has stopped, immobilize the injured part of the body. You can use another part of the body, such as a leg or the torso, to immobilize the area. Make sure to leave the bandages in place. Then get immediate medical attention.

BLISTERS

Common causes of blisters include friction and burns. If the blister isn't too painful, do everything possible to keep it intact. Unbroken skin over a blister provides a natural barrier to bacteria and decreases the risk of infection. Cover a small blister with an adhesive bandage, and cover a large one with a porous, plastic-coated gauze pad that absorbs moisture and allows the wound to breathe.

Don't puncture a blister unless it's painful or prevents you from walking or using one of your hands. If you have diabetes or poor circulation, call your doctor before considering the self-care measures below.

To relieve blister-related pain, drain the fluid while leaving the overlying skin intact. Here's how:

- **Wash your hands and the blister** with soap and warm water.
- **Swab the blister** with iodine or rubbing alcohol.
- **Sterilize a clean, sharp needle** by wiping it with rubbing alcohol.
- **Use the needle to puncture the blister.** Aim for several spots near the blister's edge. Let the fluid drain, but leave the overlying skin in place.
- **Apply an antibiotic ointment** to the blister and cover with a bandage or gauze pad.
- **Cut away all the dead skin** after several days, using tweezers and scissors sterilized with rubbing alcohol. Apply more ointment and a bandage.

Call your doctor if you see signs of infection around a blister — pus, redness, increasing pain or warm skin.

To prevent a blister, use gloves, socks, a bandage or similar protective covering over the area being rubbed. Special athletic socks are available that have extra padding in critical areas. You might also try attaching moleskin to the inside of your shoe where it might rub, such as at the heel.

Shoe-shopping tips

Remember the following when you shop for shoes:

- **Shop during the middle of the day.** Your feet swell throughout the day, so a midday fitting will probably give you the best fit.
- **Wear the same socks you'll wear when walking**, or bring them with you to the store.
- **Measure your feet.** Shoe sizes change throughout adulthood.
- **Measure both feet and try on both shoes.** If your feet differ in size, buy the larger size.

- **Go for flexible, but supportive, shoes** with cushioned insoles.
- **Leave toe room.** Be sure that you can comfortably wiggle your toes.
- **Avoid shoes with seams in the toe box**, which may irritate bunions or hammertoes.

BRUISE

A bruise forms when a blow breaks small blood vessels near your skin's surface, allowing a small amount of blood to leak out into the tissues under your skin. The trapped blood appears as a black-and-blue mark. Sometimes, there also are tiny red dots or red splotches.

If your skin isn't broken, you don't need a bandage. You can, however, enhance bruise healing with these simple techniques:

- Elevate the injured area.
- Apply ice or a cold pack several times a day for a day or two after the injury.
- Rest the bruised area, if possible.
- Consider acetaminophen (Tylenol, others) for pain relief.

See your doctor if:

- You have unusually large or painful bruises — particularly if your bruises seem to develop for no known reasons.
- You bruise easily and you're experiencing abnormal bleeding elsewhere, such as from your nose or gums, or you notice blood in your eyes, your stool or your urine.
- You have no history of bruising, but suddenly experience bruises.

These signs and symptoms may indicate a more serious problem, such as a blood-clotting problem or blood-related disease. Bruises accompanied by persistent pain or headache also may indicate a more serious underlying illness and require medical attention.

BURNS

To distinguish a minor burn from a serious burn, the first step is to determine the degree and the extent of damage to body tissues. The three classifications of first-degree burn, second-degree burn and third-degree burn will help you determine emergency care:

First-degree burn

The least serious burns are those in which only the outer layer of skin is burned. The skin is usually red, with swelling and pain sometimes present. The outer layer of skin hasn't been burned through. Treat a first-degree burn

as a minor burn unless it involves substantial portions of the hands, feet, face, groin or buttocks, or a major joint.

Second-degree burn
When the first layer of skin has been burned through and the second layer of skin (dermis) also is burned, the injury is called a second-degree burn. Blisters develop and the skin takes on an intensely reddened, splotchy appearance. Second-degree burns produce severe pain and swelling.

If the second-degree burn is no larger than 3 inches in diameter, treat it as a minor burn. If the burned area is larger or if the burn is on the hands, feet, face, groin or buttocks, or over a major joint, treat it as a major burn and get medical help immediately.

For minor burns, including first-degree burns and second-degree burns limited to an area no larger than 3 inches in diameter, take the following action:

- **Cool the burn.** Hold the burned area under cold running water for at least five minutes, or until the pain subsides. If this is impractical, immerse the burn in cold water or cool it with cold compresses. Cooling the burn reduces swelling by conducting heat away from the skin. Don't put ice on the burn.
- **Cover the burn with a sterile gauze bandage.** Don't use fluffy cotton, which may irritate the skin. Wrap the gauze loosely to avoid putting pressure on burned skin. Bandaging keeps air off the burned skin, reduces pain and protects blistered skin.
- **Take an over-the-counter pain reliever.** These include aspirin, ibuprofen (Advil, Motrin, others), naproxen (Aleve) or acetaminophen (Tylenol, others). Never give aspirin to children or teenagers.

Minor burns usually heal without further treatment. They may heal with pigment changes, meaning the healed area may be a different color from the surrounding skin. Watch for signs of infection, such as increased pain, redness, fever, swelling or oozing. If infection develops, seek medical help. Avoid re-injuring or tanning if the burns are less than a year old — doing so may cause more extensive pigmentation changes. Use sunscreen on the area for at least a year.

Caution

- **Don't use ice.** Putting ice directly on a burn can cause frostbite, further damaging your skin.

- **Don't apply butter or ointments to the burn.** This could prevent proper healing.
- **Don't break blisters.** Broken blisters are vulnerable to infection.

Third-degree burn
The most serious burns are painless, involve all layers of the skin and cause permanent tissue damage. Fat, muscle and even bone may be affected. Areas may be charred black or appear dry and white. Difficulty inhaling and exhaling, carbon monoxide poisoning, or other toxic effects may occur if smoke inhalation accompanies the burn.

For major burns, dial 911 or call for emergency medical assistance. Until an emergency unit arrives, follow these steps:

1. **Don't remove burnt clothing.** However, do make sure the victim is no longer in contact with smoldering materials or exposed to smoke or heat.
2. **Don't immerse large severe burns in cold water.** Doing so could cause shock.
3. **Check for signs of circulation (breathing, coughing or movement).** If there is no breathing or other sign of circulation, begin cardiopulmonary resuscitation (CPR).
4. **Elevate the burned body part or parts.** Raise above heart level, when possible.

Cover the area of the burn. Use a cool, moist, sterile bandage; clean, moist cloth; or moist towels.

CARDIOPULONARY RESUSCITATION
Cardiopulmonary resuscitation (CPR) is a lifesaving technique useful in many emergencies, including heart attack or near drowning, in which someone's breathing or heartbeat has stopped.

Ideally, CPR involves two elements: **chest compressions** combined with **mouth-to-mouth rescue breathing**. (A complete description of how to do both follows farther down in this article.)

However, what you as a bystander actually should do in an emergency situation really depends on your knowledge and comfort level.

The bottom line is that it's **far better to do something** than to do nothing at all if you're fearful that your knowledge or abilities aren't 100 percent complete. Remember, the difference between your doing something and doing nothing could be someone's life.

Here's the latest advice from the American Heart Association:

- **Untrained.** If you're not trained in CPR, then provide hands-only CPR. That means uninterrupted chest presses of about two per second until paramedics arrive (described in more detail below). You don't need to try rescue breathing.
- **Trained, and ready to go.** If you're well trained, and confident in your ability, then you can opt for one of two approaches: 1. Alternate between 30 chest compressions and two rescue breaths, or 2. Just do chest compressions. (Details described below.)
- **Trained, but rusty.** If you've previously received CPR training, but you're not confident in your abilities, then it's fine to do just chest compressions.

The above advice applies only to adults needing CPR, not to children. CPR can keep oxygenated blood flowing to the brain and other vital organs until more definitive medical treatment can restore a normal heart rhythm. When the heart stops, the absence of oxygenated blood can cause irreparable brain damage in only a few minutes. Death will occur within eight to 10 minutes. Time is critical when you're helping an unconscious person who isn't breathing.

To learn CPR properly, an accredited first-aid training course, including CPR and how to use an automatic external defibrillator (AED) is required of employees.

Before you begin

Assess the situation before starting CPR:

- Is the person conscious or unconscious?
- If the person appears unconscious, tap or shake his or her shoulder and ask loudly, "Are you OK?"
- If the person doesn't respond and two people are available, one should call 911 and one should begin CPR. If you are alone and have immediate access to a telephone, call 911 before beginning CPR — unless you think the person has become unresponsive because of suffocation (such as from drowning). In this special case, begin CPR for one minute and then call 911.
- If an AED is immediately available, deliver one shock if advised by the device, then begin CPR.

Remember the ABCs

Think ABC — Airway, Breathing and Circulation — to remember the steps explained below. Move quickly through Airway and Breathing to begin chest compressions to restore circulation.

AIRWAY: Clear the airway

1. Put the person on his or her back on a firm surface.
2. Kneel next to the person's neck and shoulders.
3. Open the person's airway using the head-tilt, chin-lift maneuver. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the chin forward to open the airway.
4. Check for normal breathing, taking no more than five or 10 seconds: Look for chest motion, listen for breath sounds, and feel for the person's breath on your cheek and ear. Gasping is not considered to be normal breathing. If the person isn't breathing normally and you are trained in CPR, begin mouth-to-mouth breathing. If you believe the person is unconscious from a heart attack and you haven't been trained in emergency procedures, skip mouth-to-mouth rescue breathing and proceed directly to chest compressions to restore circulation.

BREATHING: Breathe for the person

Rescue breathing can be mouth-to-mouth breathing or mouth-to-nose breathing if the mouth is seriously injured or can't be opened.

1. With the airway open (using the head-tilt, chin-lift maneuver) pinch the nostrils shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal.
1. After 30 compressions, tilt the head back and lift the chin up to open the airway. Prepare to give two rescue breaths. Pinch the nose shut and breathe into the mouth for one second. If the chest rises, give a second rescue breath. If the chest doesn't rise, repeat the head-tilt, chin-lift maneuver and then give the second rescue breath. That's one cycle. If someone else is available, ask that person to give two breaths after you do 30 compressions.
2. Prepare to give two rescue breaths. Give the first rescue breath — lasting one second — and watch to see if the chest rises. If it does rise, give the second breath. If the chest doesn't rise, repeat the head-tilt, chin-lift maneuver and then give the second breath.
3. Begin chest compressions to restore circulation.

