EYE SAFETY

Avoiding Eye Injuries

Wear the appropriate protective eyewear for the specific hazards you face.

Of all of our senses, the one most precious perhaps is our sense of sight. Yet each year, thousands of us suffer eye injuries that impair our vision or deprive us of our sight altogether. These injuries are, to a large extent, avoidable. In fact, over 90% of all eye injuries can be prevented by following established safety guidelines and using the appropriate protective eyewear for the tasks we perform.

Recognizing Eye Hazards
Among the most common eye hazards are flying particles, a hazard typical of many machine operations such as grinding, sawing, etching, and so on. Dusts (such as wood, metal, and other airborne particles), sparks (common in welding), and fumes and splashes (from molten materials or chemicals) can all cause eye injury unless the appropriate protective eyewear is used. Harmful light rays (common in arc and electrical welding, furnace operations, and work using acetylene equipment) can cause painful eye burns unless your eyes are adequately protected. The following guidelines for on-the-job eye safety can help you save your sight—for life.

Eye Safety Checklist
- Be alert to the eye hazards present at your worksite.
- Wear the appropriate protective eyewear—glasses, goggles, and/or hoods, face shields and welding helmets—provided by your employer for the specific hazards you face.
- Remember that regular eyeglasses or contact lenses will not protect you from eye hazards—if you must wear corrective lenses, you'll need to wear protective eyewear over them.
- Check to see that your protective eyewear meets ANSI (American National Standards Institute) standards.
- Make sure that your protective eyewear fits properly and is clean and in good condition before and after each use.
- Replace faulty eyewear immediately.
- Follow established safety guidelines.
- Learn basic first-aid for eye injuries.
- Know where all eyewash stations and emergency equipment are located.
- In the event of eye injury, get medical attention immediately.

A SPECIAL NOTE . . .
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.

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.

©1988 PARLAY INTERNATIONAL
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.

A SPECIAL NOTE...

- Check gloves for cracks and holes, especially at tips and between fingers.
- Replace worn or damaged gloves promptly.
- Keep gloves clean and dry.
- Make sure gloves fit properly. A small glove tires the hand and a large one is clumsy.
- Check the MSDS for a particular glove recommendation when working with chemicals.
- Cover all cuts before putting gloves on.
- Wash hands often to prevent build-up of sweat and dirt.
CHOOSING AND USING PROTECTIVE HEADWEAR

Head injuries may not be the most commonly-reported industrial accident, but they are by far among the most devastating. One serious blow to the head can leave an otherwise strong and healthy person permanently brain-damaged or disabled for life. All of us know the importance of wearing head protection on the job, but it’s equally important to select and wear the right hat for the specific hazards you face. The following is a guide to the most common types of protective headwear and the types of hazards they can guard against.

**Hard Hats**
As their name suggests, the outer shell of these hats are made of rigid, impact-resistant, non-flammable materials such as fiberglass and thermoplastics. The shell is held on your head by a network of straps and harnesses: crown straps which fit over the head itself and cushion impact; an adjustable headband that secures the hat to your head; and chin or nape straps to prevent the hat from being accidently bumped off your head. A full-brimmed hard hat (such as the type worn by firefighters) protects against blows to the entire head, neck, and shoulders. A visored hard hat (front-brim only) does not protect the sides of the head or the neck and shoulders, but is often used when working in confined spaces.

**Bump Caps**
Bump caps do not protect against blows to the head or other serious impacts such as falling objects. Made of lightweight plastic, these hats guard against minor bumps only. Bump caps should never be used in place of hard hats. Bump caps are commonly used when working in confined spaces where there are no serious head hazards.

**Hair Covers**
Hair covers made of breathable fabric or lightweight materials are often required when working around machinery. This type of headwear is usually adjustable (to ensure proper fit) and may have a front visor (to let you know if you are getting too close to your machine.) Hair covers help prevent hair from becoming caught in moving machine parts.

**Using Protective Headwear**
Although these are the most common types of protective headwear, your particular job may require that special safety accessories be added to your basic head protector. For example, thermal liners may be required if you work in extremely cold temperatures; lamp brackets may be attached if you work in dark areas; or face shield mounts may be needed if you are also exposed to flying particles. (Note: Face shields alone do not protect against flying particles. Protective eyewear is also required.) To keep your protective headwear in top condition, check it before and after each use. Are all straps secure and working properly? Is there any damage to the outer shell? Does it fit correctly? Is it clean? Remember, though, in order for your protective headwear to work, you have to wear it.

---

**A SPECIAL NOTE...**
- Adjust the headband to the proper size so there is adequate clearance between the shell and headband.
- Check daily for signs of cracks, penetration, or other damage.
- Do not drill or punch holes in the helmet shell to gain ventilation.
- Store in a clean, dry location — not in sunlight.
- Do not paint hard hats.
CHOOSING AND USING EYE PROTECTION

Safety Glasses And Goggles

No matter where we work, flying particles, dusts, fumes, vapors, harmful rays, are apt to expose us to potential eye injury. Fortunately, we can protect against these hazards by using the appropriate protective eyewear for our jobs and by following our companies' established safety guidelines. The following is a guide to the most common types of protective eyewear and the specific hazards they can guard against.

Safety Glasses

Standard safety glasses look very much like normal glasses, but are designed to protect you against flying particles. Safety glasses have lenses that are impact resistant and frames that are far stronger than regular eyeglasses. Safety glasses must meet the standards of the American National Standards Institute (ANSI). (Safety glasses are also available in prescription form for those persons who need corrective lenses.) Standard safety glasses can be equipped with side shields, cups, or tinted lenses to offer additional protection.

