

Environmental Safety; Accident Prevention, Electrical Safety, and Ergonomics

Accident Prevention

The worker's role in hospital safety

Each worker has a personal responsibility in recognizing safety hazards and preventing accidents in the hospital.

Actions that help you to be a responsible worker include:

- Have your eyes checked regularly. Your sense of sight helps you to be aware of safety hazards.
- Come to work well rested. When you are tired, you are more likely to be careless or miss seeing a hazard.
- Don't be in too much of a hurry. Take smaller steps and watch for warning signs such as "WET FLOORS." If you have to walk on a wet floor, take it easy.

Keeping the hospital safe is **everyone's** job.

Causes of accidents

When people come to a hospital, they expect to be safe. But accidents **can** happen.

Possible causes of accidents in the hospital are:

- Wet floors or puddles
- Standing on an unstable object (such as a rolling chair) to reach something on a high shelf
- Burned out lights in stairwells and hallways
- Cords stretched across the floor and boxes or carts cluttering walkways.

Accidents can be prevented if workers recognize hazards/causes and respond to them.

How to prevent accidents

Most accidents can be prevented if you do one of two things:

1. REMOVE the problem
2. REPORT the problem

If you REMOVE a problem, it is eliminated or taken away so that it will not cause an accident for you or anyone else.

If you see a problem that you cannot remove, call or contact the appropriate department about the problem. Once you REPORT it, someone will remove the problem.

Some examples of how you can prevent accidents are:

- If you see a puddle and wipe it up before someone slips, you REMOVE the problem. If the puddle is too large to easily wipe up, you should REPORT it to your Housekeeping or Environmental Services Department.

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- If you see a burned out light, REPORT it. Proper lighting is important in areas such as stairwells, loading docks and parking areas.
- REMOVE or REPORT extended cords and other objects such as boxes, books or equipment to keep walkways clear and safe.
- REPORT any hazard immediately. Do not assume that someone else has reported it.

How to respond to accidents

If an accident does happen, remain calm.

If you are injured tell your supervisor. If you need treatment, see your Employee Health Nurse or go to the Emergency Department. If you are seriously injured or think you might have broken bones, do not move - moving could make an injury worse. Call for help and/or wait for someone to come to help you. Be sure to tell them what caused your accident so they can remove or report the problem.

If another person is injured, wait for someone to assist you. While lifting or moving an injured person, you can hurt yourself. Use a wheelchair or a stretcher to take the person to the Emergency Department for treatment. If the person is seriously hurt or unconscious, wait with the injured person while someone calls for help. If there is any possibility of a back, neck, or head injury, the injured person should not be moved.

Once you have taken care of an injured person, report the accident. If you know the cause of the accident, report it so the problem can be removed.

All accidents **do** need to be reported.

Electrical Safety

Electrical conductors and insulators

Understanding the difference between conductors and insulators helps to explain how people can safely touch an electrical cord while equipment is turned on and why damaged cords are dangerous.

Materials that allow electricity to move through them are known as conductors. Conductors include:

- Metals such as copper, silver, gold, aluminum, and iron
- Liquids such as water, saline, blood, and urine
- The human body.

Insulators are materials that do not let electricity move through them. Examples of insulators are:

- Rubber
- Glass
- Dry cloth
- Paper
- The ground
- Wood.

An electrical cord is made of wires that are conductors (usually copper), which are covered with an insulator, such as rubber. People can safely touch an electrical cord while equipment is turned on because the insulator stops electricity from traveling outside the cord.

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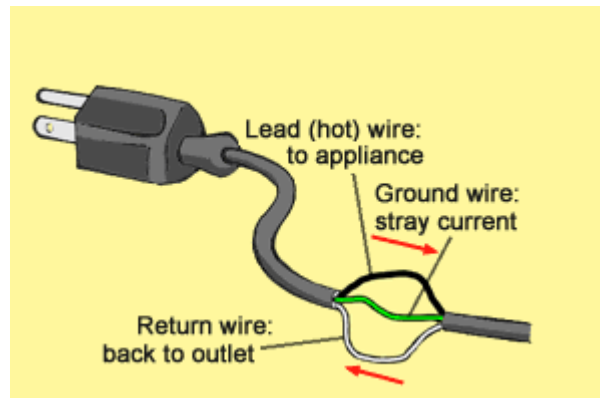
If the wires are not covered or the insulator is damaged, and the equipment is turned on, you can receive a shock or injury.

Electricity follows a path

Electricity travels down wires from an electrical source (the wall outlet) to the electrical equipment and back again to the electrical source. This path that the electricity follows from the outlet to the equipment and back to the outlet is called a circuit. If there is damage at any place in the circuit, electricity can leak out.

Three wires make up the circuit.