CIRCULATION: Restore blood circulation with chest compressions

2. Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.
3. Use your upper body weight (not just your arms) as you push straight down on (compress) the chest 2 inches. Push hard and push fast — give two compressions per second, or about 120 compressions per minute.
4. If the person has not begun moving after five cycles (about two minutes) and an automatic external defibrillator (AED) is available, apply it and follow the prompts. The American Heart Association recommends administering one shock, then resuming CPR — starting with chest compressions — for two more minutes before administering a second shock. Use pediatric pads, if available, for children ages 1 to 8. Do not use an AED for infants younger than age 1. If an AED isn't available, go to No. 5 below.
5. Continue CPR until there are signs of movement or until emergency medical personnel take over.

To perform CPR on a child

The procedure for giving CPR to a child age 1 through 8 is essentially the same as that for an adult. The differences are as follows:

- If you're alone, perform five cycles of compressions and breaths on the child — this should take about two minutes — before calling 911 or your local emergency number or using an AED.
- Use only one hand to perform heart compressions.
- Breathe more gently.
- Use the same compression-breath rate as is used for adults: 30 compressions followed by two breaths. This is one cycle. Following the two breaths, immediately begin the next cycle of compressions and breaths.
- After five cycles (about two minutes) of CPR, if there is no response and an AED is available, apply it and follow the prompts. Use pediatric pads if available. If pediatric pads aren't available, use adult pads.

Continue until the child moves or help arrives.

To perform CPR on a baby

Most cardiac arrests in infants occur from lack of oxygen, such as from drowning or choking. If you know the infant has an airway obstruction,

perform first aid for choking. If you don't know why the infant isn't breathing, perform CPR.

To begin, assess the situation. Stroke the baby and watch for a response, such as movement, but don't shake the child.

If there's no response, follow the ABC procedures below and time the call for help as follows:

- If you're the only rescuer and CPR is needed, do CPR for two minutes — about five cycles — before calling 911 or your local emergency number.
- If another person is available, have that person call for help immediately while you attend to the baby.

AIRWAY: Clear the airway

1. Place the baby on his or her back on a firm, flat surface, such as a table. The floor or ground also will do.
2. Gently tip the head back by lifting the chin with one hand and pushing down on the forehead with the other hand.
3. In no more than 10 seconds, put your ear near the baby's mouth and check for breathing: Look for chest motion, listen for breath sounds, and feel for breath on your cheek and ear.

If the infant isn't breathing, begin mouth-to-mouth breathing immediately.

BREATHING: Breathe for the infant

1. Cover the baby's mouth and nose with your mouth.
2. Prepare to give two rescue breaths. Use the strength of your cheeks to deliver gentle puffs of air (instead of deep breaths from your lungs) to slowly breathe into the baby's mouth one time, taking one second for the breath. Watch to see if the baby's chest rises. If it does, give a second rescue breath. If the chest does not rise, repeat the head-tilt, chin-lift maneuver and then give the second breath.
3. If the chest still doesn't rise, examine the mouth to make sure no foreign material is inside. If the object is seen, sweep it out with your finger. If the airway seems blocked, perform first aid for a choking infant.
4. Begin chest compressions to restore circulation.

CIRCULATION: Restore blood circulation

1. Imagine a horizontal line drawn between the baby's nipples. Place two fingers of one hand just below this line, in the center of the chest.

2. Gently compress the chest to about one-third to one-half the depth of the chest.
3. Count aloud as you pump in a fairly rapid rhythm. You should pump at a rate of about 100 to 120 pumps a minute.
4. Give two breaths after every 30 chest compressions.
5. Perform CPR for about two minutes before calling for help unless someone else can make the call while you attend to the baby.
6. Continue CPR until you see signs of life or until a professional relieves you.

CHEMICAL BURNS

If a chemical burns the skin, follow these steps:

1. **Remove the cause of the burn** by flushing the chemicals off the skin surface with cool, running water for 20 minutes or more. If the burning chemical is a powder-like substance, such as lime, brush it off the skin before flushing.
2. **Remove clothing or jewelry** that has been contaminated by the chemical.
3. **Apply a cool, wet cloth or towel** to relieve pain.
4. **Wrap the burned area loosely** with a dry, sterile dressing or a clean cloth.
5. **Rewash the burned area** for several more minutes if the person experiences increased burning after the initial washing.

Minor chemical burns usually heal without further treatment.

Seek emergency medical assistance if:

- The victim has signs of shock, such as fainting, pale complexion or breathing in a notably shallow manner.
- The chemical burn penetrated through the first layer of skin, and the resulting second-degree burn covers an area more than 3 inches in diameter.
- The chemical burn occurred on the eye, hands, feet, face, groin or buttocks, or over a major joint.
- The victim has pain that cannot be controlled with over-the-counter pain relievers such as acetaminophen (Tylenol, others) or ibuprofen (Advil, Motrin, others).

If you're unsure whether a substance is toxic, call the poison control center at 800-222-1222. If you seek emergency assistance, bring the chemical container or a complete description of the substance with you for identification.

CORNEAL ABRASION

The most common types of eye injury involve the cornea — the clear, protective "window" at the front of your eye. Contact with dust, dirt, sand, wood shavings, metal particles or even an edge of a piece of paper can scratch or cut the cornea. Usually the scratch is superficial, and this is called a corneal abrasion. Some corneal abrasions become infected and result in a corneal ulcer, which is a serious problem.

Everyday activities can lead to corneal abrasions. Examples are playing sports, doing home repairs or being scratched by children who accidentally brush your cornea with a fingernail. Other common injuries to the cornea include splash accidents — contact with chemicals ranging from antifreeze to household cleaners.

Because the cornea is extremely sensitive, abrasions can be painful. If your cornea is scratched, you might feel like you have sand in your eye. Tears, blurred vision, increased sensitivity or redness around the eye can suggest a corneal abrasion. You may get a headache.

In case of injury, seek prompt medical attention. Other immediate steps you can take for a corneal abrasion are to:

- **Use saline solution, if available, or clean water to rinse the eye.** Use an eyecup or small, clean glass positioned with its rim resting on the bone at the base of your eye socket. If your work site has an eye-rinse station, use it. Rinsing the eye may wash out an offending foreign body.
- **Blink several times.** This movement may remove small particles of dust or sand.
- **Pull the upper eyelid over the lower eyelid.** The lashes of your lower eyelid can brush a foreign body from the undersurface of your upper eyelid.

Take caution to avoid certain actions that may aggravate the injury:

- **Don't try to remove an object** that's embedded in your eyeball. Also avoid trying to remove a large object that makes closing the eye difficult.
- **Don't rub your eye after an injury.** Touching or pressing on your eye can worsen a corneal abrasion.
- **Don't touch your eyeball** with tweezers, cotton swabs or other instruments. This can aggravate a corneal abrasion.

CHEMICAL SPLASH IN THE EYE

If a chemical splashes into your eye, take these steps immediately:

1. **Flush your eye with water.** Use clean, lukewarm tap water for at least 20 minutes, and use whichever of these approaches is quickest:
    - Put your head down and turn it to the side. Then hold your affected eye open under a gently running faucet.
    - Young children may do best if they lie down in the bathtub or lean back over a sink while you pour a gentle stream of water on the forehead over the affected eye or on the bridge of the nose for both eyes. Remember to flush for at least 20 minutes no matter which method you choose.
2. **Wash your hands with soap and water.** Thoroughly rinse your hands to be sure no chemical or soap is left on them. Your first goal is to get the chemical off the surface of your eye, but then you need to make sure to remove the chemical from your hands.
3. **Remove contact lenses.** If they didn't come out during the flush, then take them out.

Caution:

- Don't rub the eye — this may cause further damage.
- Don't put anything except water or contact lens saline rinse in the eye, and don't use eyedrops unless emergency personnel tell you to do so.

Seek emergency medical assistance

After following the above steps, seek emergency care or, if necessary, call 911. Take the chemical container or the name of the chemical with you to the emergency department. If readily available, wear sunglasses because your eyes will be sensitive to light.

CHEST PAIN

Causes of chest pain can vary from minor problems, such as indigestion or stress, to serious medical emergencies, such as a heart attack or pulmonary embolism. The specific cause of chest pain is often difficult to interpret. As with other sudden, unexplained pains, chest pain may be a signal for you to get medical help. Use the following information to help you determine whether your chest pain is a medical emergency.

<u>Heart attack</u>

A heart attack occurs when an artery that supplies oxygen to your heart muscle becomes blocked. A heart attack generally causes chest pain that lasts longer than 15 minutes. But a heart attack can also be silent and produce no signs or symptoms.

Many people who suffer a heart attack have warning symptoms hours, days or weeks in advance. The earliest predictor of an attack may be recurrent chest pain that's triggered by exertion and relieved by rest.

Someone having a heart attack may experience any or all of the following:

- Uncomfortable pressure, fullness or squeezing pain in the center of the chest lasting more than a few minutes
- Pain spreading to the shoulders, neck or arms
- Lightheadedness, fainting, sweating, nausea or shortness of breath

If you or someone else may be having a heart attack:

- **Dial 911 or call for emergency medical assistance.** Don't "tough out" the symptoms of a heart attack for more than five minutes. If you don't have access to emergency medical services, have someone such as a neighbor or friend drive you to the nearest hospital. Drive yourself only as a last resort, if there are absolutely no other options. Driving yourself puts you and others at risk if your condition suddenly worsens.
- **Chew a regular-strength aspirin.** Aspirin can inhibit blood clotting. However, you shouldn't take aspirin if you're allergic to aspirin, have bleeding problems or your doctor previously told you not to do so.
- **Take nitroglycerin, if prescribed.** If you think you're having a heart attack and your doctor has previously prescribed nitroglycerin for you, take it as directed. Do not take anyone else's nitroglycerin.
- **Begin CPR.** If the person suspected of having a heart attack is unconscious, a 911 dispatcher or another emergency medical specialist may advise you to begin cardiopulmonary resuscitation (CPR). Even if you're not trained, a dispatcher can instruct you in CPR until help arrives.

Pulmonary embolism

An embolus is an accumulation of foreign material — usually a blood clot — that blocks an artery. Tissue death occurs when the tissue supplied by the blocked artery is damaged by the sudden loss of blood. Pulmonary embolism describes the condition that occurs when a clot — usually from the veins of your leg or pelvis — lodges in an artery of your lung.

