

February

National Heart Month

Stress

Electrical Safety

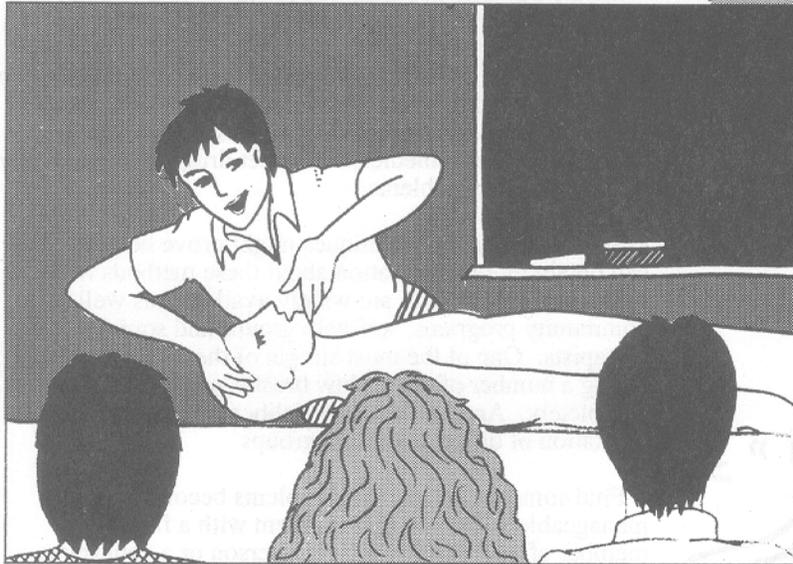
Foot & Hand Safety

Vehicle Backing Techniques

First Aid



HEART ATTACK



Someone trained in CPR can greatly improve the victim's chances of surviving a heart attack.

Heart attack means the heart has stopped pumping blood. It is the leading cause of death in adults. But, if you know the symptoms and what to do first if heart attack strikes, you may be able to save the life of a friend, coworker, or loved one. It's a good idea to take a class in CPR (Cardio Pulmonary Resuscitation). With CPR training, older children and adults alike may be able to help a heart attack victim. A heart attack can happen anytime, and within 4-6 minutes death or serious damage can take place. But, someone trained in CPR can greatly improve the victim's chances of surviving a heart attack.

Symptoms Of Heart Attack

There are many possible symptoms of heart attack. The more symptoms a person has, the more likely it is that he or she is having a heart attack. Even if a person has only one or two symptoms, though, it's important to seek medical attention as soon as possible. The most common symptoms of heart attack are listed in the box above.

HEART ATTACK SYMPTOMS

- difficulty breathing, gasping
- pressure, tightness, squeezing, or sensation of fullness in the chest (especially if it spreads across chest to shoulder, arm, neck, or jaw)
- nausea, vomiting, indigestion
- cold sweat or clammy skin
- pale or blue-looking skin, lips, or nails

What To Do

Call an ambulance immediately. If the victim is conscious, help him or her to a sitting position. Keep the victim warm and comfortable, using pillows for support and loosen tight clothing (especially collars). Ask if the person is taking medication and if you can get it for him or her. If the person is unable to speak, look for an emergency medical ID card or bracelet. If breathing has stopped, give mouth-to-mouth resuscitation. If breathing and pulse have stopped, and if you are trained, perform CPR.

Preventing Heart Attack

There are many things you can do to lessen your risk of suffering a heart attack. Speak with your doctor if you have questions about how to:

- quit smoking
- avoid fatty foods
- exercise regularly
- reduce stress, learn to relax
- control blood pressure
- reduce serum (blood) cholesterol



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These suggestions might give you some ideas of how to cope with stress:

- Maintain general good health. Eat nutritious meals regularly each day. Your diet should consist largely of healthy food such as whole grains, and fresh fruits and vegetables. Foods which are high in fat, salt and sugar should be kept to a minimum. It is important to get adequate sleep and rest. Exercising daily or at least several times a week will also help you to stay strong enough to cope.

- Avoid drugs. When we are under stress, it is tempting to turn to this kind of relief. However, the abuse of drugs such as alcohol, caffeine, nicotine, prescription drugs, over-the-counter remedies, and street drugs will eventually just add to your problems.

- Special relaxation techniques might prove helpful. You can obtain more information about these methods from books and tapes which are widely available, as well as community programs, self-help groups and some therapists. One of the most simple of these techniques is taking a number of deep, slow breaths and exhaling completely. Another involves deliberate progressive relaxation of different muscle groups.

- Find someone to talk to. Problems become more manageable when you discuss them with a friend, a member of your family, a clergy person or a counselor. Your company might have an employee assistance officer who can point you in the right direction.

- Give some thought to your priorities. You can't do everything and you can't be responsible for everything. Decide what is really important in your life and focus on that.

- Some problems have to be tackled head-on to be solved. These might include making some tough decisions and going to work on problems with relationships, finances or work difficulties.

- Other problems can perhaps be ignored. Many of the things we worry about are beyond our control or never actually affect us.

- Learn to relax on your time off from work and other responsibilities, even if it is very short. Every day do something you enjoy, such as a hobby.

- Learn to set realistic goals. If you are working toward specific goals, day-to-day difficulties are easier to handle.

- Learn to manage yourself to make the most of the time which you have each day. For instance, you might find it useful to get up a little earlier each day or leave for work a little earlier so that you don't feel rushed.

Excessive stress is a common problem in today's hectic world. Learn to manage stress to maintain your health — and your safety.

STRESS



Stress overload can affect your safety

Everyone has it and it isn't all bad. But when we suffer from stress overload it can affect our health, and even our ability to work safely.

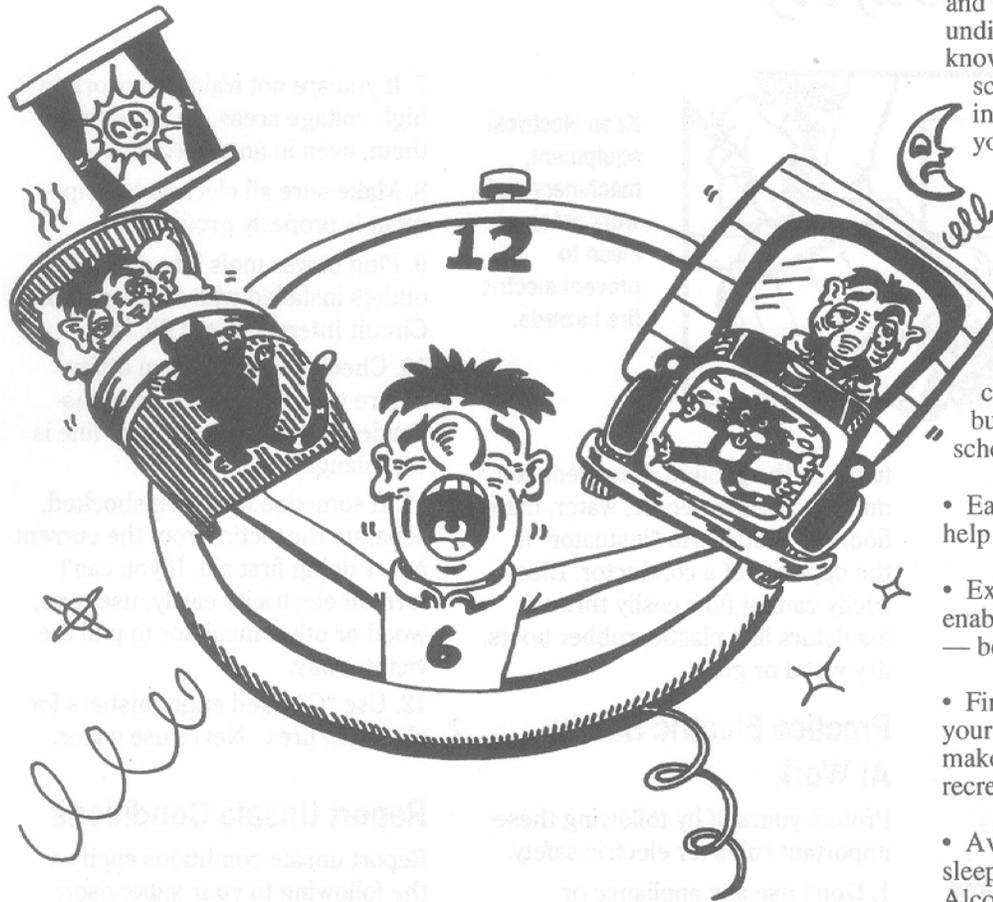
A reasonable amount of stress can motivate us to work better and faster. But excessive stress can cause many problems such as health difficulties. It can also keep us from concentrating on working safely.

Here are some of the symptoms of too much stress:

- Sleeping difficulties.
- Feelings of anxiety and of being overwhelmed.
- Being short-tempered and uptight.
- Physical sensations such as a tense muscles, headache or upset stomach.
- Abuse of substances such as food, cigarettes, alcohol or drugs.

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Strategies For Shiftwork



Shiftwork requires some special strategies to maintain health and safety.

People who work shifts (other than the standard daytime shifts) may be subject to problems such as lack of sleep which may in turn create an increased susceptibility to accidents. It is important for shiftworkers to take extra measures to get enough rest and to generally take care of themselves.

These are some of the challenges faced by shiftworkers: Shortage of sleep, sleep disturbances, fatigue (both physical and mental), digestive problems, stress, a feeling of isolation from family, friends and the community. There is also some suggestion that shiftworkers may be at greater risk for accidents.

Here are some ideas for coping more easily (and safely) with shiftwork:

- Work out a sleep schedule which suits you. As much as possible, get up and go to sleep at the same time each day, even on weekends. If your sleep schedule must vary, try to ensure that at least four hours of your sleeping period occur at the same time each day.
- Try to sleep in a room which is cool and dark. Use heavy curtains, shades and possibly ear plugs to muffle sounds. Even a radio playing softly, or a fan humming steadily can help to mask disturbing noises.
- Use a routine to unwind before going to bed. Follow regular habits

such as reading or drinking a warm beverage (avoid alcohol and caffeine) before you try to go to sleep.

- Enlist the co-operation of family and friends in helping you to sleep undisturbed. Simply letting others know of your sleep and work schedule may help prevent interruptions. It may help to post your schedule where others can see it. A "do not disturb" sign on the front door or the bedroom door may also be useful.
- Also obtain help from your family and friends in rescheduling events so that you can take part. Make an effort to build a social life into your schedule.

• Eat regular well-balanced meals to help maintain your health.

• Exercise on a regular basis to enable yourself to sleep — and work — better.

• Find ways to relax regularly. Take your scheduled work breaks and make sure you have some time for recreation.

• Avoid use of drugs such as sleeping pills and stimulants. Alcohol, cigarettes and coffee can all add to sleep disturbances and lower your ability to cope with shiftwork.

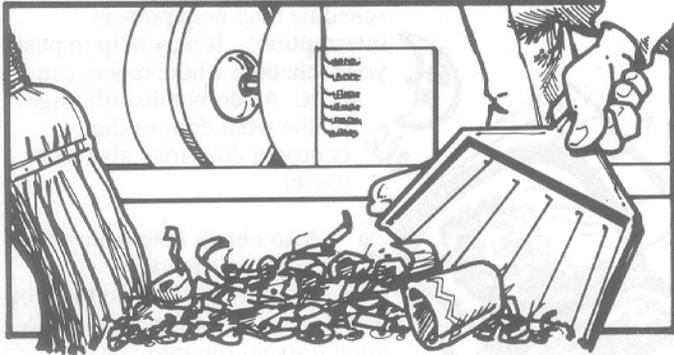
• Take into account the possibility that you might be more accident-prone if you are working shifts. Stay alert, and follow all safe work practices.

• Commuting to work at unusual hours may also have some risks. Avoid traveling alone through deserted areas. Be alert to mistakes by other early morning drivers, who may be impaired by drugs, alcohol or fatigue.

Not everyone is suited to shiftwork. But if you are working shifts out of choice or necessity, try these tips to make it easier on yourself.

ELECTRICITY

On The Job Safety



Keep electrical equipment, machinery and work areas clean to prevent electric fire hazards.

Each day electricity lights the office, runs the machinery, and heats the plant. It's easy but dangerous to take electricity for granted. To protect your coworkers, your family and yourself, practice electrical safety.

Electrical Hazards

Electric wiring, fixtures, equipment and machinery can be hazardous. First, they can cause fires and explosions. Wood, paper, and some chemicals can catch fire from just a spark. Second, electricity can burn, shock or even kill you, depending on the strength of the shock.

Third, when you are shocked, your muscles can contract violently, causing serious falls or other accidents.

Fourth, when electric equipment is not turned off after use, the next person to use it may not know the power is on. That person can be shocked or injured.

