What are Potential Eye Hazards in the Workplace That Necessitate Eye Protection?



QUESTION

What are potential eye hazards in the workplace that necessitate eye protection?

A. Poor housekeeping practices, objects dropped from above, no prevention programs, chemicals.
B. Radiation, slips and falls, no proper training in use of dangerous equipment, projectiles.
C. Ill-designed or inappropriate goggles/safety glasses, an administrator not trained or knowledgeable in eye protection, bloodborne pathogens.
D. Projectiles, Chemicals, Radiation, Bloodborne Pathogens.

ANSWER

D. Projectiles, Chemicals, Radiation, Bloodborne Pathogens.

WHY IS IT RIGHT

OHS STANDARD

OHS 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.

EMPLOYERS RESPONSIBILITIES

Employers must provide eye protection for employees whenever they are exposed to potential eye injuries during their work if work practice or engineering controls do not eliminate the risk of injury.

Employers must establish and implement a written eye and face protection program with worksite-specific procedures and elements for required eye and face protective equipment use. **The provisions of the program include procedures for**

selection, medical evaluation, fit testing, training, use, and care of eye and face protection.

Employers Responsibilities

- Know the eye safety dangers at your work.
- Eliminate hazards before starting work by using machine guards, work screens, or other engineering controls.
- Use proper eye protection.
- Keep your safety eyewear in good condition and have it replaced if it becomes damaged.

Selection of protective eyewear appropriate for a given task should be made based on a hazard assessment of each activity.

- **Projectiles**(dust, concrete, metal, wood, and other particles)
- **Chemicals**(splashes and fumes)
- **Radiation**(especially visible light, ultraviolet radiation, heat or infrared radiation, and lasers)
- **Bloodborne pathogens**(hepatitis or >HIV) from blood and body fluids

Workers experience eye injuries on the job for two major reasons:

- They were not wearing eye protection.
- They were wearing the wrong kind of protection for the job.

TYPES OF EYE PROTECTION THAT SHOULD BE WORN

The eye protection chosen for specific work situations depends upon the circumstances of exposure, other PPE used, and personal vision needs. There is a wide variety in the types of protective eyewear, and appropriate selection should be based on a number of factors, the most important of which is the nature and extent of the hazard. Eye protection must be comfortable and allow for sufficient peripheral vision and must be adjustable to ensure a secure fit. It may be necessary to provide several different types, styles, and sizes. Selection of protective eyewear appropriate for a given task should be made from an evaluation of each activity, including regulatory requirements when applicable. These hazard assessments require a clear understanding of the work tasks, including knowledge of the potential routes of exposure and the opportunities for exposure in the task assessed (nature and extent of worker contact). Exposure incident reports should be reviewed to identify those incidents (whether or not infection occurred) that could have been prevented by the proper use of protective eyewear.

Common Types of Eye Protection

Goggles

Appropriately fitted, indirectly-vented goggles* with a manufacturer’s anti-fog coating provide the most reliable practical eye protection from splashes, sprays, and respiratory droplets. Newer styles of goggles may provide better indirect airflow properties to reduce fogging, as well as better peripheral vision and more size options for fitting goggles to different workers. Many styles of goggles fit adequately over prescription glasses with minimal gaps. However, to be efficacious, goggles must fit snugly, particularly from the

corners of the eye across the brow. While highly effective as eye protection, goggles do not provide splash or spray protection to other parts of the face.

* Directly-vented goggles may allow penetration by splashes or sprays; therefore, indirectly vented or non-vented goggles are preferred for infection control.

Face Shields

Face shields are commonly used as an infection control alternative to goggles.** As opposed to goggles, a face shield can also provide protection to other facial areas. To provide better face and eye protection from splashes and sprays, a face shield should have crown and chin protection and wrap around the face to the point of the ear, which reduces the likelihood that a splash could go around the edge of the shield and reach the eyes. Disposable face shields for medical personnel made of lightweight films that are attached to a surgical mask or fit loosely around the face should not be relied upon as optimal protection.

** In a chemical exposure or industrial setting, face shields should be used in addition to goggles, not as a substitute for goggles (ANSI Z87.1-2003 Practice for occupational and educational eye and face protection).