Signs and symptoms of pulmonary embolism include:

- Sudden, sharp chest pain that begins or worsens with a deep breath or a cough, often accompanied by shortness of breath
- Sudden, unexplained shortness of breath, even without pain
- Cough that may produce blood-streaked sputum
- Rapid heartbeat
- Anxiety and excessive perspiration

As with a suspected heart attack, dial 911 or call for emergency medical assistance immediately.

Pneumonia with pleurisy

Frequent signs and symptoms of pneumonia are chest pain accompanied by chills, fever and a cough that may produce bloody or foul-smelling sputum. When pneumonia occurs with an inflammation of the membranes that surround the lung (pleura), you may have considerable chest discomfort when inhaling or coughing. This condition is called pleurisy.

One sign of pleurisy is that the pain is usually relieved temporarily by holding your breath or putting pressure on the painful area of your chest. This is not true of a heart attack. See your doctor if a cough and a fever or chills accompany your chest pain. Pleurisy alone, however, isn't a medical emergency.

Chest wall pain

One of the most common varieties of harmless chest pain is chest wall pain. One kind of chest wall pain is costochondritis. It consists of pain and tenderness in and around the cartilage that connects your ribs to your breastbone (sternum).

Often, placing pressure over a few points along the margin of the sternum results in considerable tenderness limited to those small areas. If the pressure of a finger duplicates your chest pain, you probably can conclude that a serious cause of chest pain, such as a heart attack, isn't responsible.

Other causes of chest pain include:

- Strained chest muscles from overuse or excessive coughing
- Chest muscle bruising from minor trauma
- Acute anxiety with rapid breathing
- Pain from the gastrointestinal tract, such as esophageal reflux, peptic ulcer pain, or gallbladder pain.

CHOKING

Choking occurs when a foreign object becomes lodged in the throat or windpipe, blocking the flow of air. In adults, a piece of food often is the culprit. Young children often swallow small objects. Because choking cuts off oxygen to the brain, administer first aid as quickly as possible. The universal sign for choking is hands clutched to the throat. If the person doesn't give the signal, look for these indications:

- Inability to talk
- Difficulty breathing or noisy breathing
- Inability to cough forcefully
- Skin, lips and nails turning blue or dusky
- Loss of consciousness

If choking is occurring, the Red Cross recommends a **"five-and-five"** approach to delivering first aid:

- **First**, deliver five back blows between the person's shoulder blades with the heel of your hand.
- **Next**, perform five abdominal thrusts (also known as the **Heimlich maneuver**).
- **Alternate** between five back blows and five abdominal thrusts until the blockage is dislodged.

If you're the only rescuer, perform back blows and abdominal thrusts before calling 911 (or your local emergency number) for help. If another person is available, have that person call for help while you perform first aid.

To perform abdominal thrusts (Heimlich maneuver) on someone else:

- **Stand behind the person.** Wrap your arms around the waist. Tip the person forward slightly.
- **Make a fist with one hand.** Position it slightly above the person's navel.
- **Grasp the fist with the other hand.** Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
- **Perform a total of five abdominal thrusts**, if needed. If the blockage still isn't dislodged, repeat the "five-and-five" cycle.

If you're alone and choking, you'll be unable to effectively deliver back blows to yourself. However, you can still perform abdominal thrusts to dislodge the item.

To perform abdominal thrusts (Heimlich maneuver) on yourself:

- **Place a fist** slightly above your navel.
- **Grasp your fist** with the other hand and bend over a hard surface — a countertop or chair will do.

- **Shove your fist** inward and upward.

Clearing the airway of a pregnant woman or obese person:

- **Position your hands a little bit higher** than with a normal Heimlich maneuver, at the base of the breastbone, just above the joining of the lowest ribs.
- **Proceed as with the Heimlich maneuver,** pressing hard into the chest, with a quick thrust.
- **Repeat** until the food or other blockage is dislodged or the person becomes unconscious.

Clearing the airway of an unconscious person:

- **Lower the person** on his or her back onto the floor.
- **Clear the airway.** If there's a visible blockage at the back of the throat or high in the throat, reach a finger into the mouth and sweep out the cause of the blockage. Be careful not to push the food or object deeper into the airway, which can happen easily in young children.
- **Begin cardiopulmonary resuscitation (CPR)** if the object remains lodged and the person doesn't respond after you take the above measures. The chest compressions used in CPR may dislodge the object. Remember to recheck the mouth periodically.

Clearing the airway of a choking infant younger than age 1:

- **Assume a seated position and hold the infant face down** on your forearm, which is resting on your thigh.
- **Thump the infant gently but firmly** five times on the middle of the back using the heel of your hand. The combination of gravity and the back blows should release the blocking object.
- **Hold the infant face up on your forearm** with the head lower than the trunk if the above doesn't work. Using two fingers placed at the center of the infant's breastbone, give five quick chest compressions.
- **Repeat the back blows and chest thrusts** if breathing doesn't resume. Call for emergency medical help.
- **Begin infant CPR** if one of these techniques opens the airway but the infant doesn't resume breathing.

If the child is older than age 1, give abdominal thrusts only.

To prepare yourself for these situations, learn the Heimlich maneuver and CPR in a certified first-aid training course.

CUTS AND SCRAPES

Minor cuts and scrapes usually don't require a trip to the emergency room. Yet proper care is essential to avoid infection or other complications. These guidelines can help you care for simple wounds:

1. **Stop the bleeding.** Minor cuts and scrapes usually stop bleeding on their own. If they don't, apply gentle pressure with a clean cloth or bandage. Hold the pressure continuously for 20 to 30 minutes. Don't keep checking to see if the bleeding has stopped because this may damage or dislodge the fresh clot that's forming and cause bleeding to resume. If the blood spurts or continues to flow after continuous pressure, seek medical assistance.
2. **Clean the wound.** Rinse out the wound with clear water. Soap can irritate the wound, so try to keep it out of the actual wound. If dirt or debris remains in the wound after washing, use tweezers cleaned with alcohol to remove the particles. If debris remains embedded in the wound after cleaning, see your doctor. Thorough wound cleaning reduces the risk of infection and tetanus. To clean the area around the wound, use soap and a washcloth. There's no need to use hydrogen peroxide, iodine or an iodine-containing cleanser.
3. **Apply an antibiotic.** After you clean the wound, apply a thin layer of an antibiotic cream or ointment such as Neosporin or Polysporin to help keep the surface moist. The products don't make the wound heal faster, but they can discourage infection and allow your body's healing process to close the wound more efficiently. Certain ingredients in some ointments can cause a mild rash in some people. If a rash appears, stop using the ointment.
4. **Cover the wound.** Bandages can help keep the wound clean and keep harmful bacteria out. After the wound has healed enough to make infection unlikely, exposure to the air will speed wound healing.
5. **Change the dressing.** Change the dressing at least daily or whenever it becomes wet or dirty. If you're allergic to the adhesive used in most bandages, switch to adhesive-free dressings or sterile gauze held in place with paper tape, gauze roll or a loosely applied elastic bandage. These supplies generally are available at pharmacies.
6. **Get stitches for deep wounds.** A wound that is more than 1/4 inch (6 millimeters) deep or is gaping or jagged edged and has fat or muscle protruding usually requires stitches. A strip or two of surgical tape may hold a minor cut together, but if you can't easily close the mouth of the wound, see your doctor as soon as possible. Proper closure within a few hours reduces the risk of infection.
7. **Watch for signs of infection.** See your doctor if the wound isn't healing or you notice any redness, increasing pain, drainage, warmth or swelling.
8. **Get a tetanus shot.** Doctors recommend you get a tetanus shot every 10 years. If your wound is deep or dirty and your last shot was more

than five years ago, your doctor may recommend a tetanus shot booster. Get the booster within 48 hours of the injury.

DISLOCATION

A dislocation is an injury in which the ends of your bones are forced from their normal positions. The cause is usually trauma, such as a blow or fall, but dislocation can be caused by an underlying disease, such as rheumatoid arthritis.

Dislocations are common injuries in contact sports, such as football and hockey, and in sports that may involve falls, such as downhill skiing and volleyball. Dislocations may occur in major joints, such as your shoulder, hip, knee, elbow or ankle or in smaller joints, such as your finger, thumb or toe.

The injury will temporarily deform and immobilize your joint and may result in sudden and severe pain and swelling. A dislocation requires prompt medical attention to return your bones to their proper positions.

If you believe you have dislocated a joint:

1. **Don't delay medical care.** Get medical help immediately.
2. **Don't move the joint.** Until you receive help, splint the affected joint into its fixed position. Don't try to move a dislocated joint or force it back into place. This can damage the joint and its surrounding muscles, ligaments, nerves or blood vessels.
3. **Put ice on the injured joint.** This can help reduce swelling by controlling internal bleeding and the buildup of fluids in and around the injured joint.

ELECTRICAL BURNS

An electrical burn may appear minor or not show on the skin at all, but the damage can extend deep into the tissues beneath your skin. If a strong electrical current passes through your body, internal damage, such as a heart rhythm disturbance or cardiac arrest, can occur. Sometimes the jolt associated with the electrical burn can cause you to be thrown or to fall, resulting in fractures or other associated injuries.

Dial 911 or call for emergency medical assistance if the person who has been burned is in pain, is confused, or is experiencing changes in his or breathing, heartbeat or consciousness.

While helping someone with an electrical burn and waiting for medical help, follow these steps:

1. **Look first. Don't touch.** The person may still be in contact with the electrical source. Touching the person may pass the current through you.
2. **Turn off the source of electricity if possible.** If not, move the source away from both you and the injured person using a dry nonconducting object made of cardboard, plastic or wood.
3. **Check for signs of circulation (breathing, coughing or movement).** If absent, begin cardiopulmonary resuscitation (CPR) immediately.
4. **Prevent shock.** Lay the person down with the head slightly lower than the trunk and the legs elevated.
5. **Cover the affected areas.** If the person is breathing, cover any burned areas with a sterile gauze bandage, if available, or a clean cloth. Don't use a blanket or towel. Loose fibers can stick to the burns.

ELECTRICAL SHOCK

The danger from an electrical shock depends on how high the voltage is, how the current traveled through the body, the person's overall health and how quickly the person is treated.