Understand Electricity Facts

Electricity travels over "conductors:" anything that allows electricity to flow. Electricity always tries

to reach the ground. Excellent conductors include people, water, damp floors or metal. An "insulator" is the opposite of a conductor. Electricity cannot flow easily through insulators like plastic, rubber boots, dry wood or glass.

Practice Electric Safety At Work

Protect yourself by following these important rules for electric safety.

1. Don't use any appliance or machinery while you are touching metal or anything wet.
2. Unplug machinery and appliances before cleaning, inspecting, repairing or removing anything from them.
3. Keep electrical equipment, machinery and work areas clean. Oil, dust, waste and water can be fire hazards around electricity.
4. Keep access to panels and junction boxes clear.
5. Move flammable materials away from electric heat sources and lights.
6. Know the location of fuses and circuit breakers.

7. If you are not trained to work in high voltage areas, do not enter them, even in an emergency.

8. Make sure all electrical equipment is properly grounded.

9. Plug power tools into grounded outlets installed with Ground Fault Circuit Interrupters (GFCIs).

10. Check with your local utility before you dig or work near suspended power lines. A "live" line is very dangerous.

11. If someone has been shocked, separate the victim from the current *before* doing first aid. If you can't turn off electricity easily, use rope, wood or other insulator to pull the victim away.

12. Use "C" rated extinguishers for electrical fires. Never use water.

Report Unsafe Conditions

Report unsafe conditions such as the following to your supervisor:

- shocking, sparking, overheating or smoking machinery;
- corroded outlets, switches and junction boxes;
- extension cords in permanent use;
- exposed wiring; broken plugs, outlets, or walls; missing box covers or faceplates;
- outlets in damp areas without GFCI's.

Electric Productivity

To stay productive and safe, follow these important rules for electrical safety. If you have questions, contact your supervisor or Safety Director.



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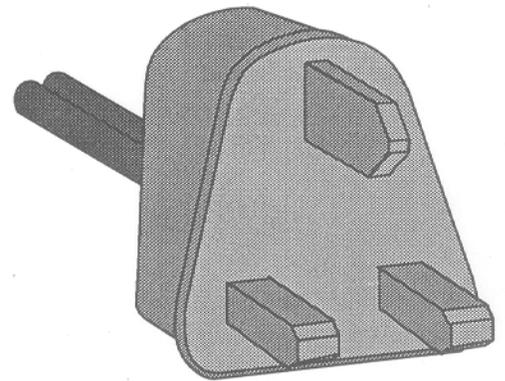
WHAT MAKES ELECTRICITY SHOCKING?

What makes electricity shocking? When you unwittingly become part of a circuit, electricity can give you a jolt. A shock can happen when you touch a "live" source of energy (a radiator, a coffee pot, a lamp) while you are also in contact with a ground surface, such as a wet surface or other conducting surface. Because electricity will always take an indiscriminate path to ground, it may well elect to take the route that passes through you, especially if there is a break in the wire or plug leading to the source. That is when things become shocking.

In the areas of your home where the risk of electric shock is greatest, ground fault circuit interrupters (GFCI) can provide an extra margin of safety. Consensus standards require ground fault protection in all areas within 6 feet of a water source.

GFCIs are extra-sensitive outlets that automatically break the flow of electricity when there is a difference in the amount of current flowing between the hot and ground wires in the circuit. (GFCIs are also available in extension cords.)

Most people tend to take for granted their safety while at home. They go about routine kitchen chores without much concern. But imagine you are doing the dishes and accidentally knock that new high-speed coffee grinder or toaster into the suds-filled sink. Two things can happen depending on whether or not you have GFCI protection. If you are without GFCI protection, you become the toast as the toaster ends up in the dish water. But, if you have GFCI protection, then the GFCI cuts off the power flow. It activates when it detects something beyond normal flow in the electric circuit it protects. So it is plain to see that without a GFCI in place, there is a greater risk to you.



If you live in a new or recently remodeled home, there's a good chance that you already have GFCIs in your kitchen and bathrooms. Other hot spots that could benefit from GFCIs are:

- Laundry rooms
- Garages
- Basements
- Decks and porches
- Outside receptacles

GFCIs can be added one location at a time or wired directly into your household circuits at the fuse box. At just \$10-30 a unit, they are also a great value. If you are a real handy person with a good electrical background, you may be able to install GFCIs by yourself. Don't push your luck though. When in doubt, turn the job over to a qualified electrician.

**By
Susie Ashby
Installation Safety Division**



GROUNDING DEVICES NOT ENOUGH

Devices such as a third-wire grounding conductor, grounding plugs and equipment ground wires are supposed to divert hazardous current harmlessly into the ground. But if the ground wire is broken, or the contact is no longer firm or the ground wasn't installed properly, such grounding devices are useless.

In fact, if you look around your home you'll probably find that most appliances have only two wires - they aren't grounded at all and older homes do not have grounded receptacles. In addition, insulation can also break down without you knowing it, You can't always tell if something has gone wrong. That's why GFCI's are needed. They can tell, and they can do something about it--fast!

GFCI's are now considered so necessary that the National Electrical Code requires their use to protect receptacle outlets outdoors and in bathrooms, garages, and other high-risk areas in new residences. The Code also recommends GFCI protection for receptacles in workshops, laundries, and kitchens. Of course they are always a good idea if you are using portable electrical equipment in a damp area.

GFCI's ARE COMPACT

GFCI's are small enough to be substituted for a unit in the circuit breaker box or inserted into a household outlet. Here are the three different types available:

1. **RECEPTACLE TYPE.** They are used instead of conventional wall boxes. They protect the receptacle at the outlet at which they are installed and can be wired to protect other receptacles on the same circuit. With proper enclosure, they can be installed indoors and outdoors.

2. **CIRCUIT BREAKER TYPE.** This type combines a GFCI with a circuit breaker in one unit. It is installed in the circuit breaker box with the other standard circuit breakers and will protect an entire circuit which can consist of several outlets.

3. **PORTABLE TYPE.** You plug the GFCI into an existing outlet, and then plug the device you want to use into an outlet on the GFCI. They are especially handy for use with power tools in various parts of the house. However, they only protect the equipment plugged into them. Equipment plugged into other receptacles on the same circuit is not protected.

Conditions, needs, and local regulations can vary, so consult a qualified electrician about the kind of GFCI protection that's best for you and your family.

KEEP AWAY FROM POWER LINES

REMEMBER THIS

Electricity, enough to kill, will flow through any metal or other conducting material that touches high-voltage lines. Sometimes it will even flow through wood.

Any metal part of a crane, shovel, pole, or other object that touches high-voltage lines becomes energized - and is then a potential killer. Statistics show that one out of three injuries caused by high-voltage lines results in death.

REMINDERS FOR OPERATORS OF EQUIPMENT

1. Inspect the route you must travel and the area in which your equipment will work. Make sure that no part of your equipment can come within 10 feet of high-voltage lines. Consult the power company about de-energizing, raising or rerouting the lines if necessary.
2. Don't attempt, under any circumstances, to raise or move high-voltage lines. If necessary, the power company will do it.
3. If there is any possibility when moving equipment that it may bounce and come within 10 feet of high-voltage lines, tie the boom (etc.) down.
4. Don't take a chance! Whenever you're in doubt, call the power company.

If mobile equipment touches a high-voltage line, the operator should back equipment away or lower the boom to break contact with the power line. The operator is usually safe if they stay in the cab. If they jump clear, they should be sure not to touch any part of the equipment when, or after, they reach the ground or they may be severely burned or killed.

REMINDERS FOR OTHERS

1. Keep away from equipment that you think is in danger of touching high-voltage lines and report it to you supervisor at once.
2. Don't touch equipment, cables or any metal that touches, or is in danger of touching, high-voltage lines.

REMEMBER: You Are No Safer Than Your Most Careless Act.

LOCKOUT/TAGOUT

Preventing Machine Surprises

When it's time for maintenance, repairs, or machine set up, simply unplugging the machine being worked on is not enough. Many serious accidents happen when someone thought a machine or electricity was safely "off". "Lockout/Tagout" is a way to protect yourself and others.

Guaranteeing Machines Stay "Off"

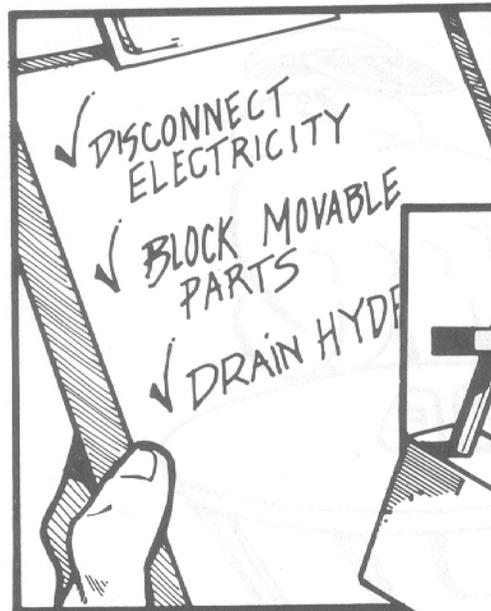
Lockout/tagout ensures that machines and electricity remain temporarily "off". Without a lockout/tagout system, there is the possibility that a machine will suddenly start up. Then someone could be cut, hit, or crushed. There is a serious danger of electrocution or release of hazardous chemicals.

To prevent start-ups, you need to identify a machine's power source: electricity, stored electricity (such as in a capacitor), stored pressure (such as compressed air), or stored mechanical energy (such as in a coiled spring).

Take 7 Steps For Lockout/Tagout

1. *Think, plan and check.* If you are in charge, think through the entire procedure. Identify *all* parts of any systems that need to be shut down. Determine what switches, equipment, and people will be involved. Carefully plan how restarting will take place.

2. *Communicate.* Let all those who need to know that a lockout/tagout procedure is taking place.



Neutralize all appropriate power at the source.

3. *Identify all appropriate power sources*, whether near or far from the job site. Include electrical circuits, hydraulic and pneumatic systems, spring energy, and gravity systems.

4. *Neutralize all appropriate power at the source.* Disconnect electricity. Block movable parts. Release or block spring energy. Drain or bleed hydraulic and pneumatic lines. Lower suspended parts to rest positions.

5. *Lockout all power sources.* Each worker should have a personal lock, labeled with his or her name and department. You may also use clips, chains and lockout boxes.

6. *Tagout all power sources and*

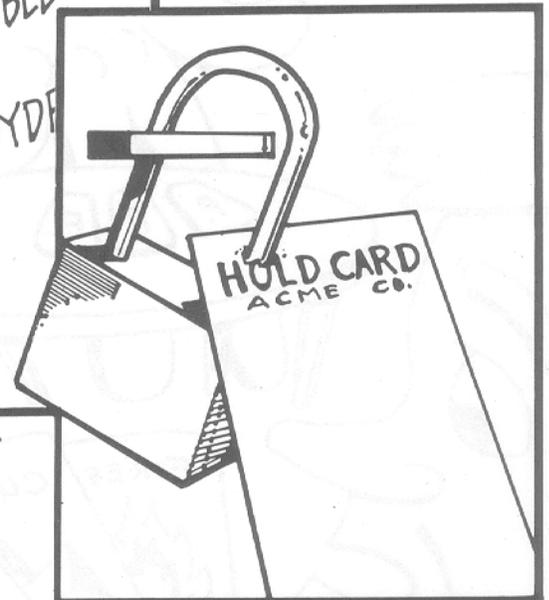
machines. Tags should explain the reason for the lock-out, your name, how to reach you, and the date and time of tagging. Tag machine controls, pressure lines, starter switches, and suspended parts.

7. *Do a complete test.* Doublecheck all steps above. Do a personal check. Push start buttons, test circuits, and operate valves to test the system.