Safety Glasses

Safety glasses provide impact protection but do not provide the same level of splash or droplet protection as goggles and generally should not be used for infection control purposes.

Full-Face Respirators

Full facepiece elastomeric respirators and powered air-purifying respirators (PAPRs) are designed and used for respiratory protection, but because of their design incidentally provide highly effective eye protection as well. Selection of this type of PPE should be based on an assessment of the respiratory hazard in an infection control situation, but will also provide, as an additional benefit, optimal eye protection.

Combination of Eye Protection and other PPE Should Be Used

Eye protection should be selected in the context of other PPE use requirements. Safety goggles may not fit properly when used with certain half-face respirators, and similarly, face shields may not fit properly over some respirators. Once PPE requirements have been established for a specific infection control situation, the selected PPE should be pre-tested to assure suitable fit and protection when used as an ensemble. Elastomeric, full-facepiece respirators and powered air-purifying respirators (PAPRs) have the advantage of incidentally providing optimal eye protection. In situations where all combinations of PPE may not be readily available to workers, a judicious selection of complementary PPE is important to allow for appropriate protection.

TRAINING

Training must be provided to employees who are required to use eye and face protection. The training must be comprehensive, understandable, and recur annually, and more often if necessary, and should be done before use:

- Why the eye and face protection is necessary and how improper fit, use, or maintenance can compromise its protective effect.
- Limitations and capabilities of the eye and face protection.
- Effective use in emergency situations.
- How to inspect, put on and remove.
- Maintenance and storage.
- Recognition of medical signs and symptoms that may limit or prevent effective use.
- General requirements of OSHA's eye and face protection standard. [29 CFR 1910.133]

Formal Eye and Face Protection Program

The eye and face protection program increases the chances of using equipment correctly. Eye and face protection will only protect if it is used correctly. Also, OSHA requires a number of written elements for all PPE protection programs.

ADMINISTRATOR

The program must be administered by a trained program administrator who is qualified and knowledgeable in eye and face protection to run all aspects of the program.

WHY IS EVERYTHING ELSE WRONG

How does industry, in general, protect the eyes of its workers?

The first step is to assess work areas for accidents that can be caused by impact, heat, chemicals, dust, glare, and optical radiation. The second is to have a good, sound safety program in place that mandates that 100 percent of employees, managers, and visitors follow eye safety rules.

BLS reported that 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.

10 ways to prevent an eye injury in your workplace.

1. **ASSESS!** Look carefully at plant operations. Inspect all work areas, access routes, and equipment for hazards to the eyes. Study eye accident and injury reports. Identify operations and areas that present eye hazards.
2. **TEST!** Uncorrected vision problems can cause accidents. Provide vision testing during routine employee physical exams.
3. **PROTECT!** Select protective eyewear that is designed for the specific duty or hazard. Protective eyewear must meet the current standards from the Occupational Safety and Health Act of 1970 and later revisions.
4. **PARTICIPATE!** Create a 100 percent mandatory program for eye protection in all operation areas of your plant. A broad program prevents more injuries and is easier to enforce than one that limits eye protection to certain departments, areas, or jobs.
5. **FIT!** Workers need protective eyewear that fits well and is comfortable. Has eyewear fitted by an eye care professional or someone trained to do this? Provide repairs for eyewear and require each worker to be in charge of his

or her own gear.

6. **PLAN FOR AN EMERGENCY!**Set up first-aid procedures for eye injuries. Have eyewash stations that are easy to get to, especially where chemicals are used. Train workers in basic first-aid and identify those with more advanced training.
7. **EDUCATE!** Conduct ongoing educational programs to create, keep up, and highlight the need for protective eyewear. Add eye safety to your regular employee training programs and to new employee orientation.
8. **SUPPORT!** Management support is key to having a successful eye safety program. Management can show their support for the program by wearing protective eyewear whenever and wherever needed.
9. **REVIEW!** Regularly review and update your accident prevention policies. Your goal should be NO eye injuries or accidents!
10. **PUT IT IN WRITING!** Once your safety program is created, put it in writing. Display a copy of the policy in work and employee gathering areas. Include a review of the policy in new employee orientation.