Call 911 immediately if any of these signs or symptoms occur:

- Cardiac arrest
- Heart rhythm problems (arrhythmias)
- Respiratory failure
- Muscle pain and contractions
- Seizures
- Numbness and tingling
- Unconsciousness

While waiting for medical help, follow these steps:

1. **Look first. Don't touch.** The person may still be in contact with the electrical source. Touching the person may pass the current through you.
2. **Turn off the source of electricity if possible.** If not, move the source away from you and the affected person, using a nonconducting object made of cardboard, plastic or wood.
3. **Check for signs of circulation (breathing, coughing or movement).** If absent, begin cardiopulmonary resuscitation (CPR) immediately.
4. **Prevent shock.** Lay the person down and, if possible, position the head slightly lower than the trunk, with the legs elevated.

Caution

- **Don't touch the person with your bare hands** if he or she is still in contact with the electrical current.
- **Don't get near high-voltage wires** until the power is turned off. Stay at least 20 feet away — farther if wires are jumping and sparking.
- **Don't move a person** with an electrical injury unless the person is in immediate danger.

FAINTING

Fainting occurs when the blood supply to your brain is momentarily inadequate, causing you to lose consciousness. This loss of consciousness is usually brief.

Fainting can have no medical significance, or the cause can be a serious disorder. Therefore, treat loss of consciousness as a medical emergency until the signs and symptoms are relieved and the cause is known.

If you feel faint:

- Lie down or sit down.
- If you sit down, place your head between your knees.

Discuss recurrent fainting spells with your doctor.

If someone else faints:

1. **Position the person on his or her back.** Elevate the legs above heart level — about 12 inches (30 centimeters), if possible.
2. **Check the person's airway to be sure it's clear.** Watch for vomiting.
3. **Check for signs of circulation (breathing, coughing or movement).** If absent, begin CPR. Call 911 or your local emergency number. Continue CPR until help arrives or the person responds and begins to breathe.
4. **Help restore blood flow.** If the person is breathing, restore blood flow to the brain by raising the person's legs above the level of the head. Loosen belts, collars or other constrictive clothing. The person should revive quickly. If the person doesn't regain consciousness within one minute, dial 911 or call for emergency medical assistance.

If the person was injured in a fall associated with a faint, treat any bumps, bruises or cuts appropriately. Control bleeding with direct pressure.

FEVER
Fever is one of your body's reactions to infection. What's normal for you may be a little higher or lower than the average temperature of 98.6 F. But a rectal temperature higher than 100.4°F is always considered a fever. A rectal temperature reading is generally 1 degree F higher than an oral reading.

For very young children and infants, even slightly elevated temperatures may indicate a serious infection. In newborns, a subnormal temperature — rather than a fever — also may be a sign of serious illness.

Don't treat fevers below 102°F with any medications unless advised to do so by your doctor. If you have a fever of 102°F or higher, your doctor may suggest taking an over-the-counter medication, such as acetaminophen (Tylenol, others) or ibuprofen (Advil, Motrin, others). Adults may also use aspirin. But don't give aspirin to children. It may trigger a rare, but potentially fatal, disorder known as Reye's syndrome. Also, don't give ibuprofen to infants younger than 6 months of age.

How to take a temperature
You can choose from several types of thermometers. Today most have digital readouts. Some take the temperature quickly from the ear canal and can be especially useful for young children and older adults. Other thermometers can be used rectally, orally or under the arm. If you use a digital thermometer, be sure to read the instructions so you know what the beeps mean and when to read the thermometer. Under normal circumstances, temperatures tend to be highest around 4 p.m. and lowest around 4 a.m.

Because of the potential for mercury exposure or ingestion, glass mercury thermometers have been phased out and are no longer recommended.

Rectally (for infants)
To take your child's temperature rectally:

- Place a dab of petroleum jelly or other lubricant on the bulb.
- Lay your child on his or her stomach.
- Carefully insert the bulb one-half inch to one inch into the rectum.
- Hold the bulb and child still for three minutes. To avoid injury, don't let go of the thermometer while it's inside your child.
- Remove and read the temperature as recommended by the manufacturer.
- A rectal temperature reading is generally 1 degree F higher than a simultaneously taken oral reading.

Taking a rectal temperature is also an option for older adults when taking an oral temperature is not possible.

Orally
To take your temperature orally:

- Place the bulb under your tongue.
- Close your mouth for the recommended amount of time, usually three minutes.

Under the arm (axillary)
Although it's not the most accurate way to take a temperature, you can also use an oral thermometer for an armpit reading:

- Place the thermometer under your arm with your arm down.
- Hold your arms across your chest.
- Wait five minutes or as recommended by your thermometer's manufacturer. Then remove the thermometer and read the temperature.
- An axillary reading is generally 1 degree F less than an oral reading.

To take your child's axillary temperature, sit your child in your lap with your child facing to the side. Place the thermometer under your child's near arm, which should be against your chest.

Get medical help for a fever in these cases:

- If a baby is younger than 3 months of age and has a rectal temperature of 100.4 F or higher. Even if your baby doesn't have other signs or symptoms, call your doctor just to be safe.
- If a baby is older than 3 months of age and has a temperature of 102 F or higher.
- If a newborn has a lower than normal temperature — less than 97 F rectally.
- If a child younger than age 2 has a fever for more than one day, or a child age 2 or older has a fever for more than three days. If your child has a fever after being left in a very hot car, seek medical care immediately.
- If an adult has a temperature of more than 103 F or has had a fever for more than three days.

Call your doctor immediately if any of these signs or symptoms accompanies a fever:

- A severe headache
- Severe swelling of the throat

- Unusual skin rash
- Unusual eye sensitivity to bright light
- A stiff neck and pain when the head is bent forward
- Mental confusion
- Persistent vomiting
- Difficulty breathing or chest pain
- Extreme listlessness or irritability
- Abdominal pain or pain when urinating
- Any other unexplained symptoms

When reporting a fever to your doctor, don't attempt to convert from a rectal reading to an oral reading. It's simpler to just report what the reading was and how you took it.

FIRST-AID KITS

A well-stocked first-aid kit can help you respond effectively to common injuries and emergencies. Keep at least one first-aid kit in your home and one in your car. Store your kits in easy-to-retrieve locations that are out of the reach of young children. Children old enough to understand the purpose of the kits should know where they are stored.

You can purchase first-aid kits at many drugstores or assemble your own. Contents of a first-aid kit should include:

Basic supplies

- Adhesive tape
- Aluminum finger splints
- Antibiotic ointment
- Antiseptic solution or towelettes
- Bandages, including a roll of elastic wrap (Ace, Coban, others) and bandage strips (Band-Aid, Curad, others) in assorted sizes
- Instant cold packs
- Cotton balls and cotton-tipped swabs
- Disposable latex or synthetic gloves, at least two pair
- Gauze pads and roller gauze in assorted sizes
- Eye goggles
- First-aid manual
- Petroleum jelly or other lubricant
- Plastic bags for the disposal of contaminated materials
- Safety pins in assorted sizes
- Save-A-Tooth storage device containing salt solution and a travel case

- Scissors, tweezers and a needle
- Soap or instant hand sanitizer
- Sterile eyewash, such as a saline solution
- Thermometer
- Triangular bandage
- Turkey baster or other bulb suction device for flushing out wounds

Medications

- Activated charcoal (use only if instructed by your poison control center)
- Anti-diarrhea medication
- Over-the-counter oral antihistamine (Benadryl, others)
- Aspirin and nonaspirin pain relievers (never give aspirin to children)
- Calamine lotion
- Over-the-counter hydrocortisone cream
- Personal medications
- If prescribed by your doctor, drugs to treat an allergic attack, such as an auto-injector of epinephrine (EpiPen)
- Syringe, medicine cup or spoon

Emergency items

- Cell phone and recharger that utilizes the accessory plug in your car dash
- Emergency phone numbers, including contact information for your family doctor and pediatrician, local emergency services, emergency road service providers and the regional poison control center
- Small, waterproof flashlight and extra batteries
- Candles and matches for cold climates
- Sunscreen
- Mylar emergency blanket
- First-aid instruction manual

Give your kit a checkup

Check your first-aid kits regularly, at least every three months, to be sure the flashlight batteries work and to replace supplies that have expired.

In addition, take a first-aid course to prepare for a possible medical emergency. Be sure the course covers cardiopulmonary resuscitation (CPR) and how to use an automatic external defibrillator (AED). Renew your CPR certification at least every two years.

FOOD-BORNE ILLNESS

All foods naturally contain small amounts of bacteria. But poor handling of food, improper cooking or inadequate storage can result in bacteria multiplying in large enough numbers to cause illness.

Parasites, viruses, toxins and chemicals also can contaminate food. Food-borne illness from these sources, however, is less common than food-borne illness caused by bacteria.

Signs and symptoms of food poisoning vary with the source of contamination. Generally diarrhea, nausea, abdominal pain and, sometimes, vomiting occur within hours after eating contaminated food.

Whether you become ill after eating contaminated food depends on the organism, the amount of exposure, your age and your health. High-risk groups include:

- **Older adults.** As you get older, your immune system may not respond as quickly and as effectively to infectious organisms as when you were younger.
- **Infants and young children.** Their immune systems haven't fully developed.
- **People with chronic diseases.** Having a chronic condition, such as diabetes or AIDS, or receiving chemotherapy or radiation therapy for cancer reduces your immune response.

If you develop food poisoning:

- Rest and drink plenty of liquids
- Don't use anti-diarrheal medications because they may slow elimination of bacteria from your system

Food-borne illness often improves on its own within 48 hours. Call your doctor if you feel ill for longer than two or three days or if blood appears in your stools.

Dial 911 or call for emergency medical assistance if:

- You have severe symptoms, such as watery diarrhea that turns very bloody within 24 hours.
- You belong to a high-risk group.
- You suspect botulism poisoning. Botulism is a potentially fatal food poisoning that results from the ingestion of a toxin formed by certain spores in food. Botulism toxin is most often found in home-canned foods, especially green beans and tomatoes. Signs and symptoms usually begin 12 to 36 hours after eating the contaminated food and

may include headache, blurred vision, muscle weakness and eventual paralysis. Some people also have nausea and vomiting, constipation, urinary retention, difficulty breathing and dry mouth. These signs and symptoms require immediate medical attention.

FOREIGN OBJECT IN THE EAR

A foreign object in the ear can cause pain and hearing loss. Usually you know if an object is stuck in your ear, but small children may not be aware of it.