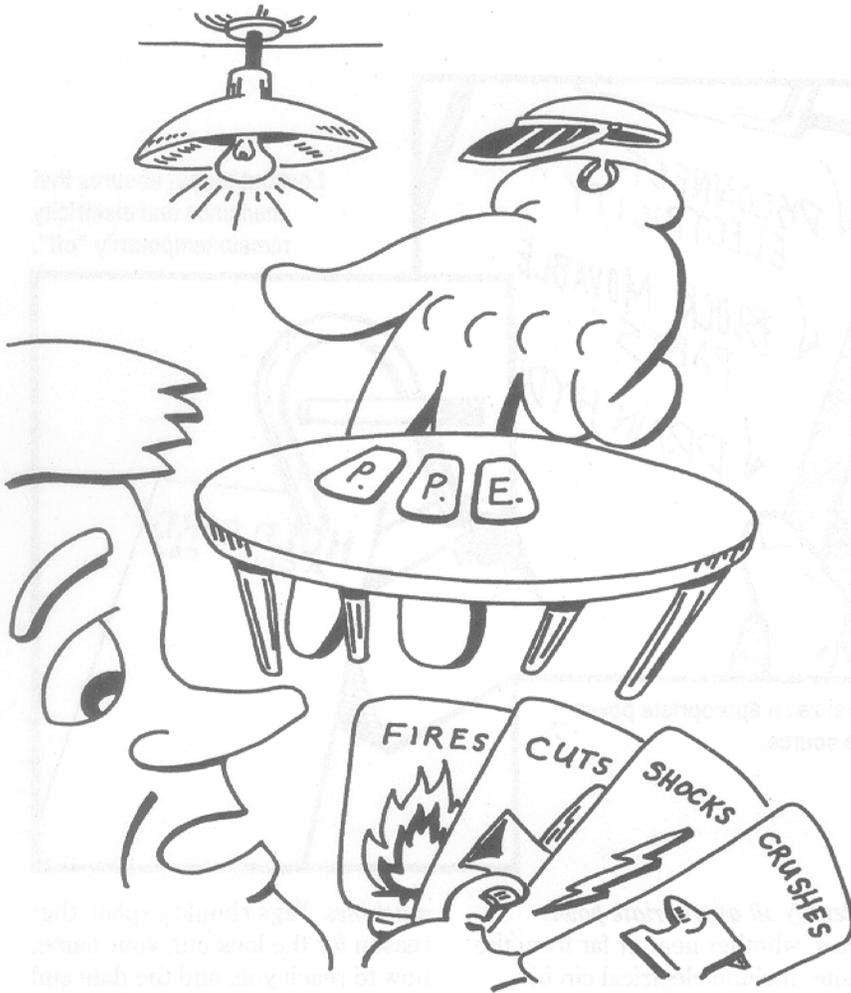
When It's Time To Restart

After the job is completed, follow the safety procedures you set up for restart. With all workers safe and equipment ready, then it's time to turn on the power.

Lockout/tagout ensures that machines and electricity remain temporarily "off".



Protect Your Hands From Hazards



You probably take your hands for granted until you have an injury. Then you realize just how difficult life can be without the full use of your hands.

In the workplace there are many hazards to your hand safety. Equipment which cuts and crushes materials can also mangle hands. There are rough surfaces which can scrape the skin. Hot and cold materials can cause thermal burns. Chemicals can corrode the skin or enter the body through the skin and cause poisoning. Infectious materials can cause disease. Electrical current which contacts the skin can cause fatal shocks. Other types of hand

injuries are caused over a period of time — by impact, strain or vibration.

To protect yourself against hand hazards, it is important to select the right kind of Personal Protective Equipment such as gloves. Ask your safety supervisor for guidance in choosing and fitting gloves.

Gloves made of different materials protect against different hazards. For instance, leather gloves can help protect against scrapes and splinters and might be worn in a warehouse materials handling job. Gloves and sleeves with a metal mesh reinforcement can protect against

cuts and would be worn in a food processing plant where the worker is using knives. Special rubber gloves can provide protection against electrical shock and could be worn around electrical installations. Fabric containing aluminum insulates against heat for work settings such as foundries. Gloves made of rubber or certain synthetic materials can provide protection against certain chemicals. It is important to choose gloves made of the right material for protection against chemicals. The chemical could leak through the wrong material.

In addition to gloves, there are special sleeves, cuffs, mitts and finger guards for certain hazards.

Besides wearing the right Personal Protective Equipment for your hands, there are some other things you can do to maintain hand safety on the job:

- Use care when working around moving equipment, as well as power or hand tools. Use machine guards correctly to prevent contact with moving parts or stock.
- There are many situations when you are working around moving equipment when you should NOT wear gloves, because of the danger of entanglement. For the same reason, you should not wear loose clothing or jewelry which can become entangled in machinery.

- Certain injuries can develop over a period of time. They are caused by repetitive strain, or by repeated impact or vibration. Carpal Tunnel Syndrome a common example of such an injury. It occurs when the worker performs the same hand motions all day, as in the case of a computer keyboard operator or an assembly worker. To help to prevent these injuries, keep your hands and wrists in a comfortable "neutral" position. Take short rest breaks frequent to relax your hands and wrists. Use tools which are specially designed to prevent repetitive strain and impact.

Your hands make it possible for you to work, so take good care of them!

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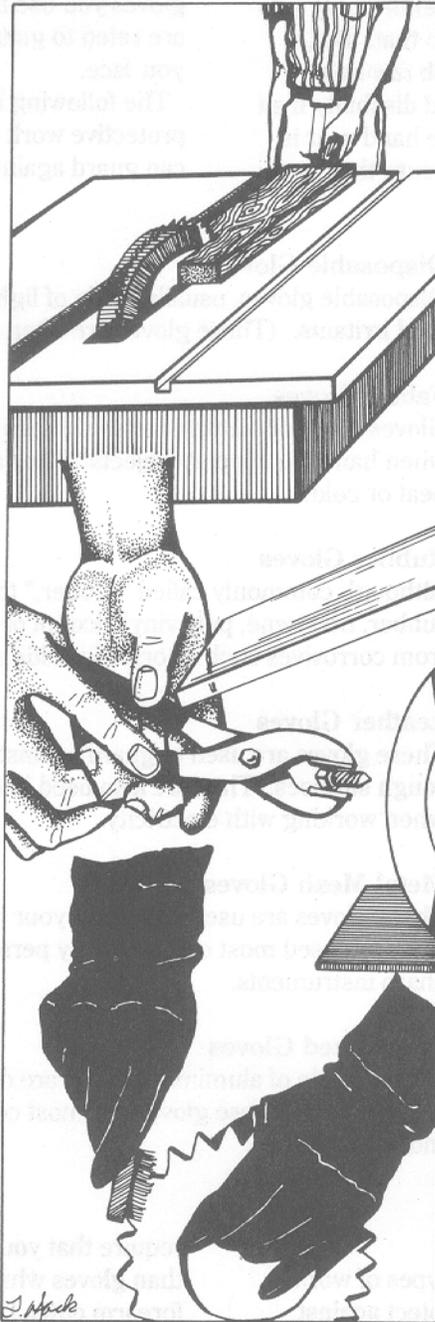
HAND SAFETY

Avoiding Finger, Hand, and Wrist Injuries

Whether you're a machine operator, a lab technician, an office worker—any kind of worker, for that matter—your hands are one of your most important "instruments." Yet, over a quarter of a million people suffer serious (and often disabling) hand injuries each year. By recognizing hand hazards, following established safety guidelines, and using protective guards, shields, gloves and other personal protective devices as needed, you can save your hands from injury and yourself from unnecessary disability.

Recognizing Hand Hazards

One of the most serious yet common causes of hand injury is the use of unprotected or faulty machinery or equipment. Failure to use push-sticks, guards, kill-switches, or to follow appropriate lock-out procedures are among the leading industrial hand hazards. Wearing jewelry, gloves, or loose-fitting clothing around moving parts can also lead to injury. Chemicals, corrosives, and other irritating substances can cause burns and skin inflammation unless appropriate hand protection is used. Temperature extremes and electrical hazards are other common causes of hand injuries. In addition, constant, repetitive motion (as in assembly-line work or painting) can cause undue stress on the wrists and hands unless protective measures are taken. The following list provides a guideline for hand safety that can help you protect your hands from injury and disability.



Always use push-sticks, guards, shields, and other protective devices when appropriate.

Hand Protection Checklist

- ✓ Be alert to potential hand hazards *before* an accident can happen.
- ✓ Be alert to possible unguarded pinch points.
- ✓ Always use push-sticks, guards, shields, and other protective devices when appropriate. Do not remove guards.
- ✓ Use brushes to wipe away debris.
- ✓ Inspect equipment and machinery before and after tasks to make sure that it is in good operating condition.
- ✓ Disconnect power and follow established lock-out procedures before repairing or cleaning machinery.
- ✓ Never wear gloves, jewelry, or loose clothing when working with moving machine parts.
- ✓ Use the *appropriate* personal protective equipment—gloves, guards, forearm cuffs, barrier creams—for the specific task you are performing.
- ✓ When wearing gloves, be sure they fit properly and are rated for the specific task you are performing.
- ✓ Select tools designed to keep wrists straight to help avoid repetitive motion/overuse problems.

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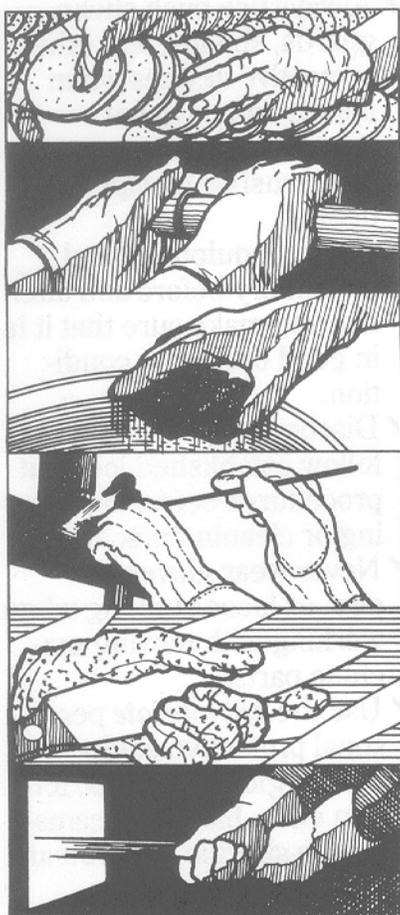
CHOOSING AND USING WORK GLOVES

Selecting The Right Protective Handwear

Work gloves cannot prevent hand accidents—only safe and conscientious work practices can do that. But, choosing the right work glove for the job *can* help protect you from unnecessary injury and disability if an accident should occur. When protective handwear is required for the job you perform, make sure that the

gloves you use fit well, are comfortable to wear, and are rated to guard against the particular hand hazards you face.

The following is a guide to the most common types of protective work gloves and the types of hazards they can guard against.



Disposable Gloves

Disposable gloves, usually made of light-weight plastic, can help guard against mild irritants. (These gloves are often used for food-handling operations.)

Fabric Gloves

Gloves made of cotton or fabric blends are generally used to improve your grip when handling slippery objects. They also help insulate your hands from mild heat or cold.

Rubber Gloves

Although commonly called “rubber,” these gloves may actually be made of rubber, neoprene, poly vinyl alcohol or vinyl. These gloves help protect hands from corrosives such as organic acids and petroleum-based products.

Leather Gloves

These gloves are used to guard against injuries from sparks or scraping against rough surfaces. They are also used in combination with an **insulated liner** when working with electricity.

Metal Mesh Gloves

These gloves are used to protect your hands from accidental cuts and scratches. They are used most commonly by persons working with cutting tools or other sharp instruments.

Aluminized Gloves

Gloves made of aluminized fabric are designed to insulate your hands from intense heat. These gloves are most commonly used by persons working with molten materials.

Using Hand Protectors

Although these are the most common types of work gloves, many gloves are designed to protect against specific hazards. (For instance, workers exposed to radiation hazards wear specialized lead-lined gloves.) It's also important to remember that your work may

require that you use *additional* hand protection other than gloves which may include approved barrier creams, forearm cuffs, hand pads, mittens, or finger cots. Your supervisor can help you determine the appropriate protective handwear for your particular job, but only you can make them work—by wearing them.



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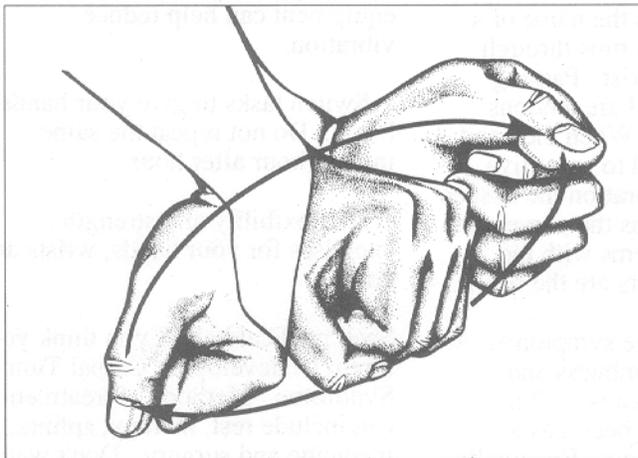
CARPAL TUNNEL SYNDROME

Preventing Repetitive Motion Problems

Your wrist aches, your fingers feel numb, you have difficulty doing even the most simple tasks like opening a juice jar. What's going on? It may be that you suffer from carpal tunnel syndrome—a hand disorder resulting from repetitious, forceful motion of the hands and wrists. Carpal tunnel syndrome is common and affects those of us who use the same hand motions over and over again at work or at home—painters, textile workers, word processors, cashiers, electronics assemblers, and many others. Fortunately, you don't need to “grin and bear it.” Carpal tunnel syndrome is often preventable through proper hand positioning and hand exercises.