Safety Goggles

Like standard safety glasses, goggles are impact resistant and are available in tinted lenses. Goggles provide a secure shield around the entire eye area to protect against hazards coming from many directions. Safety goggles may have regular or indirect ventilation. (Goggles with indirect ventilation may be required if you are exposed to splash hazards.)

Shields and Helmets

Face shields and helmets are not in themselves protective eyewear. But, they are frequently used in conjunction with eye protectors. Full-face shields are often used when you are exposed to chemicals or heat or glare hazards. Helmets are used when welding or working with molten materials.

Using Protective Eyewear

You can guard against eye injury by making sure that you are wearing the appropriate protective eyewear for the particular eye hazards you face. It's important to remember that regular glasses alone do not offer protection from eye hazards. Follow your company's established safety procedures, and never hesitate to ask your supervisor if you have any questions about what you can do to protect your sight for life.
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.

A SPECIAL NOTE...

- Select safety shoes or boots at the end of the day when the feet are a bit swollen.
- Have both feet measured.
- Inspect footwear for cracks and holes prior to use.
- Store in a clean, dry location.
- Select and use the right kind of footwear.
- Replace worn or torn footwear.
- Avoid leather and cloth footwear when working with acids and caustics.

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).

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. Features such as slip-resistant soles, for example, will vary from one shoe to the next, depending upon the type of slip hazard. 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.
CHOOSING AND USING HEARING PROTECTION

Muffs, Plugs, And Canal Caps

Silence may be golden—but not when it's permanent. Hearing loss is a condition that occurs over time from repeated exposure to excessive noise. We can't always prevent noise, but we can prevent hearing loss by following established safety procedures and using the appropriate hearing protectors for the noise hazards we face each day. The following is a guide to the most common types of hearing protectors and the types of hazards they can guard against.

Muffs cover the entire ear and can reduce noise by as much as 15-30 decibels.

Ear Muffs
Ear muffs come in many styles. Most are attached to spring-loaded headbands, while others are attached directly to safety headgear. Specialized muffs are also available for persons who work in high-voltage exposures, or who need to filter out hazardous noises while retaining acute hearing for normal sound ranges. Muffs cover the entire ear and can reduce noise by as much as 15-30 decibels. (Muffs are often used in conjunction with ear plugs when a worker is exposed to extremely high noise levels—105 decibels and above.)

Ear plugs are positioned in the outer part of the ear and may reduce noise by as much as 30 decibels.

Ear Plugs
Like muffs, ear plugs come in many varieties—formable, custom-molded, pre-molded, disposable, reusable—and may be made of many different types of materials such as acoustical fiber, silicone, rubber, or plastic. Ear plugs are positioned in the outer part of the ear and may reduce noise by as much as 30 decibels. (Excessive noise is commonly defined as 85-90 decibels or more over an 8-hour period.)

Canal Caps
As their name suggests, these hearing protectors cap off or close the ear canal at its opening. Like canal caps are most commonly used when an individual is unable to use traditional ear plugs.

many muffs, canal caps are connected to a flexible headband that ensures a close fit. Canal caps are most commonly used when an individual is unable to use traditional ear plugs.

Using Hearing Protectors
Your supervisor can help determine the amount of noise you are exposed to on-the-job through various testing devices and will provide you with the appropriate type of hearing protection for the particular noise hazards you face. But remember, hearing protectors only work when you use them correctly and consistently. Depending on the type of hearing protectors you use, dispose of or replace them as necessary. For reusable protectors, follow the manufacturer's guidelines for cleaning and storage. When it comes to your hearing, an ounce of prevention is worth a pound of cure.
HOW NOISE AFFECTS HEARING

Understanding Hearing Loss

Hearing loss is a normal part of the aging process. Throughout our lives we are exposed to loud noises and physical conditions that add up to gradual loss of hearing. But many of us lose our hearing prematurely by failing to protect ourselves from excess noise both at home and at the workplace. Understanding how hearing works can help you realize the importance of protecting your hearing now, before it's too late.

How Hearing Works

The ear is composed of numerous delicate structures designed to carry sound waves to the brain. The hair cells in the inner ear are particularly important because they stimulate the auditory nerve which transmits impulses to the brain. The brain translates auditory impulses into the sounds that we hear. When the ear's hair cells become damaged due to excess noise exposure, the auditory nerve is not sufficiently stimulated, the brain does not receive the appropriate sound signal, and we fail to hear correctly. And, when hair cells are damaged by prolonged over-exposure to loud noise, they “die” and cannot be replaced, resulting in permanent hearing loss.

Excess Noise Exposure

Noise is measured in units called decibels (dBs or dBA). Excess noise is generally considered to be exposure to 85-90 decibels or more over an 8-hour period. A typical automobile horn can be as loud as 120 decibels, but hearing a horn honk for 10 seconds is unlikely to cause hearing loss. If you had to listen to the horn blast for 8 hours straight, though, you could very well experience gradual, permanent loss of hearing. Or, if you work in a factory and are exposed to 80 decibels of noise over a 4-hour period, you might not be at risk. But, if you then went home and operated a power mower or tools, listened to high-volume music, or perhaps practiced at the shooting range, you could very well exceed your safe noise exposure limit.

Protecting Your Hearing

On or off the job, you can protect your hearing by wearing the appropriate personal protective equipment recommended for your tasks. Ear muffs, plugs, and canal caps can all reduce the amount of noise your ears are exposed to. It also helps to know the decibel range or noise level of some common activities and situations to see if you may be exposing yourself to too much noise. Remember that even loud vacuum cleaners, dishwashers, and home power tools can create excessive noise, so protect your hearing wherever you are.

©1988 PARLAY INTERNATIONAL