If an object becomes lodged in the ear, follow these steps:

- **Don't probe the ear with a tool.** Don't attempt to remove the foreign object by probing with a cotton swab, matchstick or any other tool. To do so is to risk pushing the object farther into the ear and damaging the fragile structures of the middle ear.
- **Remove the object if possible.** If the object is clearly visible, pliable and can be grasped easily with tweezers, gently remove it.
- **Try using gravity.** Tilt the head to the affected side to try to dislodge the object.
- **Try using oil for an insect.** If the foreign object is an insect, tilt the person's head so that the ear with the offending insect is upward. Try to float the insect out by pouring mineral oil, olive oil or baby oil into the ear. The oil should be warm but not hot. As you pour the oil, you can ease the entry of the oil by straightening the ear canal. Pull the earlobe gently backward and upward for an adult, backward and downward for a child. The insect should suffocate and may float out in the oil bath.
- **Don't use oil to remove any object other than an insect.** Do not use this method if there is any suspicion of a perforation in the eardrum — pain, bleeding or discharge from the ear.

If these methods fail or the person continues to experience pain in the ear, reduced hearing or a sensation of something lodged in the ear, seek medical assistance.

FOREIGN OBJECT IN THE EYE

If you get a foreign object in the eye, try to flush it out with clean water or saline solution. Use an eyecup or a small, clean glass positioned with its rim resting on the bone at the base of your eye socket.

To help someone else:

1. Wash your hands.
2. Seat the person in a well-lighted area.

3. Gently examine the eye to find the object. Pull the lower lid down and ask the person to look up. Then hold the upper lid while the person looks down.
4. If the object is floating in the tear film on the surface of the eye, try flushing it out. If you're able to remove the object, flush the eye with a saline solution or clean, lukewarm water.

Caution

- Don't try to remove an object that's imbedded in the eyeball.
- Don't rub the eye.
- Don't try to remove a large object that makes closing the eye difficult.

When to call for help

Seek emergency medical assistance when:

- You can't remove the object.
- The object is imbedded in the eyeball.
- The person with the object in the eye is experiencing abnormal vision.
- Pain, redness or the sensation of a foreign body in the eye persists after the object is removed.

FOREIGN OBJECT IN THE NOSE

If a foreign object becomes lodged in your nose:

- **Don't probe at the object** with a cotton swab or other tool.
- **Don't try to inhale the object** by forcefully breathing in. Instead, breathe through your mouth until the object is removed.
- **Blow your nose gently** to try to free the object, but don't blow hard or repeatedly. If only one nostril is affected, close the opposite nostril by applying gentle pressure and then blow out gently through the affected nostril.
- **Gently remove the object** if it's visible and you can easily grasp it with tweezers. Don't try to remove an object that isn't visible or easily grasped.
- **Call for emergency medical assistance** or go to your local emergency room if these methods fail.

FOREIGN OBJECT IN THE SKIN

If a foreign object is **projecting from** your skin:

- **Wash your hands and clean the area well** with soap and water.
- **Use tweezers** to remove splinters of wood or fiberglass, small pieces of glass or other foreign objects.

If the object is completely **embedded in** your skin:

- **Wash your hands and clean the area well** with soap and water.
- **Sterilize a clean, sharp needle** by wiping it with rubbing alcohol. If rubbing alcohol isn't available, clean the needle with soap and water.
- **Use the needle to break the skin** over the object and gently lift the tip of the object out.
- **Use tweezers** to remove the object. A magnifying glass may help you see the object better.
- **Wash and pat-dry the area.** Follow by applying antibiotic ointment.
- **Seek medical help** if the particle doesn't come out easily or is close to your eye.

FOREIGN OBJECT INHALED

If you or your child inhales a foreign object, see your doctor. If the inhaled object causes choking, the American Red Cross recommends the **"five-and-five"** approach to delivering first aid:

- **First**, deliver five back blows between the victim's shoulder blades with the heel of your hand.
- **Next**, perform five abdominal thrusts (also known as the **Heimlich maneuver**).
- **Alternate** between five back blows and five abdominal thrusts until the blockage is dislodged.

If you're the only rescuer, perform back blows and abdominal thrusts before calling 911 or your local emergency number for help. If another person is available, have that person call for help while you perform first aid.

FOREIGN OBJECT SWALLOWED

If you swallow a foreign object, it will usually pass through your digestive system uneventfully. But some objects can lodge in your esophagus, the tube that connects your throat and stomach. If an object is stuck in your esophagus, you may need to remove it, especially if it is:

- A pointed object, which should be removed as quickly as possible to avoid further injury to the esophageal lining
- A tiny watch- or calculator-type button battery, which can rapidly cause local tissue injury and should be removed from the esophagus without delay

If a swallowed object blocks the airway, the American Red Cross recommends the **"five-and-five"** approach to first aid:

- **First**, deliver five back blows between the victim's shoulder blades with the heel of your hand.

- **Next**, perform five abdominal thrusts (also known as the **Heimlich maneuver**).
- **Alternate** between five back blows and five abdominal thrusts until the blockage is dislodged.

Call 911 or your local emergency number for help.

To perform abdominal thrusts (the Heimlich maneuver) on someone else:

- **Stand behind the person.** Wrap your arms around the waist. Tip the person forward slightly.
- **Make a fist with one hand.** Position it slightly above the person's navel.
- **Grasp the fist with the other hand.** Press hard into the abdomen with a quick, upward thrust — as if trying to lift the person up.
- **Perform a total of five abdominal thrusts**, if needed. If the blockage still isn't dislodged, repeat the five-and-five cycle.

You can't perform back blows on yourself. But you can perform abdominal thrusts.

To perform abdominal thrusts (the Heimlich maneuver) on yourself:

- **Place a fist** slightly above your navel.
- **Grasp your fist** with the other hand and bend over a hard surface — a countertop or chair will do.
- **Shove your fist** inward and upward.

FRACTURES (broken bones)
A fracture is a broken bone. It requires medical attention. If the broken bone is the result of major trauma or injury, call 911 or your local emergency number. Also call for emergency help if:

- The person is unresponsive, isn't breathing or isn't moving. Begin cardiopulmonary resuscitation (CPR) if there's no respiration or heartbeat.
- There is heavy bleeding.
- Even gentle pressure or movement causes pain.
- The limb or joint appears deformed.
- The bone has pierced the skin.
- The extremity of the injured arm or leg, such as a toe or finger, is numb or bluish at the tip.
- You suspect a bone is broken in the neck, head or back.

- You suspect a bone is broken in the hip, pelvis or upper leg (for example, the leg and foot turn outward abnormally).

Take these actions immediately while waiting for medical help:

- **Stop any bleeding.** Apply pressure to the wound with a sterile bandage, a clean cloth or a clean piece of clothing.
- **Immobilize the injured area.** Don't try to realign the bone, but if you've been trained in how to splint and professional help isn't readily available, apply a splint to the area.
- **Apply ice packs to limit swelling and help relieve pain until emergency personnel arrive.** Don't apply ice directly to the skin — wrap the ice in a towel, piece of cloth or some other material.
- **Treat for shock.** If the person feels faint or is breathing in short, rapid breaths, lay the person down with the head slightly lower than the trunk and, if possible, elevate the legs.

FROSTBITE

When exposed to very cold temperatures, skin and underlying tissues may freeze, resulting in frostbite. The areas most likely to be affected by frostbite are your hands, feet, nose and ears.

You can identify frostbite by the hard, pale and cold quality of skin that has been exposed to the cold. As the area thaws, the flesh becomes red and painful.

If your fingers, ears or other areas suffer frostbite:

- **Get out of the cold.**
- **Warm your hands** by tucking them under your arms. If your nose, ears or face is frostbitten, warm the area by covering it with dry, gloved hands.
- **Don't rub the affected area.** Never rub snow on frostbitten skin.
- **If there's any chance of refreezing, don't thaw out the affected areas.** If they're already thawed out, wrap them up so they don't refreeze.
- **Get emergency medical help** if numbness remains during warming. If you can't get help immediately, warm severely frostbitten hands or feet in warm — not hot — water. You can warm other frostbitten areas, such as your nose, cheeks or ears, by covering them with your warm hands or by applying warm cloths.

GASTROENTERITIS

Gastroenteritis is an inflammation of your stomach and intestines. Common causes are:

- Viruses.
- Food or water contaminated by bacteria or parasites.
- Reaction to a new food. Young children may develop signs and symptoms for this reason. Infants who are breast-fed may even react to a change in their mothers' diets.
- Side effect from medications.

Characteristic signs and symptoms include:

- Nausea or vomiting
- Diarrhea
- Abdominal cramps
- Bloating

A low-grade fever may accompany these signs and symptoms. Depending on the cause of the inflammation, symptoms may last from one day to longer than a week.

If you suspect gastroenteritis in yourself:

- **Stop eating and drinking for a few hours** to let your stomach settle.
- **Drink plenty of liquids**, such as Gatorade or water, to prevent dehydration.
- **Ease back into eating.** Gradually begin to eat bland, easy-to-digest foods, such as soda crackers, toast, gelatin, bananas, rice and chicken. Stop eating if your nausea returns. Avoid milk and dairy products, caffeine, alcohol, nicotine, and fatty or highly seasoned foods for a few days.
- **Consider acetaminophen** (Tylenol, others) for relief of discomfort, unless you have liver disease.
- **Get plenty of rest.** The illness and dehydration can make you weak and tired.

Get medical help if:

- Vomiting persists for more than two days.
- Diarrhea persists for longer than several days.
- Diarrhea turns bloody.
- Fever is 101 F or higher.
- Lightheadedness or fainting occurs with standing.
- Confusion develops.
- Worrisome abdominal pain develops.

HEAD PAIN

Most headaches are minor, and you can treat them with a pain reliever. Some head pain, however, signals a dangerous or serious medical problem. Don't ignore unexplained head pain or head pain that steadily worsens. Get medical attention right away if your head pain:

- Develops suddenly and severely
- Accompanies a fever, stiff neck, rash, mental confusion, seizures, changes in vision, dizziness, weakness, loss of balance, numbness or difficulty speaking
- Is severe and follows a recent sore throat or respiratory infection
- Begins or worsens after a head injury, fall or bump
- Is a new pain, and you're older than 50
- Is excruciating and affects just one, reddened eye
- Progressively worsens over the course of a single day, or persists for several days

HEAD TRAUMA

Most head trauma involves injuries that are minor and don't require hospitalization. However, dial 911 or call for emergency medical assistance if any of the following signs are apparent:

- Severe head or facial bleeding
- Bleeding from the nose or ears
- Severe headache
- Change in level of consciousness for more than a few seconds
- Black-and-blue discoloration below the eyes or behind the ears
- Cessation of breathing
- Confusion
- Loss of balance
- Weakness or an inability to use an arm or leg
- Unequal pupil size
- Repeated vomiting
- Slurred speech
- Seizures

If severe head trauma occurs:

- **Keep the person still.** Until medical help arrives, keep the injured person lying down and quiet in a darkened room, with the head and shoulders slightly elevated. Don't move the person unless necessary and avoid moving the person's neck.
- **Stop any bleeding.** Apply firm pressure to the wound with sterile gauze or a clean cloth. But don't apply direct pressure to the wound if you suspect a skull fracture.