Why Your Hand Hurts

The carpal tunnel is the bony cavity in your wrist through which your nerves and tendons extend to the hand. When you repeat the same hand and wrist movements day in and day out, the excess strain causes tendons to swell and press on the main nerve of the hand. This persistent irritation of the nerve can result in pain, numbness, and dysfunction not only in the hands and wrists, but may extend up to the forearm and elbow as well.



Wrist Rotation

Make a fist and rotate your entire hand (from the wrist) in one direction. Repeat 15 times. Switch directions and repeat 15 times. Then, release your hands, and with fingers extended, do the same rotations.

What You Can Do About It

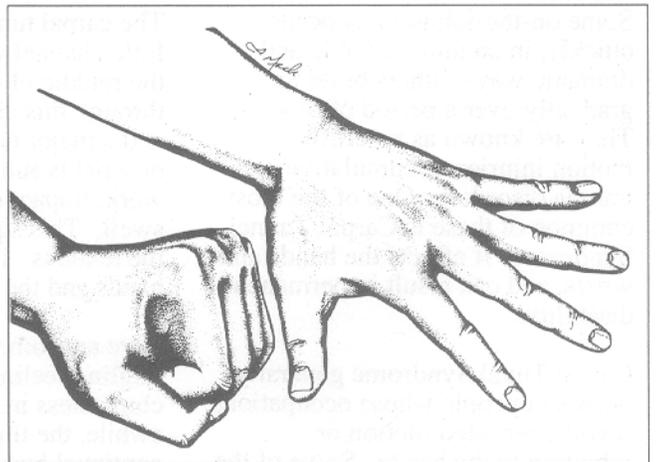
If you are at risk for developing carpal tunnel syndrome, why not try to prevent the condition before it occurs? By learning how to position your hands properly and by exercising your hands regularly, you can relieve excess pressure on your tendons and nerves and prevent unnecessary pain and disability.

Hand Positioning

When you keep your wrists and elbows straight, you place less pressure on the tendons and nerves in your hands. Try adjusting your work so that you can keep your forearm and hand straight. Use hand tools with the appropriate width, size, and shape—that is, make sure that you can grip the tool comfortably, that the tool can absorb vibration, and that handles are positioned to keep your wrists and hands in alignment.

Hand Exercises

The following exercises, when done daily, can help strengthen wrist and hand muscles and can help relieve strain caused by tasks requiring repetitive motions. 



Hand Stretch

Make a fist, then extend your fingers as far apart as possible. Hold for about 10 seconds. Relax. Repeat the entire sequence 5-10 times until hands and fingers feel relaxed.

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Repetitive Motion Injuries



Some on-the-job injuries occur quickly, in an unmistakable and dramatic way. Others build up gradually over a period of time. They are known as repetitive motion injuries or cumulative trauma disorders. One of the most common of these is Carpal Tunnel Syndrome. It affects the hands and wrists, and can result in permanent disability.

Carpal Tunnel Syndrome generally occurs in people whose occupations involve repeated motion or vibration to the hands. Some of the typical occupations where Carpal Tunnel Syndrome tends to occur include keyboarding, cashiering and assembly line work, but it can occur in many other kinds of work.

The carpal tunnel is the name of a little channel which runs through the middle of the wrist. Passing through this channel are tendons and a major nerve. When the hand or wrist is subjected to repetitive work, impact or vibration the tissues swell. This squeezes the nerve and the tendons. Problems with the hands and the fingers are the result.

Here are some of the symptoms: A tingling feeling, numbness and clumsiness in the hands. After awhile, the tingling becomes a continual burning pain. Eventually, the pain becomes so bad and the hand becomes so weak that it cannot grasp objects.

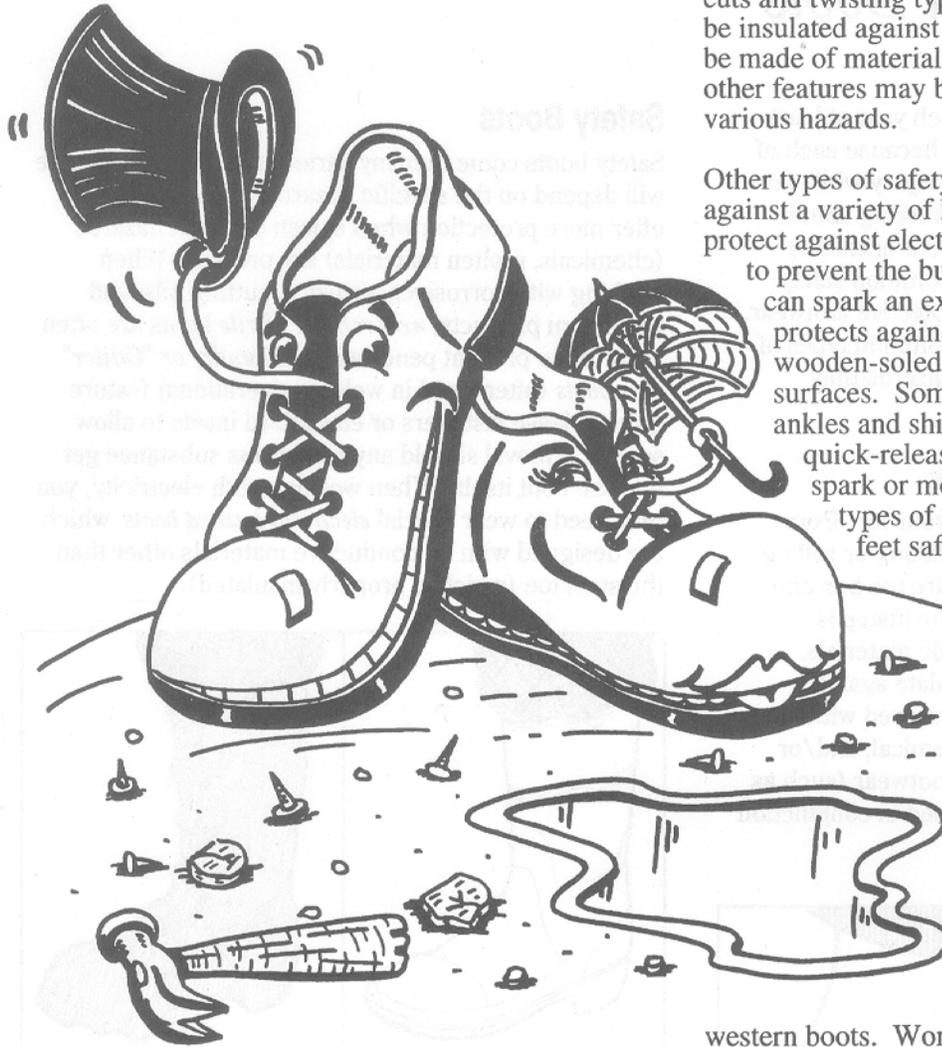
Carpal Tunnel Syndrome is much more easy to prevent than to cure. Here are some tips:

- Make it a habit to work with your wrist straight, not turned at an angle.
- Make adjustments to your work station and to your tools so that you can work with your wrists and hands in a comfortable and neutral position.
- Grip tools and materials with your whole hand where possible. Tools which extend only part of the way across the palm can contribute to Carpal Tunnel Syndrome.
- Take advantage of tools which are designed especially to allow you to keep your wrists in the correct position.
- Use other devices which help keep wrists in the correct position, such as wrist rests for keyboards and wrist braces.
- Do not subject the hands to impact. Remember never to pound with your hands.
- Also make an effort to avoid continuous vibration to your hands. Special padding on tools and equipment can help reduce vibration.
- Switch tasks to give your hands a break. Do not repeat the same motion hour after hour.
- Do flexibility and strength exercises for your hands, wrists and arms.

Seek medical help if you think you might be developing Carpal Tunnel Syndrome. Methods of treatment can include rest, therapy, splints, medicine and surgery. Don't wait for the problem to go away on its own. If it becomes worse, it will be more difficult to treat. It is possible to end up with permanent disability from Carpal Tunnel Syndrome.

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Safety Footwear Keeps Your Toes Intact



The best known type of safety footwear is the standard safety boot. It has reinforcement in the toe, traditionally made of steel, to protect against injuries caused by compression, impact and sharp objects. The sole is also reinforced to prevent puncture injuries. The high top protects the ankle from impact, cuts and twisting types of injuries. These boots may be insulated against temperature extremes. Soles may be made of materials to grip walking surfaces, and other features may be available to protect against various hazards.

Other types of safety footwear are available to protect against a variety of hazards. Some are made to protect against electric shock. Others are conductive, to prevent the build-up of static electricity which can spark an explosion. Special insulation protects against temperature extremes, such as wooden-soled shoes for walking on hot surfaces. Some special types of PPE protect the ankles and shins. Others are designed for quick-release so you can pull off a boot if a spark or molten material enters it. Certain types of footwear are made to keep the feet safe from infection.

Some standard excuses for not wearing safety shoes are these: They are too heavy, too ugly, too hot, too cold, too expensive or too uncomfortable. But safety footwear is getting easier to live with all the time. New materials are lighter. Safety shoes are available now in a variety of styles, ranging from the classic safety boots to athletic-type shoes, men's and women's dress shoes and

western boots. Women's sizes, as well as the less common sizes, are becoming increasingly easy to find.

Safety footwear is required on many jobs.

Falling objects are just one of the many dangers present in the workplace. Feet can also be crushed by rolling objects. Puncture wounds and cuts can be caused by stepping on sharp objects. Chemical spills, hot and cold temperatures and electrical shock are among other hazards. Even materials which can spread infections can be a threat to foot safety.

Safe workplaces and safe work practices are the best guarantee against injuries. But Personal Protective Equipment (PPE) for the feet gives an added measure of protection.

Like all forms of PPE, safety footwear doesn't do any good if you don't use it. Your safety supervisor can tell you what kind of foot protection you need and where to obtain it. Make an effort to get a good fit to ensure that you wear the shoes regularly. It is important that you maintain your safety shoes for maximum protection, checking for wear and defects which would affect its ability to protect you.

The small amount of effort and the slight extra expense which safety footwear may involve is certainly worth the protection which it provides.

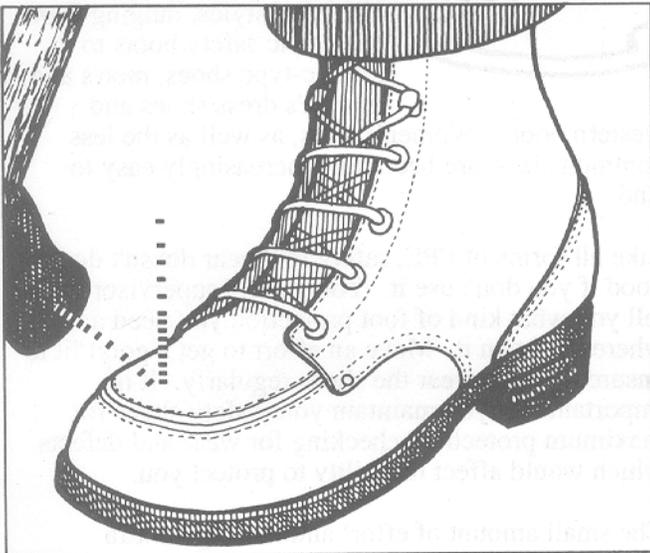
CHOOSING AND USING WORK SHOES

Safety Shoes And Boots

Who thinks about their feet? Well, each year at least 120,000 workers certainly do. That's because each of them suffered from an accidental foot injury while on the job. And what are most of them thinking about? Chances are, it's the realization that their accidents could have been prevented by using common safety sense and wearing the appropriate protective footwear. The following is a guide to the most common types of protective footwear and the types of hazards they protect against.

Steel-Reinforced Safety Shoes

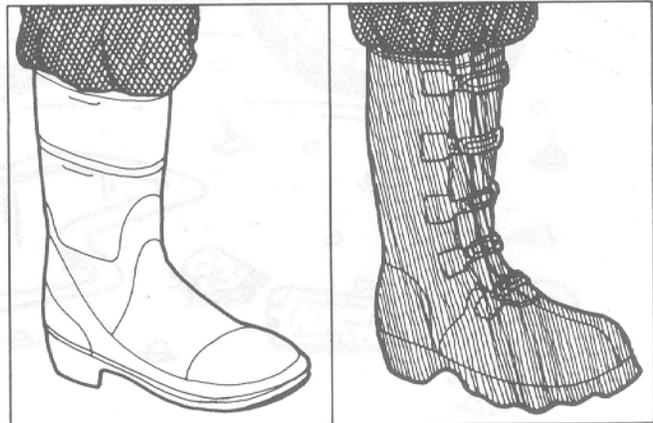
These shoes are designed to protect your feet from common machinery hazards such as falling or rolling objects, cuts, and punctures. The entire toe box and insole are reinforced with steel, and the instep is protected by steel, aluminum, or plastic materials. Safety shoes are also designed to insulate against temperature extremes and may be equipped with special soles to guard against slip, chemical, and/or electrical hazards. Other protective footwear (such as metatarsal and shin guards) can be used in conjunction with standard safety shoes.



