



# Eye Injury Prevention Fact Sheet

Each day, an estimated 2,000 workers suffer eye injuries on the job, which not only robs many of them of their sight, but also costs employers and insurance companies millions of dollars a year. These injuries incur more than \$924 million annually in workers' compensation, and nearly \$4 billion in wage and productivity losses, according to the U.S. Bureau of Labor Statistics (BLS). No dollar figure can adequately reflect the personal toll these accidents take on the injured workers. "Yet 90 percent of all workplace eye injuries are preventable with the use of proper eyewear and safety measures," said Daniel D. Garrett, Prevent Blindness America (PBA) spokesperson.

According to the U.S. Consumer Product Safety Commission, in 2002, welding equipment contributed to more than 11,000 eye injuries treated in U.S. hospital emergency rooms, with power grinders and buffers coming in second with nearly 10,000 eye injuries. Many other tools contribute to eye injuries



if used improperly and without safety glasses. Hand and power tools such as saws, drills and sanders present a danger to eyes when precautions are not taken.

All safety glasses and goggles should be American National Standards Institute (ANSI Z87.1) certified for industrial eye protection, with the Z87 mark on the frames or lenses. In certain industries, a face shield and goggles should be absolutely mandatory to protect workers from chemical splashes, or welding light and electrical arc.

## **What Contributes to Eye Injuries at Work?**

Not wearing eye protection, or wearing the wrong kind of eye protection for the job. Three out of every five workers who had eye injuries were not wearing eye protection at the time of the accident. Of the employees who were wearing eye protection were injured, these workers were wearing the wrong type of eye protection for the job.

## **What Causes Eye Injuries?**

Flying particles. BLS found that almost 70 per cent of the accidents studied resulted from flying or falling objects or sparks striking the eye. Injured workers estimated that nearly three-fifths of the objects were smaller than a pin-head. Most of the particles were said to be traveling faster than a hand-thrown object when the accident occurred.



Contact with chemicals caused one-fifth of the injuries. Other accidents were caused by objects swinging from a fixed or attached position, like tree limbs, ropes, chains, or tools which were pulled into the eye while the worker was using them.

## **Where Do Accidents Occur Most Often?**

Potential eye hazards can be found in nearly every industry, but BLS reported that more than 40 percent of injuries studied occurred among craft workers, like mechanics, repairers, carpenters, and plumbers. Over a third of the injured workers were operators, such as assemblers, sanders, and grinding machine operators. Laborers suffered about one-fifth of the eye injuries. Almost half the injured workers were employed in manufacturing; slightly more than 20 percent were in construction.

## **How can Eye Injuries be Prevented?**

⇒ Always wear effective eye protection. OSHA standards require that employers provide workers with suitable eye protection. To be effective, the eyewear must be of the appropriate type for the hazard encountered and properly fitted. For example, the BLS survey showed that 94 percent of the injuries to workers wearing eye protection resulted from objects or chemicals going around or under the protector. Eye protective devices should allow for air to circulate between the eye and the lens. Only 13 percent of workers injured while wearing eye protection reported breakage.

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Nearly one-fifth of the injured workers with eye protection wore face shields or welding helmets, however, only six percent wore goggles, which generally offer better protection for the eyes. The best protection is afforded when goggles are worn with face shields.

⇒ Better training and education. BLS reported that most workers were hurt while doing their regular jobs. Workers injured while not wearing protective eyewear most often said they believed it was not required by the situation. Even though the vast majority of employers furnished eye protection at no cost to employees, about 40 percent of the workers received no information on where and what kind of eyewear to use.

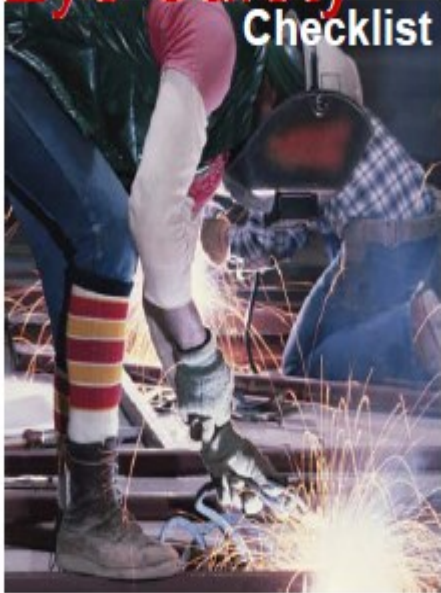
⇒ Eye protection devices must be properly maintained. Scratched and dirty devices reduce vision, cause glare and may contribute to accidents.

More than 50 percent of workers injured while wearing eye protection thought the eyewear had minimized their injuries. But nearly half the workers also felt that another type of protection could have better prevented or reduced the injuries they suffered.

It is estimated that 90 percent of eye injuries can be prevented through the use of proper protective eyewear. If you have any questions about the type of eye protection you need for your job, please contact your supervisor, or EHS for guidance. Completing the UTK Personal Protective Equipment Hazard Assessment Survey and Analysis will help. For more information, please visit the EHS web-site at [www.ehs.utk.edu](http://www.ehs.utk.edu).



## Eye Safety Checklist



- 1. Create a safe work environment**
  - Minimize hazards from falling or unstable debris.
  - Make sure that tools work and safety features (machine guards) are in place.
  - Make sure that workers (particularly volunteers) know how to use tools properly.
  - Keep bystanders out of the hazard area.
- 2. Evaluate safety hazards.**
  - Identify the primary hazards at the site.
  - Identify hazards posed by nearby workers, large machinery, and falling/shifting debris.
- 3. Wear the proper eye and face protection.**
  - Select the appropriate Z87 eye protection for the hazard.
  - Make sure the eye protection is in good condition.
  - Make sure the eye protection fits and will stay in place.
- 4. Use good work practices.**
  - Caution—Brush, shake, or vacuum dust and debris from hardhats, hair, forehead, or the top of the eye protection before removing the protection.
  - Do not rub eyes with dirty hands or clothing.
  - Clean eyewear regularly.
- 5. Prepare for eye injuries and first aid needs.**  
**Have an eye wash or sterile solution on hand.**

For additional information see [www.cdc.gov/niosh/topics/eye/](http://www.cdc.gov/niosh/topics/eye/) or contact us by phone at 1-800-CDC-INFO.

Department of Health and Human Services  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health