- **Watch for changes in breathing and alertness.** If the person shows no signs of circulation (breathing, coughing or movement), begin CPR.

HEAT CRAMPS
Heat cramps are painful, involuntary muscle spasms that usually occur during heavy exercise in hot environments. The spasms may be more intense and more prolonged than typical nighttime leg cramps. Inadequate fluid intake often contributes to heat cramps.

Muscles most often affected include those of your calves, arms, abdominal wall and back, although heat cramps may involve any muscle group involved in exercise.

If you suspect heat cramps:
- Rest briefly and cool down
- Drink clear juice or an electrolyte-containing sports drink
- Practice gentle, range-of-motion stretching and gentle massage of the affected muscle group
- Call your doctor if your cramps don't go away in one hour

HEAT EXHAUSTION
Heat exhaustion is one of the heat-related syndromes, which range in severity from mild heat cramps to heat exhaustion to potentially life-threatening heatstroke.

Signs and symptoms of heat exhaustion often begin suddenly, sometimes after excessive exercise, heavy perspiration and inadequate fluid intake.

Signs and symptoms resemble those of shock and may include:
- Feeling faint or dizzy
- Nausea
- Heavy sweating
- Rapid, weak heartbeat
- Low blood pressure
- Cool, moist, pale skin
- Low-grade fever
- Heat cramps
- Headache
- Fatigue
- Dark-colored urine

If you suspect heat exhaustion:

- Get the person out of the sun and into a shady or air-conditioned location.
- Lay the person down and elevate the legs and feet slightly.
- Loosen or remove the person's clothing.
- Have the person drink cool water.
- Cool the person by spraying or sponging him or her with cool water and fanning.
- Monitor the person carefully. Heat exhaustion can quickly become heatstroke.

If fever greater than 102 F, fainting, confusion or seizures occur, dial 911 or call for emergency medical assistance.

HEATSTROKE

Heatstroke is the most severe of the heat-related problems, often resulting from exercise or heavy work in hot environments combined with inadequate fluid intake.

Young children, older adults, people who are obese and people born with an impaired ability to sweat are at high risk of heatstroke. Other risk factors include dehydration, alcohol use, cardiovascular disease and certain medications.

What makes heatstroke severe and potentially life-threatening is that the body's normal mechanisms for dealing with heat stress, such as sweating and temperature control, are lost. The main sign of heatstroke is a markedly elevated body temperature — generally greater than 104 F (40 C) — with changes in mental status ranging from personality changes to confusion and coma. Skin may be hot and dry — although if heatstroke is caused by exertion, the skin may be moist.

Other signs and symptoms may include:

- Rapid heartbeat
- Rapid and shallow breathing
- Elevated or lowered blood pressure
- Cessation of sweating
- Irritability, confusion or unconsciousness
- Feeling dizzy or lightheaded
- Headache
- Nausea
- Fainting, which may be the first sign in older adults

If you suspect heatstroke:

- Move the person out of the sun and into a shady or air-conditioned space.
- Dial 911 or call for emergency medical assistance.
- Cool the person by covering him or her with damp sheets or by spraying with cool water. Direct air onto the person with a fan or newspaper.
- Have the person drink cool water, if he or she is able.

HUMAN BITES

Human bites can be as dangerous as or even more dangerous than animal bites because of the types of bacteria and viruses contained in the human mouth. If someone cuts his or her knuckles on another person's teeth, as might happen in a fight, this is also considered a human bite.

If you sustain a human bite that breaks the skin:

1. **Stop the bleeding** by applying pressure.
2. **Wash the wound** thoroughly with soap and water.
3. **Apply an antibiotic cream** to prevent infection.
4. **Apply a clean bandage.** If the bite is bleeding, apply pressure directly on the wound using a sterile bandage or clean cloth until the bleeding stops.
5. **Seek emergency medical care.**

If you haven't had a tetanus shot within five years, your doctor may recommend a booster. In this case you should have the booster within 48 hours of the injury.

HYPOTHERMIA

Under most conditions your body maintains a healthy temperature. However, when exposed to cold temperatures or to a cool, damp environment for prolonged periods, your body's control mechanisms may fail to keep your body temperature normal. When more heat is lost than your body can generate, hypothermia can result.

Wet or inadequate clothing, falling into cold water, and even having an uncovered head during cold weather can all increase your chances of hypothermia.

Hypothermia is defined as an internal body temperature less than 95 F. Signs and symptoms include:

- Shivering
- Slurred speech
- Abnormally slow breathing
- Cold, pale skin
- Loss of coordination
- Fatigue, lethargy or apathy
- Confusion or memory loss

Signs and symptoms usually develop slowly. People with hypothermia typically experience gradual loss of mental acuity and physical ability, so they may be unaware that they need emergency medical treatment.

Older adults, infants, young children and people who are very lean are at particular risk. Other people at higher risk of hypothermia include those whose judgment may be impaired by mental illness or Alzheimer's disease and people who are intoxicated, homeless or caught in cold weather because their vehicles have broken down. Other conditions that may predispose people to hypothermia are malnutrition, cardiovascular disease and an underactive thyroid (hypothyroidism).

To care for someone with hypothermia:

1. **Dial 911 or call for emergency medical assistance.** While waiting for help to arrive, monitor the person's breathing. If breathing stops or seems dangerously slow or shallow, begin cardiopulmonary resuscitation (CPR) immediately.
2. **Move the person out of the cold.** If going indoors isn't possible, protect the person from the wind, cover his or her head, and insulate his or her body from the cold ground.
3. **Remove wet clothing.** Replace wet things with a warm, dry covering.
4. **Don't apply direct heat.** Don't use hot water, a heating pad or a heating lamp to warm the victim. Instead, apply warm compresses to the neck, chest wall and groin. Don't attempt to warm the arms and legs. Heat applied to the arms and legs forces cold blood back toward the heart, lungs and brain, causing the core body temperature to drop. This can be fatal.
5. **Don't give the person alcohol.** Offer warm nonalcoholic drinks, unless the person is vomiting.
6. **Don't massage or rub the person.** Handle people with hypothermia gently, because they're at risk of cardiac arrest.

INSECT BITES AND STINGS

Signs and symptoms of an insect bite result from the injection of venom or other substances into your skin. The venom triggers an allergic reaction. The severity of your reaction depends on your sensitivity to the insect venom or substance.

Most reactions to insect bites are mild, causing little more than an annoying itching or stinging sensation and mild swelling that disappear within a day or so. A delayed reaction may cause fever, hives, painful joints and swollen glands. You might experience both the immediate and the delayed reactions from the same insect bite or sting. Only a small percentage of people develop severe reactions (anaphylaxis) to insect venom. Signs and symptoms of a severe reaction include:

- Facial swelling
- Difficulty breathing
- Abdominal pain
- Shock

Bites from bees, wasps, hornets, yellow jackets and fire ants are typically the most troublesome. Bites from mosquitoes, ticks, biting flies and some spiders also can cause reactions, but these are generally milder.

For mild reactions

- **Move to a safe area** to avoid more stings.
- **Scrape or brush off the stinger** with a straight-edged object, such as a credit card or the back of a knife. Wash the affected area with soap and water. Don't try to pull out the stinger. Doing so may release more venom.
- **Apply a cold pack** or cloth filled with ice to reduce pain and swelling.
- **Apply hydrocortisone cream** (0.5 percent or 1 percent), calamine lotion or a baking soda paste — with a ratio of 3 teaspoons baking soda to 1 teaspoon water — to the bite or sting several times a day until your symptoms subside.
- **Take an antihistamine** containing diphenhydramine (Benadryl, Tylenol Severe Allergy) or chlorpheniramine maleate (Chlor-Trimeton, Actifed).

Allergic reactions may include mild nausea and intestinal cramps, diarrhea or swelling larger than 2 inches in diameter at the site. See your doctor promptly if you experience any of these signs and symptoms.

For severe reactions
Severe reactions may progress rapidly. Dial 911 or call for emergency medical assistance if the following signs or symptoms occur**:**

- Difficulty breathing
- Swelling of the lips or throat
- Faintness
- Dizziness
- Confusion
- Rapid heartbeat
- Hives
- Nausea, cramps and vomiting

Take these actions immediately while waiting with an affected person for medical help:

1. **Check for special medications** that the person might be carrying to treat an allergic attack, such as an auto-injector of epinephrine (for example, EpiPen). Administer the drug as directed — usually by pressing the auto-injector against the person's thigh and holding it in place for several seconds. Massage the injection site for 10 seconds to enhance absorption.
2. **Have the person take an antihistamine pill** if he or she is able to do so without choking, after administering epinephrine.
3. **Have the person lie still** on his or her back with feet higher than the head.
4. **Loosen tight clothing** and cover the person with a blanket. Don't give anything to drink.
5. **Turn the person on his or her side** to prevent choking, if there's vomiting or bleeding from the mouth.
6. **Begin CPR**, if there are no signs of circulation (breathing, coughing or movement).

If your doctor has prescribed an auto-injector of epinephrine, read the instructions before a problem develops and also have your household members read them.

MOTION SICKNESS
Any type of transportation can cause motion sickness. It can strike suddenly, progressing from a feeling of uneasiness to a cold sweat, dizziness and then vomiting. Motion sickness usually quiets down as soon as the motion stops. The more you travel, the more easily you'll adjust to being in motion.

You may escape motion sickness by planning ahead. If you're traveling, reserve seats where motion is felt least:

- **By ship,** request a cabin in the front or middle of the ship, or on the upper deck.
- **By plane,** ask for a seat over the front edge of a wing. Once aboard, direct the air vent flow to your face.
- **By train,** take a seat near the front and next to a window. Face forward.
- **By automobile,** drive or sit in the front passenger's seat.