- The first wire, called the lead wire or the hot wire, conducts the electricity from the outlet to the equipment.
- A second wire conducts the electricity from the equipment back to the outlet.
- Cords that have a third pin on the plug, have a third wire that conducts any stray electricity from the equipment to that pin. The third pin is called the ground pin and it is a safety feature. It allows excess electricity to return to the earth, which is an insulator.



The three wires in an electric cable are the hot wire, the return wire, and the ground wire

Electricity leaking from a broken electrical cord can cause a fire if it is near flammable material. The leaking electricity can also cause electrical shock or injury to people.

Rules about electrical cords to protect you, fellow employees, patients, and visitors from harm:

DO:

- Keep cords out of the way of traffic.
- Take electrical equipment with faulty cords or visible wires out of service and have them checked.

DO NOT roll beds, wheelchairs, or other equipment, over an electrical cord. This can break the wires and damage the cord.

Safe electrical plugs

All electrical plugs should have three pins or prongs. The third pin, called the ground pin, is a safety feature. It allows excess current or leaking electricity to return to the earth. The ground pin is shaped differently from the other two.

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Cheaters are plug adaptors that have two pins to plug into the wall outlet. A plug with three pins fits into the other end of the adaptor. The adaptor therefore cheats the three-pinned plug (by making it two-pinned) and cheats people of the ground pin safety feature. Never use cheaters.

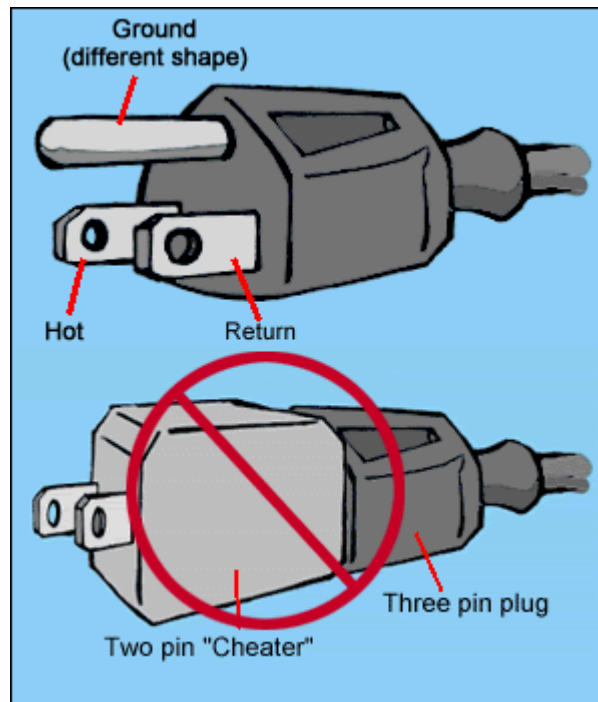
Rules about electrical plugs to protect you, other employees, patients, and visitors from harm:

DO:

- Use only electrical equipment with three pins on the plug.
- Look at plugs for loose or broken pins or for any melted areas.
- Unplug equipment by handling the plug itself and not the cord.

DO NOT:

- Use plugs with broken pins or with only two pins.
- Pull on an electrical cord to unplug equipment. Pulling can damage the cord.
- Use cheaters. Cheaters are adaptors that convert three-pin plugs into two-pin plugs.



Safety means looking at plugs and using them correctly

Keep electrical equipment safe

If electrical equipment is broken, electricity can leak out. The leaking electricity can cause a fire, if it is around flammable material. It can also give somebody a shock.

If you receive a shock when using electrical equipment, immediately turn it off. Take it out of service so it can be repaired.

Rules about electrical equipment to protect you, fellow employees, patients, and visitors from harm:

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DO take electrical equipment out of service and report it if the equipment:

- Smells "hot"
- Has smoke coming out of it
- Is not working properly
- Has had a liquid fall into it.

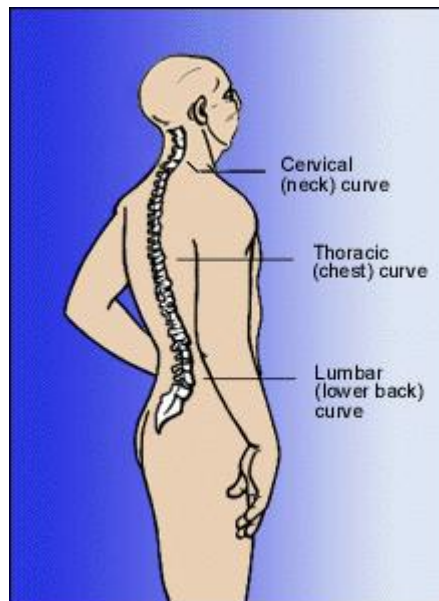
DO NOT:

- Use electrical equipment in wet areas.
- Touch electrical equipment with wet hands.
- Plug too many appliances into a wall outlet. The overload may cause overheating of the wires and result in a fire.