Steel-reinforced safety shoes protect your feet from falling or rolling objects, cuts, and puncture injuries.

Safety Boots

Safety boots come in many varieties and which you use will depend on the specific hazards you face. Boots offer more protection when splash or spark hazards (chemicals, molten materials) are present. When working with corrosives, caustics, cutting oils, and petroleum products, *neoprene* or *nitrile* boots are often required to prevent penetration. *Foundry* or "*Gaiter*" style boots (often used in welding operations) feature quick-release fasteners or elasticized insets to allow speedy removal should any hazardous substance get into the boot itself. When working with electricity, you may need to wear special *electrical hazard boots* which are designed with no conductive materials other than the steel toe (which is properly insulated).



Boots offer more protection when splash or spark hazards (chemicals, molten materials) are present.

Using Protective Footwear

There are many types and styles of protective footwear and it's important to realize that your job may require additional protection other than that listed here. Features such as slip-resistant soles, for example, will vary from one shoe to the next, depending upon the particular type of slip hazard you come in contact with. Whatever your specific requirements are, you can ensure that your footwear meets established safety standards by checking for the American National Standards Institute's (ANSI) label inside each shoe.

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BACKING TECHNIQUES

One out of every four accidents can be blamed on poor backing techniques, according to the National Safety Council. Poor backing can result in damage to costly equipment and buildings, and can cause serious injury and death. Backing accidents are almost always preventable if the driver is properly trained - and prudent.

Drivers should avoid backing whenever possible, or pick spots that reduce backing to a minimum. This is a knack that can be learned.

Many parking accidents could be avoided if drivers would practice defensive parking. This requires alertness and foresight.

The defensive parker will choose their parking spot as prudently as they can, not too close to a corner or driveway, not too close to road or building construction, not where it will block or crowd other vehicles.

Park in the direction traffic is moving, and center your vehicle in the parking space. If parked on an incline, turn front wheels to wedge into the curb on the downhill side.

Failure to do this in some hilly cities (San Francisco, for example) is a traffic violation.

Rather than park at the curb, a driver making residential deliveries may sometimes pull into a private driveway to park for the errand. This can be dangerous. Before backing out, make a walk around inspection to be certain no children are playing behind.

When in an alley that does not permit drive-through or turnaround, back into the alley (unless prohibited by local ordinance). This will allow you to see the traffic picture as you drive out. Backing out, have someone signal when it's "all clear."

The driver who practices defensive parking will never take any situation for granted, but will observe and judge each parking requirement on its own. Even though backing into a particular parking spot a dozen times, look and evaluate the same spot each time to be sure of clearances and to make certain no new obstacles are in the way.

It takes lots of practice to develop good backing skills, and a tight spot is no place to get this experience.

If you have access to a test driving area where backing maneuvers can be practiced, use it.

It is amazing how many, even if experienced, will have backing accidents in a new situation.

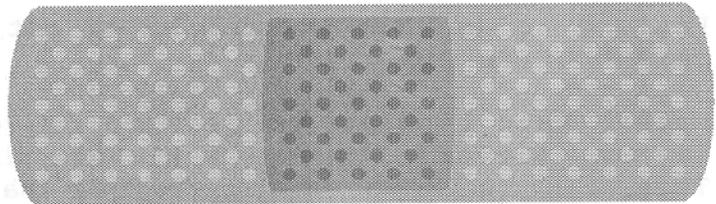
FIRST AID

It is a nice summer day and the kids are playing quietly in the backyard. Suddenly you hear a loud noise and crying. Running to the backyard, you are horrified to see your child's arm gushing blood. Or you are wondering what to eat, and on your way to the refrigerator, you hear you husband call out. When you reach the basement, he is lying on the floor, unconscious.

Sudden injuries and illnesses happen all the time, If you know first aid, you can help save the life or health of a family member or co-worker.

Even if you are usually calm, you can become panicked during an emergency. It is hard to know what to do then. Call the doctor or wait? Use heat or ice? Your instincts are not always enough. Taking a first aid course can give you important information and skills.

Just like it sounds, "first aid" is the first help you give someone who is suddenly sick or injured. In a serious accident, first aid can mean the difference between life and death. First aid is never meant to take the place of medical care. It is what you do until a doctor can see the victim.



When you know first aid, you can help relieve a victim's pain, and you can prevent further injury. You can also give the doctor important information. For example, if the victim has been poisoned, you can tell the poison control center what the poison was.

Many local American Red Cross organizations offer low-cost or even free first aid classes. Contact them for schedules and information. First aid courses teach you how to take care of injured people. You may have hands on chances to try what you are learning. You will probably remember what you have done in a class, such as bandaging someone's arm, better than what you might read in a book. When you have practiced first aid in a calm situation, you can stay calmer in a real emergency.

After you take a first aid course, you may want to prepare emergency plans and first aid kits for your home and car. You may also decide to keep a list of emergency phone numbers where everyone can see them. A first aid course will make you feel more confident that you will be prepared if an emergency does happen.

Play it safe, prepare yourself, it' the smart thing to do.

**Susie Ashby
Installation Safety Division**



MINOR WOUNDS

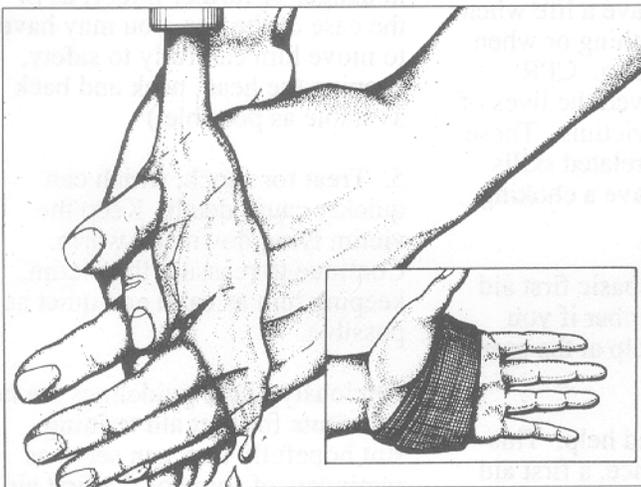
Minor wounds are usually unexpected. But, accidents can happen to anyone. The kitchen, shop, playground, or worksite are all places where someone can suffer a minor wound. These wounds usually aren't serious, and in many cases, first aid will be all you need. Knowing what to do right away can make a difference in how quickly, and how well, the injury heals.

What Is A Minor Wound?

A minor wound is one that is small, or on the surface of the skin. It may not bleed, or if it does, the bleeding stops quickly. There are four kinds of minor wounds. A *cut*, or incision, can be caused by any smooth, sharp object, like a kitchen knife or a piece of broken glass. A *laceration* (pronounced "lass-er-ay-shun") is a cut with a jagged edge. It can be caused by a sharp object like a serrated knife or machinery. A scrape is also called an *abrasion*. The most common kind is probably a child's skinned knee. A *puncture* is a hole in the body. It can be caused by a stick, metal bit, staple, nail, or any object that pierces the skin and enters the body.

Cuts And Scrapes

For any minor wound, it's important to keep the injury clean to avoid infection. If it is a cut or scrape, wash it



Wash minor cuts and scrapes with soap and water, then bandage.

with soap and water. Then, rinse with clean water. Let the air dry the wound and then cover it with a clean dressing or sterile bandage.

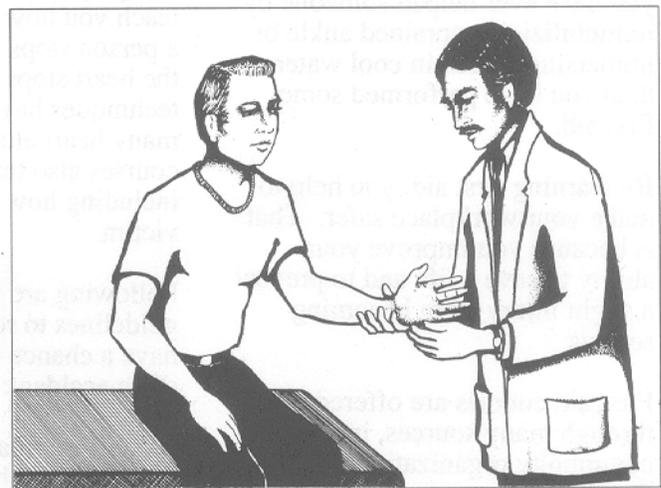
Punctures And Lacerations

If it is a puncture or laceration, there can be a danger of infection since these wounds are often caused by objects such as rusty nails, that may leave dirt in the wound. First aid for punctures and lacerations includes cleaning the surface of the skin and encouraging bleeding to help clean the wound. Applying pressure around a puncture wound may help it to bleed and clear away any debris trapped inside. Bandage a puncture wound lightly. Bandage a laceration as you would a cut or scrape.

Precautions

If you suffer even a small puncture wound or laceration you may need to receive a tetanus "booster" shot if you haven't had one in a long time. Depending on the kind you received last time, a tetanus shot can protect you for up to ten years. Check your medical records or call your doctor to see if you need another one.

Remember, also, that even a minor wound can become infected. If the area around the wound is red, tender, or swollen after a few days, you should see your doctor. ❖



If, after a few days, the wound is red, tender, or swollen, see your doctor.

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EYE INJURIES

Your eyes are important to you. They work for you from the moment you wake up until you go to sleep. Your life would be completely different if you could not see. Many people take their eyes for granted. They are not as careful as they could be about protecting their eyes. But even if you are careful, accidents can happen.

Small Particles In The Eye

Normally, your eyes will water to rinse clean of dust, dirt, sand, or fine pieces of metal. But that may not get rid of the particles. Never rub your eyes, even if you are uncomfortable. If you get a particle under the upper eyelid, pull the upper lid down over the lower one for a few moments. This may dislodge the particle. If you get a particle under the lower eyelid, pull down the lower lid. Looking in a mirror, take the corner of a piece of sterile gauze to draw the particle out. If these hints don't work, rinse the eye for 15 minutes. Hold your eyelid open, and let the water run from the inside to the outside of the eye.

Large Particles In The Eye

If a larger particle is stuck in someone's eye, don't try to remove it—this can make the damage worse. Instead, gently put gauze or clean cloth in a circle around the outside of the eye. Place a crushed cup over the object, making sure not to move the object at all. Then, wrap a bandage over both eyes. Try to keep the victim calm and still while you send for medical help.



Always read labels before you use a chemical so you'll know what to do in an emergency.



Safety goggles can save your eyes.

Chemicals In The Eye

If a chemical gets into someone's eyes, immediate first aid is critical. If the victim is wearing contact lenses, remove the lenses at once.

If the chemical is an acid, rinse the eye for 15-20 minutes. Keep the injured eye lower than the other one to prevent the chemicals from entering the unharmed eye. Do not apply neutralizers, ointments, or drops to the eye which can make damage worse. If the chemical is an "alkali" or "basic" (like lye), call a doctor or Poison Control Center immediately and follow their instructions.

"Black" Eye

If someone is struck in the eye, cover the eye with a clean, dry dressing. Put ice or a cold pack over the dressing to keep swelling down. Get medical attention.

"Dislocated" Eye

If someone's eye is knocked out of the socket, vision can possibly be saved if you act promptly. Do not try to replace the eye. Cover the eye with a clean, moist dressing. Cover both eye sockets to prevent eye movement, and get to an emergency room immediately.

Prevent Injuries

Protect your eyes any time you are doing work where potential eye "hazards" exist. For instance, wear approved safety goggles when drilling, mowing the lawn, using machines, or when working with chemicals of any kind. Have the phone numbers of the doctor, emergency room, ambulance, and poison control center posted where they can be easily seen. It may save someone's vision.



BROKEN BONES

Bones can break or “fracture” in many situations. The break may be caused by a fall, a sports or car accident, or by being hit by someone or something. When a bone fractures, the victim should see a doctor as soon as possible. Even before seeing a doctor, how the victim is treated right after the bone breaks, can make a big difference in preventing more serious damage.

Types Of Fractures

There are two kinds of fractures—simple and compound. A simple fracture is when there is no open wound that you can see. A compound fracture is when there is an open wound. (In compound fractures, the bone may actually stick out through the skin.)

Symptoms Of Fractures

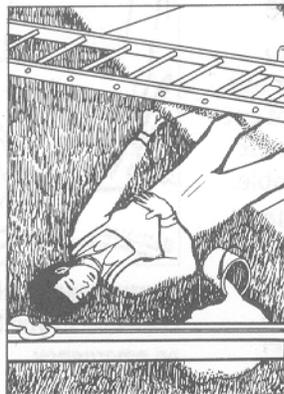
People with broken bones are often, but not always, in pain. Never try to move the part you think might be broken to see if it hurts. You can touch the skin above the bone very lightly. If it's broken, it will probably be very tender. The area may swell, or may have a very strange shape. It may turn a dark color. If the person has heard or felt something snap, there is a good chance the bone is broken.