If you're susceptible to motion sickness:

- **Focus on the horizon** or on a distant, stationary object. Don't read.
- **Keep your head still,** while resting against a seat back.
- **Don't smoke** or sit near smokers.
- **Avoid spicy and greasy foods and alcohol.** Don't overeat.
- **Take an over-the-counter antihistamine,** such as meclizine (Antivert, Bonine), or one containing dimenhydrinate (Dramamine) at least 30 to 60 minutes before you travel. Expect drowsiness as a side effect.
- **Consider scopolamine (Transderm Scop),** available in a prescription adhesive patch. Several hours before you plan to travel, apply the patch behind your ear for 72-hour protection.
- **Eat dry crackers** or drink a carbonated beverage to help settle your stomach if you become ill.

NOSEBLEEDS

Nosebleeds are common. Most often they are a nuisance and not a true medical problem. But they can be both.

Among children and young adults, nosebleeds usually originate from the septum, just inside the nose. The septum separates your nasal chambers.
In middle-aged and older adults, nosebleeds can begin from the septum, but they may also begin deeper in the nose's interior. This latter origin of nosebleed is much less common. It may be caused by hardened arteries or high blood pressure. These nosebleeds begin spontaneously and are often difficult to stop. They require a specialist's help.

To take care of a nosebleed:

- **Sit upright and lean forward.** By remaining upright, you reduce blood pressure in the veins of your nose. This discourages further bleeding. Sitting forward will help you avoid swallowing blood, which can irritate your stomach.

- **Pinch your nose.** Use your thumb and index finger and breathe through your mouth. Continue to pinch for five to 10 minutes. This maneuver sends pressure to the bleeding point on the nasal septum and often stops the flow of blood.
- **To prevent re-bleeding after bleeding has stopped,** don't pick or blow your nose and don't bend down until several hours after the bleeding episode. Keep your head higher than the level of your heart.
- **If re-bleeding occurs,** blow out forcefully to clear your nose of blood clots and spray both sides of your nose with a decongestant nasal spray containing oxymetazoline (Afrin, Neo-Synephrine, others). Pinch your nose in the technique described above and call your doctor.

Seek medical care immediately if:

- The bleeding lasts for more than 20 minutes
- The nosebleed follows an accident, a fall or an injury to your head, including a punch in the face that may have broken your nose

For frequent nosebleeds

If you experience frequent nosebleeds, make an appointment with your doctor. You may need to have the blood vessel that's causing your problem cauterized. Cautery is a technique in which the blood vessel is burned with electric current, silver nitrate or a laser. Sometimes your doctor may pack your nose with special gauze or an inflatable latex balloon to put pressure on the blood vessel and stop the bleeding.

Also call your doctor if you are experiencing nasal bleeding and are taking blood thinners, such as aspirin or warfarin (Coumadin). Your doctor may advise adjusting your medication intake.

Using supplemental oxygen administered with a nasal tube (cannula) may increase your risk of nosebleeds. Apply a water-based lubricant to your nostrils and increase the humidity in your home to help relieve nasal bleeding.

POISONING

Many conditions mimic the signs and symptoms of poisoning, including seizures, alcohol intoxication, stroke and insulin reaction. So look for the signs and symptoms listed below if you suspect poisoning, but check with the poison control center at 800-222-1222 (in the United States) before giving anything to the affected person.

Signs and symptoms of poisoning:

- Burns or redness around the mouth and lips, which can result from drinking certain poisons
- Breath that smells like chemicals, such as gasoline or paint thinner
- Burns, stains and odors on the person, on his or her clothing, or on the furniture, floor, rugs or other objects in the surrounding area
- Empty medication bottles or scattered pills
- Vomiting, difficulty breathing, sleepiness, confusion or other unexpected signs

When to call for help:
Call 911 immediately if the person is:

- Drowsy or unconscious
- Having difficulty breathing or has stopped breathing
- Uncontrollably restless or agitated
- Having seizures

If the person seems stable and has no symptoms, but you suspect poisoning, call the poison control center at 800-222-1222. Provide information about the person's symptoms and, if possible, information about what he or she ingested, how much and when.

What to do while waiting for help:

- If the person has been exposed to poisonous fumes, such as carbon monoxide, get him or her into fresh air immediately.
- If the person swallowed the poison, remove anything remaining in the mouth.
- If the suspected poison is a household cleaner or other chemical, read the label and follow instructions for accidental poisoning. If the product is toxic, the label will likely advise you to call the poison control center at 800-222-1222. Also call this 800 number if you can't identify the poison, if it's medication or if there are no instructions.
- Follow treatment directions that are given by the poison control center.
- If the poison spilled on the person's clothing, skin or eyes, remove the clothing. Flush the skin or eyes with cool or lukewarm water, such as by using a shower for 20 minutes or until help arrives.
- Take the poison container (or any pill bottles) with you to the hospital.

What NOT to do
Don't administer ipecac syrup or do anything to induce vomiting. In 2003, the American Academy of Pediatrics advised discarding ipecac in the home, saying there's no good evidence of effectiveness and that it can do more harm than good.

PUNCTURE WOUNDS

A puncture wound doesn't usually cause excessive bleeding. Often the wound seems to close almost instantly. But these features don't mean treatment isn't necessary.

A puncture wound — such as results from stepping on a nail or being stuck with a tack — can be dangerous because of the risk of infection. The object that caused the wound may carry spores of tetanus or other bacteria, especially if the object has been exposed to the soil. Puncture wounds resulting from human or animal bites, including those of domestic dogs and cats, may be especially prone to infection. Puncture wounds on the foot are also more vulnerable to infection.

If the bite was deep enough to draw blood and the bleeding persists, seek medical attention. Otherwise, follow these steps:

1. **Stop the bleeding.** Minor cuts and scrapes usually stop bleeding on their own. If they don't, apply gentle pressure with a clean cloth or bandage. If bleeding persists — if the blood spurts or continues to flow after several minutes of pressure — seek emergency assistance.
2. **Clean the wound.** Rinse the wound well with clear water. A tweezers cleaned with alcohol may be used to remove small, superficial particles. If larger debris still remains more deeply embedded in the wound, see your doctor. Thorough wound cleaning reduces the risk of tetanus. To clean the area around the wound, use soap and a clean washcloth.
3. **Apply an antibiotic.** After you clean the wound, apply a thin layer of an antibiotic cream or ointment (Neosporin, Polysporin) to help keep the surface moist. These products don't make the wound heal faster, but they can discourage infection and allow your body to close the wound more efficiently. Certain ingredients in some ointments can cause a mild rash in some people. If a rash appears, stop using the ointment.
4. **Cover the wound.** Exposure to air speeds healing, but bandages can help keep the wound clean and keep harmful bacteria out.
5. **Change the dressing regularly.** Do so at least daily or whenever it becomes wet or dirty. If you're allergic to the adhesive used in most bandages, switch to adhesive-free dressings or sterile gauze and hypoallergenic paper tape, which doesn't cause allergic reactions. These supplies are generally available at pharmacies.
6. **Watch for signs of infection.** See your doctor if the wound doesn't heal or if you notice any redness, drainage, warmth or swelling.

If the puncture is deep, is in your foot, is contaminated or is the result of an animal or human bite, see your doctor. He or she will evaluate the wound, clean it and, if necessary, close it. If you haven't had a tetanus shot within five years, your doctor may recommend a booster within 48 hours of the injury.

If an animal — especially a stray dog or a wild animal — inflicted the wound, you may have been exposed to rabies. Your doctor may give you antibiotics and suggest initiation of a rabies vaccination series. Report such incidents to county public health officials. If possible, the animal should be confined for 10 days of observation by a veterinarian.

SEVERE BLEEDINGS

A bruise forms when a blow breaks small blood vessels near your skin's surface, allowing a small amount of blood to leak out into the tissues under your skin. The trapped blood appears as a black-and-blue mark. Sometimes, there also are tiny red dots or red splotches.

If your skin isn't broken, you don't need a bandage. You can, however, enhance bruise healing with these simple techniques:

- Elevate the injured area.
- Apply ice or a cold pack several times a day for a day or two after the injury.
- Rest the bruised area, if possible.
- Consider acetaminophen (Tylenol, others) for pain relief.

See your doctor if:

- You have unusually large or painful bruises — particularly if your bruises seem to develop for no known reasons.
- You bruise easily and you're experiencing abnormal bleeding elsewhere, such as from your nose or gums, or you notice blood in your eyes, your stool or your urine.
- You have no history of bruising, but suddenly experience bruises.

These signs and symptoms may indicate a more serious problem, such as a blood-clotting problem or blood-related disease. Bruises accompanied by persistent pain or headache also may indicate a more serious underlying illness and require medical attention.

SHOCK
Shock may result from trauma, heatstroke, allergic reactions, severe infection, poisoning or other causes. Various signs and symptoms appear in a person experiencing shock:

- **The skin is cool and clammy.** It may appear pale or gray.
- **The pulse is weak and rapid.** Breathing may be slow and shallow, or hyperventilation (rapid or deep breathing) may occur. Blood pressure is below normal.
- **The eyes lack luster and may seem to stare.** Sometimes the pupils are dilated.
- **The person may be conscious or unconscious.** If conscious, the person may feel faint or be very weak or confused. Shock sometimes causes a person to become overly excited and anxious.

If you suspect shock, even if the person seems normal after an injury:

- **Dial 911** or call your local emergency number.
- **Have the person lie down** on his or her back with feet higher than the head. If raising the legs will cause pain or further injury, keep him or her flat. Keep the person still.
- **Check for signs of circulation** (breathing, coughing or movement). If absent, begin CPR.
- **Keep the person warm and comfortable.** Loosen belt(s) and tight clothing and cover the person with a blanket. Even if the person complains of thirst, give nothing by mouth.
- **Turn the person on his or her side** to prevent choking if the person vomits or bleeds from the mouth.
- **Seek treatment for injuries**, such as bleeding or broken bones.

SNAKEBITES
Most North American snakes aren't poisonous. Some exceptions include the rattlesnake, coral snake, water moccasin and copperhead.

Excepting the coral snake, these poisonous snakes have slit-like eyes. Their heads are triangular, with a depression, or pit, midway between the eyes and nostrils.

Other characteristics are unique to certain poisonous snakes:

- **Rattlesnakes** make a rattling sound by shaking the rings at the end of their tail.
- **Water moccasins** have a white, cottony lining in their mouth.
- **Coral snakes** have red, yellow and black rings along the length of their body.

To reduce your risk of a snakebite, avoid picking up or playing with any snake. Most snakes usually avoid people if possible and bite only when threatened or surprised.

If you've experienced a snakebite:

- Remain calm
- Don't try to capture the snake
- Immobilize the bitten arm or leg and try to stay as quiet as possible
- Remove jewelry, because swelling tends to progress rapidly
- Apply a loose splint to reduce movement of the affected area, but make sure it is loose enough that it won't restrict blood flow
- Don't use a tourniquet or apply ice
- Don't cut the wound or attempt to remove the venom

Seek medical attention as soon as possible, especially if the bitten area changes color, begins to swell or is painful.