Back Safety

Anatomy of the back

Your back or spinal column is the main support structure for your body. It carries most of the body's weight and is the main pathway of the nervous system. The back is composed of 24 moveable bones called vertebrae. Each vertebra is separated from the next by a cushion-like pad called a disc that absorbs shock. The vertebrae and discs are supported by ligaments and muscles that keep the back aligned in three balanced curves. These three natural curves form an **S-shape** when your posture is correct.



Your back has three natural curves that form an S shape when your posture is correct.

A healthy back is a balanced back - your neck, chest and lower back curves are all properly aligned. You know your back is aligned properly when your ears, shoulders, and hips are in a straight line. Anything that forces the back out of its natural **S-shape** can strain the muscles and damage the discs. When any part of the back becomes diseased or injured, back problems and pain are almost certain to follow.

Causes of back injury

Back injuries are one of the most common types of injuries in the workplace and also one of the most common reasons that people miss work. One study showed that 50-70% of all workers will have some kind of lower back pain at least once. A single back injury can affect you for the rest of your life. Besides the pain it causes, the injury can also keep you from doing many of the things you like to do.

Back injuries happen when you:

- Lift things that are too heavy - INSTEAD, you should get someone to help or use a cart or dolly to move heavy objects
- Twist back muscles - INSTEAD, you should always turn your body to face the object you want to lift even if it isn't heavy
- Bend at the waist to lift - INSTEAD, you should bend at the knees letting the stronger muscles of your legs do the lifting
- Use back muscles instead of leg muscles to lift - INSTEAD, you should get close to the object you want to lift using your leg muscles to do the lifting
- Pull heavy objects - INSTEAD, you should push objects such as rolling beds or stretchers, using your leg muscles.

Techniques to protect your back

Many back injuries happen when people lift things incorrectly. Here are some pointers about lifting safely.

DO:

- Get help, if you need to move something that is too heavy
- Use carts or dollies, when possible, to carry heavy objects
- Get directly in front of anything you need to lift so you can use your leg muscles. Reaching forward takes your body out of alignment
- Hold things close to your body, when lifting and carrying
- Face your load. If you need to turn, move your feet and never twist your back
- Use two hands to lift. If you only use one hand, you will be off-balance and your back muscles will not be set properly
- Take frequent stretch breaks, if you are doing a lot of lifting.

DO NOT:

- Try to lift something that is too heavy
- Twist or turn your back while lifting
- Try to lift something over your head. This will make you use your back muscles instead of your leg muscles.

Follow these steps when lifting:

- Stand with your legs apart (about the width of your shoulders) and keep your back straight.
- Bend your knees and squat, keeping your heels off the floor.
- Tighten your stomach muscles and keep your chin tucked in.
- Pick up the object in a smooth motion and hold it close to your body, hugging the load.
- Straighten your knees.

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- Once you are standing, change direction by pointing your feet in the direction you want to go and turning your whole body. Avoid twisting at the waist while carrying the load.
- Remember to keep your ears, shoulders, and hips in a straight line maintaining the three natural curves of your back.
- When you put the object down, follow the same steps in reverse.

Good health habits also protect your back.

- Get enough rest so that you are able to think clearly. People make mistakes more frequently when they are tired or under stress.
- Don't smoke. Nicotine robs the body of oxygen that the muscle cells need to work well. It also decreases blood flow to the muscles.
- Eat healthy. Being overweight puts extra stress on back muscles.
- Exercise to strengthen back, stomach, hip, and leg muscles.

Your facility may require that you wear a back belt if your job involves routine lifting. If you use a back belt, remember to tighten it before you lift anything. That is the only time it should be tightened.

Exercises for your back

Most people do not exercise on a daily basis and when they do, it is often without the proper preparation.

Check with your doctor before you begin any exercise program. Try to exercise every other day. Inhale deeply before each repetition and exhale when performing the repetition.

The following exercises are from the American Academy of Orthopedic Surgery:

Wall slides to strengthen back, hip, and leg muscles

Stand with your back against a wall and feet shoulder-width apart. Slide down into a crouch with knees bent to about 90 degrees. Count to five and slide back up the wall. Repeat five times.

Leg raises to strengthen back and hip muscles

Lie on your stomach. Tighten the muscles in one leg and raise it from the floor. Hold your leg up for a count of ten and return it to the floor. Do the same with the other leg. Repeat five times with each leg.

Leg raises to strengthen stomach and hip muscles

Lie on your back with your arms at your sides. Lift one leg off the floor. Hold your leg up for a count of ten and return it to the floor. Do the same with the other leg. If that is too difficult, keep one knee bent and the foot flat on the floor while raising the other leg. Repeat five times with each leg.