First Aid For Fractures

For any fracture, it's important to control bleeding (apply direct pressure to the wound), and treat for shock (keep the victim warm and lying down). Always call a doctor or emergency medical center if you suspect a broken bone. Never move the injured person unless you are certain any broken bones will not make the injuries worse. If you must move the person, “splint” the injured area by putting something rigid next to the area then wrapping it so the part cannot move. If a bone is sticking out, never try to put it back. Stop any bleeding using a clean dressing, but do not wash the wound.

If you think a person's legs, back, or neck are broken, *do not move the victim unless absolutely necessary*. If the victim is in grave danger and must be moved, try to keep the back, head and neck in a straight line. Place a board beneath the body to help prevent twisting or bending.

A splint should extend above and below the injured area, to the nearest joint.



If the victim is unconscious, a spinal injury may be involved. Get emergency help *immediately*.

Splinting A Fracture

Without moving the victim, make a splint where you suspect a broken bone. Take soft material and place it around the injury. Use a board, cardboard, or newspaper to act as a splint. Put the splint outside the soft material. (Place splints on both sides of the broken bone if possible.) Fasten the splint with wide strips of cloth or bandage in at least three places: at the bone break, above the top of the nearest joint, and below the bottom of the nearest joint. Fasten the strips firmly, but not too tight. That can make swelling worse.

Help Is On The Way

Anyone can help make someone more comfortable if a bone is broken. Your fast thinking can get an ambulance or doctor to the scene quickly. Then someone who is trained to handle fractures can take care of the victim.



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FROSTBITE

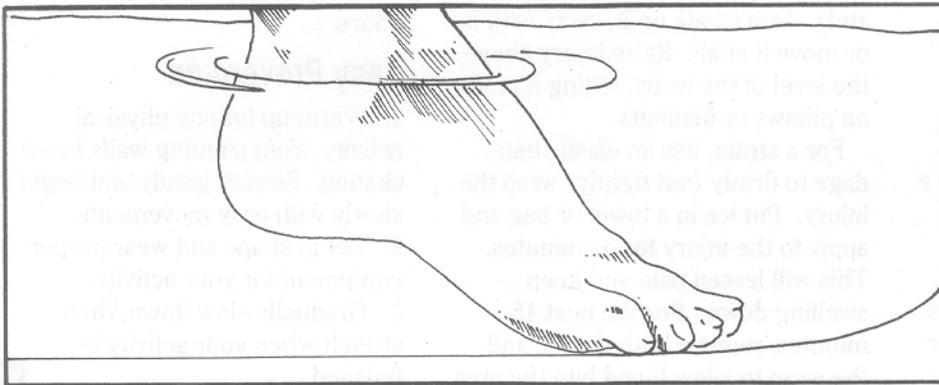
When you are in extreme cold, you expose yourself to frostbite. Often, a victim of frostbite is not even aware of the damage being done. So it is important to know the symptoms and first aid treatment for frostbite. You may save yourself or someone else from serious frostbite injury.

Signs Of Frostbite

Frostbite happens when the fluids and tissues of the skin freeze. When it is very cold, and especially when the wind blows hard, it is difficult to keep the ends of your body warm. Frostbite is a great danger to your nose, cheeks, ears, toes, and fingers. The first sign of frostbite is reddening of the skin. It then turns blotchy white, gray, or yellow. Finally, the skin becomes completely white and sometimes blisters. The body part may feel very cold or numb. In advanced stages of frostbite, there is no feeling at all in the exposed skin. Frostbite victims also suffer from hypothermia or loss of body heat. Symptoms are shivering, loss of hand control, drowsiness, and not caring about staying warm. Hypothermia victims need to get out of the cold immediately.

Treating Frostbite

Keep the victim as warm and dry as possible. Bring the victim inside to a warm place as soon as you can. Warm the frozen body part by putting it in warm (not hot) water, damp cloths, or blankets. Check the water or cloth frequently to make sure it stays warm. Do not



rub or move the frozen part. Place the frostbitten part lower than the head, to increase blood flow. Do not let the person sit close to a stove, heater, or fire. If the frozen part gets too hot, the damage can be worse. *Do not* give the person alcohol. Once the area is thawed, the victim should gently exercise the area. This will bring blood back into the injured part. (If the victim will have to go back into the cold again, do not thaw the frostbitten area, as it will freeze again and cause more damage.) Get medical attention as soon as possible.

Avoid Frostbite

Don't stay out in extreme cold whenever possible. If you must, wear clothing to protect your face, nose, ears, fingers, and toes. If you work in the cold, have a buddy with you, and check each other frequently for frostbite and hypothermia symptoms. When you are in the cold, wiggle your toes and fingers. If they are beginning to lose feeling, are tingling, or painful, come inside and warm up.

Wear warm gloves, and boots if you must work in extreme cold.

Immerse frostbitten body part in warm (not hot) water. Check water frequently to make sure it's still warm.



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STRAINS AND SPRAINS

Your evening jog is going well. Suddenly, your foot lands on a small rock and you collapse. What happened? It's a *sprain* if a ligament that links the ankle bones together has stretched or torn. But, if a muscle or tendon is affected, it's a *strain*. You can help avoid the pain and annoyance of these injuries by knowing about strains and sprains. If an accident does happen, you can prevent it from getting worse and help it to heal sooner by using basic first aid hints.

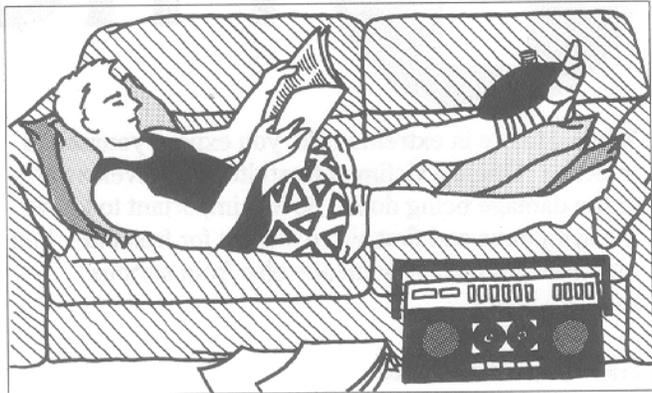
Why Strains Happen

Muscles and tendons need to be warm to work well. When you haven't warmed them up—let's say before shoveling snow or bowling—you can strain them. Strains are not as serious as sprains. Strains also happen if your muscles aren't used to an activity. If you play baseball once a year at the company picnic, but neglect to get into shape beforehand, you may end up with a strained shoulder. Using your body in the wrong way can also cause strains. A common cause of back strains is lifting a heavy box without bending the knees.

Why Sprains Happen

Joints allow us to bend, twist, or turn. When a joint is forced to go much further than usual, you have a sprain. Ankles, wrists, knees, and fingers can sprain easily. Sprains are common in sports. Sudden twisting as in baseball, tremendous force and pressure as in football, or falls as in ski accidents, are all

Rest a strain injury on pillows above the level of the heart.



causes of sprains. You don't need to be an athlete to suffer a sprain. Just walking and twisting an ankle, or tripping, falling, or landing hard on a joint can result in a sprain.

Sprain/Strain Symptoms

A sprain may be instantly very painful. The joint swells quickly and turns black and blue. You may not know whether or not you have broken a bone unless x-rays are taken. Strains may be painful instantly or may become painful several hours after the injury. The injured area may be tender and swollen and may turn black and blue. Often, you will have a smaller range of motion in the area.

First Aid Helps Heal

Stop using the injured part immediately. Don't walk on it, carry with it, or move it at all. Raise injury above the level of the heart, letting it rest on pillows or blankets.

For a strain, use an elastic bandage to firmly (not tightly) wrap the injury. Put ice in a towel or bag and apply to the injury for 30 minutes. This will lessen pain and keep swelling down. For the next 15 minutes, remove both the ice and the wrap to allow blood into the area.

Repeat ice and wrap, on and off, as your doctor or physical therapist recommends.

For a sprain, treat it as if there are broken bones, since you may not be able to tell until an x-ray is taken. Splint the area using a pillow, towel, or blanket. Then, apply ice in a towel or bag to the injury, and speak to a doctor to see if you need an x-ray.

After 48 Hours

Now, you can promote healing by using wet heat, such as whirlpool, bath, or wet towel. If it is a mild strain, gentle exercise will help you feel less stiff. But, if pain is sharp, stop immediately. See a doctor or physical therapist if: sprain is moderate or severe; pain is very strong or lasts more than 24 hours; swelling doesn't lessen after 24 hours.

Easy Prevention

1. Warm up for any physical activity, from painting walls to ice skating. Stretch gently and begin slowly with easy movements.
2. Get in shape and wear proper equipment for your activity.
3. Gradually slow down, then stretch when your activity is finished.



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MAJOR WOUNDS

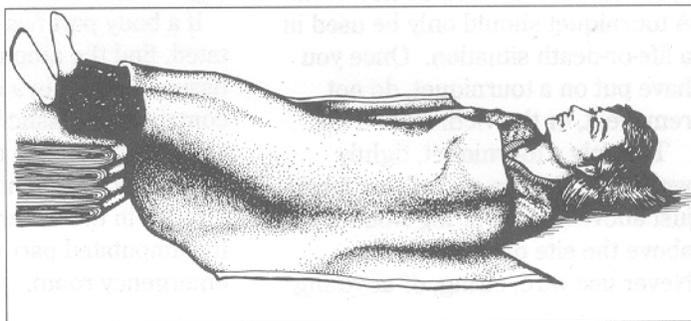
A wound is considered major if it is large, deep, and bleeding heavily. There are four kinds. A cut, or incision, can be caused by any object with a sharp, smooth edge. A laceration is a cut caused by a ragged edge. A scrape or abrasion can be caused in many ways, like accidents with machines, slips and falls, or car accidents. A puncture is a hole in the body. It can be caused by anything that pierces the skin and enters the body. An impaled object is a puncture wound where the item that made the hole is stuck in the body.

First Aid Steps

When someone suffers a major wound, call for medical help. Like all first aid, the steps described here are not meant to take the place of professional medical care.

First, stop the bleeding. Unless there is an impaled object in the wound, push directly on the wound using a sterile bandage or cloth. (If none is available, use your hand.) Keep the pressure on, then bandage it tightly. If there is an impaled object, do not remove it. Press around the object with a clean dressing or your hand.

Cover the victim with a coat or blanket to keep him warm.

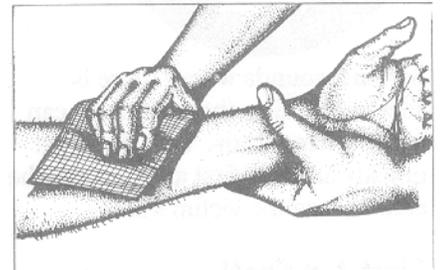


If there are no broken bones, raise the injured body part higher than the victim's heart. If there are broken bones, try not to move the limb at all; but, if you must, be sure the limb is splinted first to avoid causing further injury.

If bleeding is still out of control, keep pressure on the wound and keep the injured part high. At the same time, if the wound is in the arm, hand, leg, or foot, press on the artery that gives blood to that side of the body. (For the arms, the artery is inside the upper arm, halfway between the shoulder and elbow. For the legs, the artery is in the middle of the crease between the thigh and body trunk.)

Using A Tourniquet

Sometimes an injury is so severe that the suggestions above don't stop bleeding. If you feel it is a life and death situation, you may need to use a tourniquet. A tourniquet is a special way to wrap a body part tightly so that blood can't get through that part at all. If you use a tourniquet, do not remove it—let a professional medical person do that. Otherwise, the victim may suddenly go into shock, a blood clot can be



Control bleeding by pushing directly on the wound.

loosened, or the victim may even die.

To apply a tourniquet, wrap a wide piece of cloth, towel, or fabric just above an arm or leg wound. Never use wire, string, or anything that could cut the victim's skin. Wind the cloth around the limb two times. Tie the cloth in a knot. Put a stick in the knot, and tie two more knots to keep the stick in place. Then, twist the stick until the bleeding stops and leave it twisted tightly.

Treat For Shock

Look for shock symptoms: cold, clammy, pale skin; quick, weak pulse; rapid, shallow breathing; nausea or vomiting. If you think the person may be in shock, have him or her lie down. Raise the feet on a blanket or pillow unless you suspect a head, neck, or spinal cord injury. Keep the victim warm, not hot, with a blanket. Do not give food or drink.

Stay Calm

A major wound can be very frightening to both you and the victim. Take a deep breath and try to stay calm. Talk to the victim and reassure him or her that everything is being done to help. Reassuring the victim is important, and can actually help the healing process.