SPIDER BITES

Only a few spiders are dangerous to humans. Two that are present in the contiguous United States and more common in the Southern states are the black widow spider and the brown recluse spider. Both prefer warm climates and dark, dry places where flies are plentiful. They often live in dry, littered, undisturbed areas, such as closets, woodpiles and under sinks.

Black widow spider

The female black widow gives the more serious bite, but its bite is rarely lethal. You can identify this spider by the red hourglass marking on its belly. The bite feels like a pinprick. You may not even know you've been bitten. At first you may notice only slight swelling and faint red marks. Within a few hours, though, intense pain and stiffness begin. Other signs and symptoms of a black widow spider bite include:

- Chills
- Fever
- Nausea
- Severe abdominal pain

Brown recluse spider

You can identify this spider by the violin-shaped marking on its top. The bite produces a mild stinging, followed by local redness and intense pain within eight hours. A fluid-filled blister forms at the site and then sloughs off to leave a deep, enlarging ulcer. Reactions from a brown recluse spider bite vary from

a mild fever and rash to nausea and listlessness. On rare occasions death results, more often in children.

If bitten by a spider
Clean the site of the spider bite well with soap and water. Apply a cool compress over the spider bite location. Aspirin or acetaminophen (Tylenol, others) may be used to relieve minor signs and symptoms in adults. Don't give aspirin to children. Give children acetaminophen instead. Treatment in a medical facility may be necessary for children under 6 years old and for adults with severe signs and symptoms.

If bitten by a brown recluse or black widow spider

1. **If possible, make a positive identification.** If the spider bite is on an arm or a leg, tie a snug bandage above the bite to help slow or halt the venom's spread. Ensure that the bandage is not so tight as to cut off circulation in the arm or the leg.
2. **Use a cold cloth at the spider bite location.** Apply a cloth dampened with cold water or filled with ice.
3. **Seek immediate medical attention.** Treatment for the bite of a black widow may require an anti-venom medication. Doctors may treat a brown recluse spider bite with corticosteroids.

SPINAL INJURY
If you suspect a back or neck (spinal) injury, **do not move the affected person.** Permanent paralysis and other serious complications can result.

Assume a person has a spinal injury if:

- There's evidence of a head injury with an ongoing change in the person's level of consciousness.
- The person complains of severe pain in his or her neck or back.
- The person won't move his or her neck.
- An injury has exerted substantial force on the back or head.
- The person complains of weakness, numbness or paralysis or lacks control of his or her limbs, bladder or bowel.
- The neck or back is twisted or positioned oddly.

If you suspect someone has a spinal injury:

- Dial 911 or call for emergency medical assistance.
- Keep the person still. Place heavy towels on both sides of the neck or hold the head and neck to prevent movement. The goal of first aid for a spinal injury is to keep the person in much the same position as he or she was found.

- Provide as much first aid as possible without moving the person's head or neck. If the person shows no signs of circulation (breathing, coughing or movement), begin CPR, but do not tilt the head back to open the airway. Use your fingers to gently grasp the jaw and lift it forward.
- If you absolutely must roll the person because he or she is vomiting, choking on blood or in danger of further injury, use at least two people. Work together to keep the person's head, neck and back aligned while rolling the person onto one side.

SPRAIN

Your ligaments are tough, elastic-like bands that attach to your bones and hold your joints in place. A sprain is an injury to a ligament caused by excessive stretching. The ligament can have tears in it, or it can be completely torn apart.

Of all sprains, ankle and knee sprains occur most often. Sprained ligaments swell rapidly and are painful. Generally the greater the pain, the more severe the injury. For most minor sprains, you can probably treat the injury yourself.

Follow the instructions for P.R.I.C.E.

1. **Protect** the injured limb from further injury by not using the joint. You can do this using anything from splints to crutches.
2. **Rest** the injured limb. But don't avoid all activity. Even with an ankle sprain, you can usually still exercise other muscles to prevent de-conditioning. For example, you can use an exercise bicycle, working both your arms and the uninjured leg while resting the injured ankle on another part of the bike. That way you still get three-limb exercise to keep up your cardiovascular conditioning.
3. **Ice** the area. Use a cold pack, a slush bath or a compression sleeve filled with cold water to help limit swelling after an injury. Try to apply ice as soon as possible after the injury. If you use ice, be careful not to use it for too long, as this could cause tissue damage.
4. **Compress** the area with an elastic wrap or bandage. Compressive wraps or sleeves made from elastic or neoprene are best.
5. **Elevate** the injured limb whenever possible to help prevent or limit swelling.

After the first two days, gently begin using the injured area. You should feel a gradual, progressive improvement. Over-the-counter pain relievers, such as ibuprofen (Advil, Motrin, others) and acetaminophen (Tylenol, others) may be helpful to manage pain during the healing process.

Get emergency medical assistance if:

- You heard a popping sound when your joint was injured, you can't use the joint, or you feel unstable when you try to bear weight on the joint. This may mean the ligament was completely torn. On the way to the doctor, apply a cold pack.
- You have a fever higher than 100 F, and the area is red and hot. You may have an infection.
- You have a severe sprain. Inadequate or delayed treatment may cause long-term joint instability or chronic pain.
- You aren't improving after the first two or three days.

STROKE

A stroke occurs when there's bleeding into your brain, or normal blood flow to your brain is blocked. Within minutes of being deprived of essential nutrients, brain cells start dying — a process that may continue over the next several hours.

A stroke is a true emergency. Seek immediate medical assistance. The sooner treatment is given, the more likely it is that damage can be minimized. Every moment counts.

If you notice a sudden onset of one or more of the following signs or symptoms, call 911 immediately:

- Sudden weakness or numbness in your face, arm or leg on one side of your body
- Sudden dimness, blurring or loss of vision, particularly in one eye
- Loss of speech or trouble talking or understanding speech
- Sudden, severe headache — a bolt out of the blue — with no apparent cause
- Unexplained dizziness, unsteadiness or a sudden fall, especially if accompanied by any of the other symptoms

Risk factors for stroke include having high blood pressure, having had a previous stroke, smoking, having diabetes and having heart disease. Your risk of stroke increases as you age.

SUNBURN

Signs and symptoms of sunburn usually appear within a few hours of exposure, bringing pain, redness, swelling and occasional blistering. Because exposure often affects a large area of your skin, sunburn can cause headache, fever and fatigue.

If you have a sunburn:

- Take a cool bath or shower. Adding 1/2 cup of cornstarch, oatmeal or baking soda to your bath water may provide some relief.
- Apply an aloe vera lotion several times a day.
- Leave blisters intact to speed healing and avoid infection. If they burst on their own, apply an antibacterial ointment on the open areas.
- If needed, take an over-the-counter pain reliever such as aspirin, ibuprofen (Advil, Motrin, others), naproxen (Aleve) or acetaminophen (Tylenol, others). Don't give children or teenagers aspirin. It may cause Reye's syndrome, a rare but potentially fatal disease.

Do not use petroleum jelly, butter or other home remedies on your sunburn. They can prevent or delay healing.

If your sunburn begins to blister or if you experience immediate complications, such as rash, itching or fever, see your doctor.

TICK BITES

Some ticks transmit bacteria that cause illnesses such as Lyme disease or Rocky Mountain spotted fever. Your risk of contracting one of these diseases depends on what part of the United States you live in, how much time you spend in wooded areas and how well you protect yourself.

If you've received a tick bite:

- **Remove the tick promptly and carefully.** Use tweezers to grasp the tick near its head or mouth and pull gently to remove the whole tick without crushing it.
- **If possible, seal the tick in a jar.** Your doctor may want to see the tick if you develop signs or symptoms of illness after a tick bite.
- **Use soap and water to wash your hands** and the area around the tick bite after handling the tick.
- **Call your doctor if** you aren't able to completely remove the tick.

See your doctor if you develop:

- A rash
- A fever
- A stiff neck
- Muscle aches
- Joint pain and inflammation
- Swollen lymph nodes
- Flu-like symptoms

If possible, bring the tick with you to your doctor's appointment.

Call 911 if you develop:

- A severe headache
- Difficulty breathing
- Paralysis
- Chest pain or heart palpitations

TOOTH LOSS

If your tooth is knocked out, get emergency dental care. It's sometimes possible to successfully re-implant permanent teeth that have been knocked out. But this is an option only if you follow the steps below immediately — before you see a dentist.

If your tooth is knocked out:

- Handle your tooth by the top only, not the roots.
- Don't rub it or scrape it to remove debris. This damages the root surface, making the tooth less likely to survive.
- Gently rinse your tooth in a bowl of tap water. Don't hold it under running water.
- Try to replace your tooth in the socket. If it doesn't go all the way into place, bite down gently on gauze or a moistened tea bag to help keep it in place. Hold the tooth in place until you see your dentist.
- If you can't replace your tooth in the socket, immediately place it in whole milk, your own saliva or a warm, mild saltwater solution — 1/4 teaspoon salt to 1 quart water.
- Get medical attention from a dentist or emergency room immediately.

If you participate in contact sports, you can often prevent tooth loss by wearing a mouth guard, fitted by your dentist.

TOOTHACHE

Tooth decay is the primary cause of toothaches for most children and adults. Bacteria that live in your mouth thrive on the sugars and starches in the food you eat. These bacteria form a sticky plaque that clings to the surface of your teeth.

Acids produced by the bacteria in plaque can eat through the hard, white coating on the outside of your teeth (enamel), creating a cavity. The first sign of decay may be a sensation of pain when you eat something sweet, very cold or very hot. A toothache often indicates that your dentist will need to work on your teeth.

Self-care tips

Until you can see your dentist, try these self-care tips for a toothache:

- Rinse your mouth with warm water.
- Use dental floss to remove any food particles wedged between your teeth.
- Take an over-the-counter (OTC) pain reliever to dull the ache.
- Apply an OTC antiseptic containing benzocaine directly to the irritated tooth and gum to temporarily relieve pain. Direct application of oil of cloves (eugenol) also may help. Don't place aspirin or another painkiller directly against your gums, as it may burn your gum tissue.

Swelling, pain when you bite, a foul-tasting discharge and gum redness indicate infection. See your dentist as soon as possible.

Call your dentist if:

- The pain persists for more than a day or two
- You have fever with the toothache
- You have trouble breathing or swallowing

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