Alternative leg raises

You can also sit upright in a chair with legs straight and extended at an angle to the floor. Lift one leg waist high. Slowly return your leg to the floor. Do the same with the other leg. Repeat five times with each leg.

Partial sit-up to strengthen stomach muscles

Lie on your back with knees bent and feet flat on the floor. Slowly raise your head and shoulders off the floor and reach with both hands toward your knees. Count to ten. Repeat five times.

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Back leg swing to strengthen hip and back muscles

Stand behind a chair with your hands on the back of the chair. Lift one leg back and up while keeping the knee straight. Return slowly. Raise the other leg and return. Repeat five times with each leg.

Office Ergonomics

What does ergonomics mean?

Ergonomics is about the design and arrangement of things so people and things interact safely and efficiently. The study of ergonomics is used to design things like chairs or work areas, so that the job gets done well and the worker is safe from injury.

Workers should know about ergonomics so they can:

- Avoid repetitive motions that cause repetitive stress injuries (RSI)
- Maintain proper body alignment
- Set up their work area to prevent personal injury.

When workers do not know those three things, injuries can occur.

Repetitive stress injuries at work include:

- Carpal tunnel syndrome
- Tendonitis
- Back injury

Carpal tunnel syndrome

Carpal tunnel syndrome is an RSI to the wrists. It can be caused by typing for long periods of time while using poor hand and wrist positions. It causes pain, weakness, and changes in sensations such as coldness, tingling, or numbness.

Tendonitis

Tendonitis is inflammation of the "tendon" - the cord that connects a muscle to bone. Repetitive motions on a single body part can cause tendonitis, resulting in pain, tenderness, limited movement and swelling. Repeated overuse of the wrist (in typing), the arms (lifting heavy objects), the legs (carrying a lot of weight), and other body parts can cause tendonitis.

Back injury

Many back injuries are caused by not lifting properly, lifting things overhead, pulling instead of pushing heavy objects, twisting or turning the back while lifting, being off balance by lifting with one hand, and being overweight.

Protect yourself from RSIs that usually cause pain, result in loss of time at work, and keep you from doing things you like to do.

Good posture for good health

Back injuries are one of the most common workplace injuries. Back injuries are caused by poor posture, poor lifting habits, and poor health.

Prevent back injury by keeping good posture when sitting and standing, using good lifting techniques, and maintaining good general health.

Good posture

Your back has three natural curves that form an **S-shape**. To keep your spine well aligned and

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moving smoothly, you must maintain the balance of these three curves. This alignment reduces stress on the spine and helps prevent back injury. Your back is aligned in good posture when your ears, shoulders, and hips are in a straight line.

Along with good posture, you should:

- Change positions frequently
- Alternately relax and stretch your muscles
- Move around to improve circulation, comfort, and flexibility.

Lifting techniques:

- Stand with your legs shoulder width apart.
- Keep the back straight while bending the knees and squatting.
- Pull the object close to your body.
- Tighten your stomach and lift your head.
- Rise using your leg muscles.
- Keep your ears, shoulders, and hips in a straight line.

Good health for good posture:

- Maintain a healthy weight.
- Condition your back.
- Exercise regularly.
- Get plenty of rest.

Good posture when standing, sitting, and lifting, and good general health help to prevent back injuries.

Your computer workstation and your health

When your job involves sitting at a desk and using a computer for much of the time, you are at risk for injuries. If you set up your workstation to meet your needs and keep good body posture while at the computer, you can avoid injury.



Set up your workstation as follows:

Monitor

Place the monitor directly in front of you. Position the top of the monitor screen at or below eye level and an arms length or about 22 inches away. Tilt or swivel the monitor screen to avoid glare.

Chair

Choose a chair that is adjustable in height. The seat should be about 2 inches away from the back of your knees. Use the backrest of the chair for full support of the lower back. Sit up straight maintaining the natural curves of your neck and back.

Keyboard

Sit in front of the "J" on the keyboard. Relax your shoulders. Allow clearance for knees under the keyboard. Bend arms and forearms at a 90° angle and keep your hand aligned with your forearm.

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Mouse

Place the mouse at the same height as the keyboard and close to the keyboard to avoid reaching and shoulder stress. Use the keyboard rather than the mouse when possible. Keyboard shortcuts are available to replace many mouse actions and thereby reduce the stress on arms and shoulders.

Support for work tasks

There are tools to help prevent injuries in the office and to help you do your job well.

Several support tools are available:

- A document holder is used to place documents close to the computer screen and at the same height and distance as the screen. A holder decreases stretching and reaching.
- A wrist rest can be used to rest the palms of your hands when you are not typing.
- A cradle that holds the phone and supports it on your shoulder should be used if you often tuck the phone between your ear and shoulder. The cradle keeps your ear and shoulder in alignment.
- Use carts or dollies to carry heavy objects when possible.

End of Environmental Safety Lesson