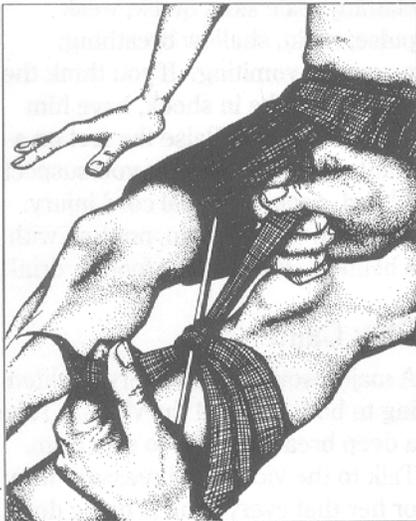
HEMORRHAGE

Serious wounds where there is severe bleeding (hemorrhage) can be very dangerous. But, if you act quickly and use first aid, you may be able to save the victim's life.

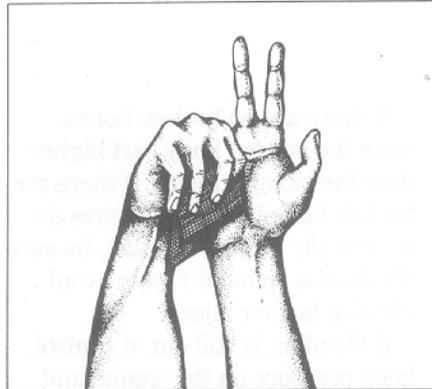
First Aid Fast!

Severe bleeding can occur when there is a major wound (such as a serious cut, laceration, abrasion, or puncture), or when a body part is amputated or torn from the body itself. Whenever severe bleeding occurs, your first step is to call for emergency medical help immediately.

It is important to control bleeding until help arrives. Using a sterile bandage or clean cloth, push very firmly directly on the wound. Wrap a bandage over the wound and tie it tightly. Keep pressure on the wound until medical help arrives. If you can't find a clean bandage or cloth, use your hands. If there are no



Only use a tourniquet in life-or-death emergencies.



Use direct pressure on the wound, then raise it above the heart. If bleeding continues, press on the artery that gives blood to that area of the body.

broken bones, keep the injured body part higher than the victim's heart. Lay the victim down and keep him or her at rest. (If there are broken bones, do not move the limb.)

If bleeding is still out of control, continue to keep pressure on the wound, while pressing on the artery that gives blood to that area of the body (see illustration). The pressure point for the arm is on the inside of the arm on the same side of the body as the injury. For the leg, it's on the inside of the groin on the same side of the body as the injury.

Using A Tourniquet

A tourniquet is an emergency effort to stop bleeding when the other approaches described do not work. A tourniquet should only be used in a life-or-death situation. Once you have put on a tourniquet, do not remove it, or the victim could die.

To apply a tourniquet, tightly wrap a wide piece of cloth or fabric just above an arm or leg wound, or above the site of amputation. Never use wire, string, or anything

that could cut the victim's skin. Wind the cloth around the limb two times. Tie the cloth in a knot. Put a stick in the knot, and tie two more knots to keep the stick in place. Twist the stick until the bleeding stops and leave it twisted tightly. Write down the time the tourniquet was put on, and pin the piece of paper to the victim's clothing, or write "T" and the time on the victim's forehead in lipstick or pen.

Once Bleeding Is Controlled

Cover the wound with a dry sterile dressing. Wrap bandages firmly. Treat the victim for shock—keep the victim warm (not hot), and lying down. If there is no head or neck injury, place the victim's feet on a blanket or pillow so they are slightly higher than the head.

If a body part has been amputated, find the amputated part or tissue. Keep it in a clean dry container or plastic bag. Place the container or bag in a bowl of cold water or ice. (Do not put the part directly in the water or ice.) Bring the amputated part with you to the emergency room.



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AMPUTATION

Loss of a finger, hand, arm, or leg can be extremely dangerous. But, if you act quickly, you may be able to save the victim's life. Doctors may even be able to sew the part back on and help it return to normal use.

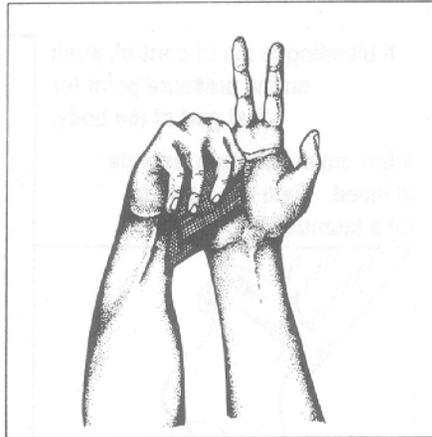
First Aid Fast!

Amputation is when a body part has been cut or torn from the body. When there has been an accidental amputation, call an ambulance or doctor right away—this is an emergency and every second counts. It is most important to control bleeding. Using a sterile bandage or clean cloth, push very firmly on the wound. If no bandage is nearby, use your bare hand. Keep pressure on the wound until medical help arrives.

If there are no broken bones, raise the injured part higher than the victim's heart. If there are broken bones, do not move the limb. If bleeding is still out of control, continue to keep pressure on the wound and keep the injured part high. Then press on the artery that gives blood to that area of the body (see illustration). This will either be on the inside of the arm or inside of the groin on the same side of the body as the injury.

Using A Tourniquet

A tourniquet is an emergency effort to stop bleeding that is out of control. Use it when the approaches described above fail to stop bleeding. Use it only in a life-or-death situation. Once you have used a tourniquet, you *must* leave it



Use direct pressure on wound, then raise it above the heart. If bleeding continues, press on the artery that gives blood to that area of the body.

on, maintaining pressure until a trained medical person can take over, or else the victim could die.

To apply a tourniquet, tightly wrap a wide piece of cloth, towel, or other fabric just above the amputation. Never use wire, string, or anything that could cut the victim's skin. Wind the cloth around the limb two times. Tie the cloth in a



Only use a tourniquet in life-or-death emergencies.

knot. Put a stick in the knot, and tie two more knots to keep the stick in place. Then, twist the stick until the bleeding stops and leave it twisted tightly.

When Bleeding Is Controlled

Cover the wound with a dry, sterile dressing and wrap bandages firmly. Treat the victim for shock. Keep the victim warm (not hot), and lying down. If there is no head injury, place the feet on a blanket or pillow so they are slightly higher than the head.

Find the amputated part or tissue. Keep it clean and put it in a dry, covered container. Then place the container in a bowl or container of cold water or ice. Do not put the amputated part directly in the water or ice. Take the amputated part or tissue to the emergency room with the victim. If possible, doctors may try to sew the amputated part back on to save it.



PUNCTURES AND IMPALED OBJECTS

The nature of accidents is that they are unexpected. That's why Jim wasn't prepared for his. One day he was careless. Suddenly, his hand slipped and the drill bit punctured his hand. If you were in this situation, you could use first aid to prevent Jim from going into shock, even from death.

Puncture First Aid

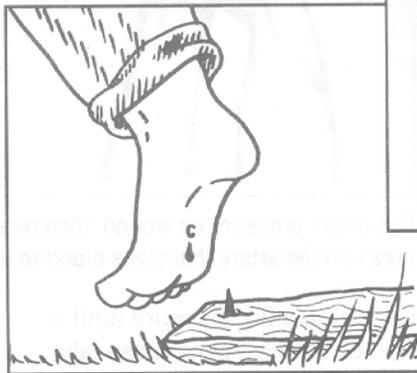
A puncture is a hole poked into a body part. A puncture wound could happen at work or at home, in the shop or in the kitchen. A small puncture should be allowed to bleed, so if something has been forced into the wound, it can flow out. But call a doctor even for a small puncture wound. It can get infected and you may need a tetanus shot if it's been too long since your last one.

If the wound is very deep, and won't stop bleeding, call for medical help right away. Then, take steps to control the bleeding. Using a sterile bandage or clean cloth, push very firmly directly on the wound. Wrap a bandage over the wound and tie it tightly. Keep pressure on the wound until medical help arrives. If you can't find a clean bandage or cloth, use your hands. If there are no broken bones, keep the injured body part higher than the victim's heart. Lay the victim down and keep him or her at rest. (If there are broken bones, do not move the limb.)

If bleeding is still out of control, continue to keep pressure on the wound, while pressing on the artery

If bleeding is out of control, push on the pressure point for that part of the body.

Allow small puncture wounds to bleed. Then see a doctor for a tetanus shot.



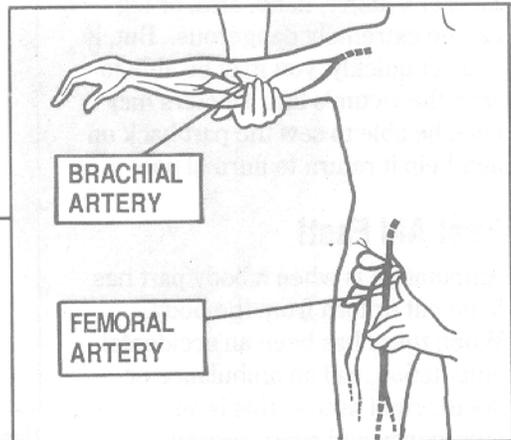
that gives blood to that area of the body (see illustration). The pressure point for the arm is on the inside of the arm on the same side of the body as the injury. For the leg, it's on the inside of the groin on the same side of the body as the injury.

Impaled Object

An impaled object is something that is stuck into the body. Any object impaled in a person causes a puncture wound. It's important not to try to remove the object. Control bleeding by pressing around the object with a clean dressing or your hand. If bleeding is out of control, push on the pressure point for that part of the body (see illustration).

If It's Life Or Death

It doesn't happen often, but sometimes an injury is so severe that the suggestions above don't stop bleed-



ing. If you feel it is a life and death situation, you may need to use a tourniquet. A tourniquet is a special way to wrap a body part tightly so that blood can't get through that part at all. If you must use a tourniquet, do not remove it—let a professional medical person do that. Otherwise, the victim may suddenly go into shock, a blood clot can be loosened, or the victim may even die.

To apply a tourniquet, tightly wrap a wide piece of cloth, towel, or other fabric just above an arm or leg wound. Never use wire, string, or anything that could cut the victim's skin. Wind the cloth around the limb two times. Tie the cloth in a knot. Put a stick in the knot, and tie two more knots to keep the stick in place. Then, twist the stick until the bleeding stops and leave it twisted tightly.

Then, treat the victim for shock—keep the victim warm, not hot, and lying down. If there are no neck or spine injuries, place the person's legs on a blanket or pillow so they will be higher than the head.



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MINOR BURNS

Burns can be caused by heat, electricity, chemicals, or radiation. How serious a burn is depends on how many layers of skin are burned and where the burn is located. *First degree* burns are painful. They damage just the outer layers of skin, which become red and slightly swollen. There may be a few mild blisters. *Second degree* burns are much more painful. The "underskin" is burned as well as the top layer, and there is usually blistering and swelling. The skin may be wet and shiny, and clear fluid may ooze. *Third degree* burns are the most serious because skin is destroyed. The victim may not feel pain in the area if nerve endings are destroyed. The burned area may be white, gray, or charred.

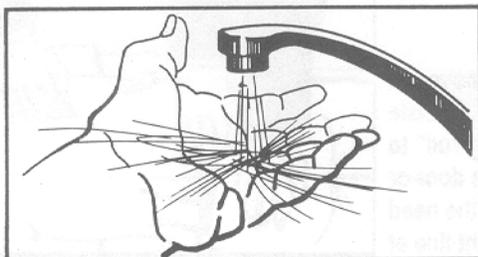
A Minor Burn

There are three kinds of burns: minor, moderate, and critical. A burn is called minor if it is first degree, or if it is second degree but covers 15% or less of the person's body. Even a third degree burn can be minor if it's covering just 2% of the body (like a small splash of chemical on someone's leg.) An important exception to this rule is any burn on the hands, feet, face, or genitals. If these areas are affected, the burn is generally considered moderate or critical.

Rules For Minor Burns

It's always important to eliminate the cause of the burn and to cool the area as quickly as possible. Even with a minor burn the person can go into shock. Symptoms include cold or clammy skin, weakness, nausea, and rapid pulse. If you notice these symptoms, keep the

Treat minor burns with cool water.



Follow first aid directions on the chemical container.

person comfortably warm (not hot) and lying down, and get medical help immediately.

Never use neutralizers, ointments, butter or any other substance unless you are told to by a medical professional. Don't try to clean or scrub the skin, and never break blisters. To flush a burn, use any running water you can find. After flushing, cover the burn with a sterile dressing.

Special Rules: Thermal (Heat) Burns

Rinse the area without scrubbing or immerse in cool water (you can add ice to the water) until the pain goes away. Then pat the burn dry with sterile gauze or bandage and keep it covered.

Special Rules: Chemical Burns

If you can find the container, follow directions on the label. For burns caused by a dry chemical like lye, brush the chemical off the skin and then flush for 15-20 minutes. For acid chemicals, flush the area immediately for 15-20 minutes. If a chemical burns someone's eyes, first flush them for 30 minutes and *then* get emergency medical treatment.

Special Rules: Electrical Burns

Avoid any contact with the electric current while you remove the victim from it. Make sure the victim's breathing and heartbeat are regular. Treat for shock and get medical attention if necessary. Check the places where the electricity entered and left the body. Treat minor burns there with cool water.



NECK AND SPINE INJURIES

Neck or spine injuries are most common in car accidents, sports accidents (like football and diving), and falls, especially a fall downstairs. Handling a victim carefully right after the accident can be a life-or-death matter.

Recognizing Symptoms

If an accident victim is found unconscious, assume that there has been a neck or spine injury. The back or neck may look deformed or black and blue. The victim may not be breathing. There may be cuts on the head, back, or neck. You can test an unconscious victim's body to see if there has been a spinal column injury by stroking the soles of the feet, ankles, or palms of the hands with a pointed object. If the spinal cord is damaged, the body will not respond.

If an accident victim is conscious, there may be pain in the neck or backbone. Sometimes, there is no feeling at all in the arms or legs, or there is just a tingling sensation. The victim may seem confused. Test a conscious victim's body in the same way as you would an unconscious victim. You can also ask the person "Can you wiggle your toes? Can you raise your legs? Can you press against my palm?" If the answer is no to any of these questions, there is a good chance of neck or spine injury.

What To Do

First, call an ambulance or medical help immediately. *Don't move the victim unless absolutely necessary—*

unless the victim is in extreme danger, for instance, in the path of an approaching fire. If movement is necessary, keep the victim's back and neck lined up at all times. To make sure breathing starts or continues, you may need to gently pull the lower edges of the jaw towards the top of the head to open the airway. Make sure not to tilt the head itself. Use rescue breathing if breathing has stopped. Keep the entire body in a straight line and as still as possible.

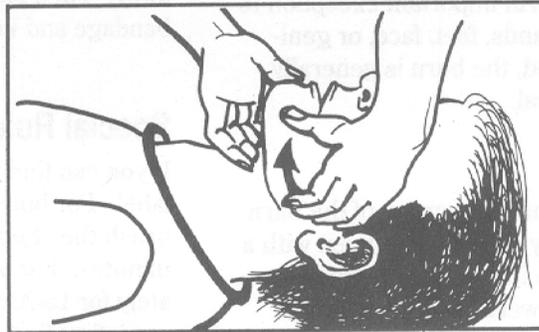
If you *must* move the victim, you will need four people. One should support the victim's head and keep it in line with the neck. The others should use a "log roll" to move the victim onto a wide board which will act as support. Gently secure the victim to the board so that the body

is unable to move. If you must carry the victim, do not allow the head to be lower than the feet.

Check for head or other wounds. Clean, rinse, dry, and cover small cuts. For a large wound, apply gentle but direct pressure to the wound to stop bleeding. Treat the victim for shock. Cover with blankets and keep warm, but not hot. Do not give any food or fluids.

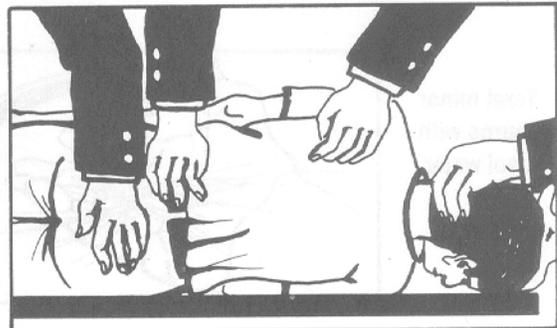
Until Help Arrives

A neck or spinal injury can be very dangerous. Continue to check the victim's breathing, and do rescue breathing if necessary. If the victim is conscious, he or she may be very frightened. Speak in a calm voice and maintain contact with the victim until help arrives. 



To aid troubled or stopped breathing, gently pull the lower edges of the victim's jaw toward the top of the head. *Do not tilt the head itself.*

If a victim *must* be moved to protect from immediate danger, use a "log roll" to move the victim onto a door or wide board, keeping the head and neck in a straight line at all times.



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HEAT STROKE

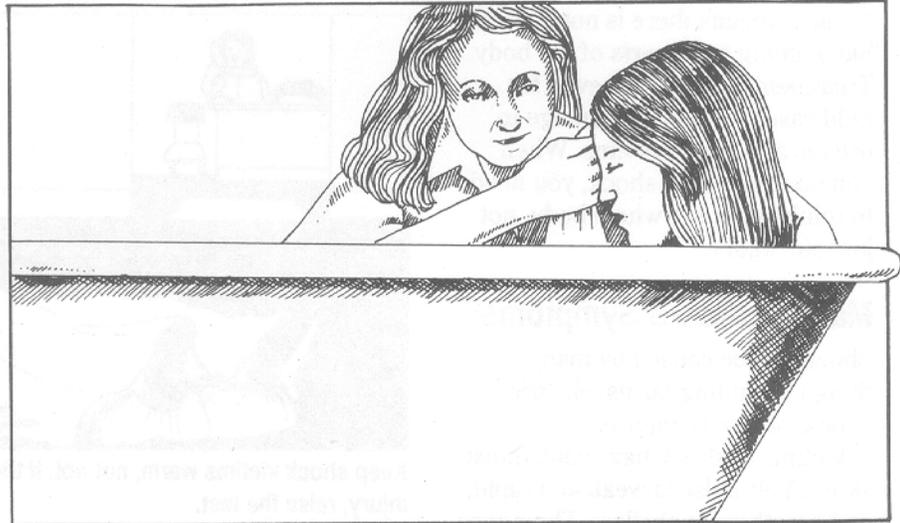
When it comes to heat, your body is like a car. If either one overheats, it can cause minor or major problems. But knowing what to do can help your body (or your car for that matter) to keep running. When a person has heat stroke, it's like a car running with almost all the water boiled out of the radiator. It's very serious, and can lead suddenly and without warning to a complete breakdown.

Losing Your Cool

As you move, your body heats up. Your body keeps cool by sending blood close to your skin, and by sweating. When the temperature is above 90°F, when the humidity is high, or when the sun is beating down on your head, it's difficult to stay cool. When they are in extreme heat, people can suffer heat cramps and exhaustion. These are unpleasant and can be somewhat serious. But, if they suffer heat stroke, they run the risk of brain damage and even death.

Symptoms of Heat Stroke

When the body overheats, it can go into crisis. Usually we sweat when we're hot, but when someone has heat stroke, there is no sweat, and the skin is very dry and hot. Other symptoms include strong, fast pulse, very high temperature (106°—112°F), and confused, strange, or angry behavior. The person may feel chilled, nauseated, or dizzy, and soon becomes unconscious.



Act Immediately

Contact an ambulance right away. If the person has stopped breathing, use artificial respiration to get breathing going again. Move the victim to a cooler area, and if possible, soak the person in a cool bath. Use a fan or cold packs if available. Keep the victim lying down with feet raised.

Avoid Heat Stroke

If you know you'll be exposed to greater heat or humidity than normal, take several days to get used to it by spending time in similar conditions. Take frequent breaks and drink plenty of cool water. Even when you're not thirsty, your body is losing fluid which needs to be replaced. Alcohol makes it harder for your body to keep cool, so avoid alcohol when you do hard work in hot weather. ❏

Soak heat stroke victim in cool bath to reduce body temperature.

Drink plenty of cool water when you are exposed to extreme heat.



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SHOCK

“Shock” means there is not enough blood going to all parts of the body. Treatment is important even for mild cases, to prevent damage to organs and body systems. When you do first aid for shock, you need to think about the whole body, not just one injury.

Many Causes & Symptoms

Shock can be caused by many things, including burns, electric shock, or severe injuries.

Victims of shock have cool, moist skin. Their pulse is weak and rapid, and breathing is shallow. Their eyes are dull, skin pale, and pupils may be dilated.

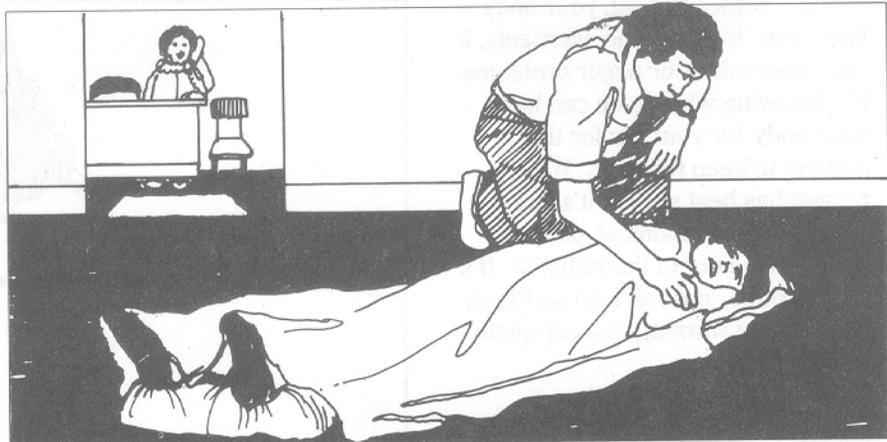
Other symptoms may include nausea, vomiting, or trembling. Victims may have difficulty thinking or speaking clearly, and they may be frightened. They may be unconscious.

Allergic Shock

Some people have very sensitive bodies. For them, common substances such as penicillin, berries, or pollen cause serious reactions, including shock and even death within minutes.

The victims will show special symptoms. They may have hives. Their skin may itch or burn. Their tongues or face may swell. They may have trouble breathing. Their chests may tighten. Eventually they may become unconscious.

Some people who know of their special allergies carry life-saving medication with them. If you are providing first aid in this situation,



Keep shock victims warm, not hot. If there is no spine, neck, head or abdomen injury, raise the feet.

give the medicine immediately.

Severely allergic people may show their first reactions as children. The first bee sting or taste of shellfish for these children can be very dangerous.

Treating Shock

When a victim shows shock symptoms, call the doctor, emergency room or poison control center. Then check to make sure the victim is breathing. If not, begin rescue breathing immediately.

Speak calmly to the victim in a reassuring voice. If the victim is upset, it can make the effects of shock worse.

If the victim has vomited, check to see that there is no neck or spine injury. If there is none, turn the victim to the side and clear the mouth.

Next, find and treat the cause of shock. For example, control any bleeding. Or for electric shock, turn

off the current and then assist the victim. If you don't see a switch, you may need to use a rope or belt to pull the victim away. Do CPR (“cardiopulmonary resuscitation”) if you are trained, and if breathing and pulse have stopped.

Keep the victim lying down. Check for neck, spine, head or abdomen injuries. If there aren't any, raise the feet on blankets or a pillow.

Keep the victim comfortable and warm, but not hot. Loosen tight clothing to make breathing easier. Keep people away who might upset the victim.

Until You See The Doctor

First aid is always what you do *until* a doctor can see the victim. You can reduce the effects of shock by keeping damage from any other injury to a minimum. Calming the victim through a caring touch or word can help.





TRANSPORTING AN INJURED PERSON

If an accident victim must be moved in order to obtain medical help, *how* you transport the victim can be an extremely important job. If you do it properly, the person will see trained medical people more quickly, and will have a better chance for healing. Because there are so many different kinds of injuries, transportation can be as simple as two people carrying a third whose ankle is twisted. It can be as complicated as getting a heart attack victim to the hospital safely.

Always practice first aid for the injury before moving the victim unless you are in such a serious emergency—such as fire—that waiting to move the victim might mean death. First aid includes checking for breathing, doing rescue breathing, stopping bleed-



Two-person carry.

ing, splinting broken bones, treating for shock, and doing CPR (cardiopulmonary resuscitation). Finish all you can do safely, and call a doctor or emergency room. Remember, whenever possible, it is best not to move the victim at all until professional help arrives.

If You Must Move A Victim

If you *must* move the victim, there are a number of ways to accomplish your task, depending on whose or what help is available. The way least likely to cause further injury is four people using a stretcher. Test the stretcher first with someone who is not injured and who weighs at least as much as the victim. If there is a possibility of a spine, neck or head injury, the victim's body must be kept in a straight line, rolled onto a board, and secured

before placing on a stretcher.

There are several two-person carries: with both persons carrying the victim in a chair; with one person holding the victim under the arms and one under the knees; or with both helpers placing their shoulders under the victim's shoulders, whose arms are around the helpers' necks (see illustrations).

If the victim is in extreme danger and there is no stretcher or other helper available, you may need to drag the victim to safety. This should only be done if absolutely necessary, since this kind of movement can make an injury much worse. To drag a victim, place a blanket under him or her, and pull the end closest to the victim's head. With no blanket, pull by the shoulders, or do the one-person carry (see illustration.)



One-person carry.



Two-person chair carry.