PPE – Head/Face Quiz

QUESTION

Name the common hazards where employers must ensure their workers wear head protection'

ANSWER

The common hazards are:

1. Being struck by falling objects
2. Bumping their heads on fixed objects
3. Coming into contact with electrical hazards

WHY IS IT RIGHT

GENERAL RULE

OSHA's PPE standard applies to 'all protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers.' **Before an employer can require an employee to put on PPE, the employer must, among other things,**

- perform a hazard assessment.
- consider other alternative options to protect employees.
- identify and provide appropriate PPE for employees.
- train employees in the use and care of PPE.
- train employees how to clean and maintain PPE, including replacing worn or damaged PPE.

HEAD PROTECTION

The head is one of the most vulnerable parts of the human body. Different external physical influences can not only damage the skin and bones, but also the brain in particular with its vital functions. In order to protect against these influences, humans invented head coverings centuries ago. Specialist safety helmets and thus the industrial safety helmet as we now know it came into use only during the industrial age. In the modern working environment, safety helmets are essential in various different hazard areas. These areas can be split into five categories:

- **Physical:** falling objects, suspended loads, impacts
- **Chemical:** splashes of chemical liquids
- **Thermal:** molten metal splashes, heat, thermal radiation, hot liquids, weather conditions
- **Visual:** UV radiation
- **Electrical:** electric arcs

In order to prevent accidents at work, protecting against these dangers is very important.

DIFFERENT TYPES OF HEAD AND FACE PROTECTION

- Safety helmets
- Face protection
- Impact caps
- Welder’s masks

EMPLOYERS RESPONSIBILITY

Employers must ensure their workers wear head protection if they are at risk of these common hazards:

- **Being struck by falling objects**
- **Bumping their heads on fixed objects**
- **Coming into contact with electrical hazards**

These common hazards encompass most ways in which a potential injury could occur, and they can have different meanings depending on the work environment. Understanding the potential hazards at your workplace is imperative in assessing the type of PPE needed to keep injuries at bay.

Injuries to the head are life-changing. Head injuries can result in long-term damage and death, with injuries often including memory loss, fractured bones, and spine damage ‘ some of which cannot be cured.

Traumatic brain injuries (TBI) are the primary type of head injuries. TBI is a significant cause of death and disability in the United States, contributing to about 30% of all injury death. Despite the security given to workers from the safety helmet standard, there are still incidents of traumatic brain injury, especially in construction, where there were 2,200 fatalities between 2003 and 2010.

However, according to a survey about worksite accidents and injuries conducted by the Bureau of Labor Statistics (BLS), 84% of all workers who suffered head injuries were not wearing head protection.

Traumatic brain injury (TBI) is a common cause of case-fatality, cognitive impairment, and post-injury functional disability. Furthermore, even mild TBI can have long-term consequences. Severe TBI is a catastrophic event that can potentially result in a devastating socioeconomic life since the sequelae affects multiple aspects of daily life; however, there was no evidence showing that therapeutic interventions after suffering severe TBI can effectively improve the functional outcome. Therefore, efforts directed towards awareness of hazard and injury prevention are emphasized to reduce the public health burden of TBI.

Work-related TBI is caused mainly by falls, motor vehicle crashes, and assaults in manufacturing and construction

industries, and it is avoidable by developing preventive measures. However, interventions with the goal of preventing TBI resulting from fall injuries are not available in the current workplace environment.

Safety helmets are useful protective equipment, which reduce the risk of TBI and death resulting from sports activities as well as motorcycle and bicycle accidents. However, the preventive effect of safety helmets on health outcomes resulting from work-related fall injuries has not been verified mainly because safety helmets have been primarily used to prevent workers from experiencing head injuries caused by falling or flying objects.

Safety precautions that focus on reducing the risk of TBI resulting from fall injuries are limited in the current workplace environment. In addition, research studies that focus on the effect of safety helmets on reducing the risk of TBI resulting from work-related fall injuries are rare.

PROPER FACE PROTECTION

It is critical that workers know how to shield their faces from specific hazards.

Doing a hazard assessment and establishing a policy are prerequisites to providing adequate face protection as part of a worker’s PPE.

Suitable face protectors must be provided where there is a potential for injury to the face from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, potentially injurious light radiation or a combination of these.

Not all employers, though, have an adequate face protection policy or ensure that their employees adhere to it. Workers injured in the face who were surveyed in a Bureau of Labor Statistics (BLS) study indicated that face protection was not

normally used in their line of work, or it was not required for the type of work performed at the time of the accident.

Face protection with proper face shields and safety helmets are very useful, protective equipment that reduce the risk of injuries in the current workplace. The head and face demand that no steps or procedures or equipment should be avoided or missed in the role of protection in workplace activities.

WHY IS EVERYTHING ELSE WRONG

HEAD PROTECTION IN THE WORKPLACE

Under Occupational Safety and Health Administration's (OSHA) head protection regulation, employers are required to provide hard hats for employees who work near exposed electrical conductors that may contact the head to decrease the risk of electrical shock. Workers must also wear head protection gear when working in places where they can easily bump their head, such as when working near exposed pipes, around conveyor belts or other machinery that may cause objects to dislodge and fall including working at heights.

Hard Hat Standards have been established by Canadian Standards Association (CSA) and the American National Standards Institute (ANSI).

Hard Hats must protect the wearer's head against impact and against small flying or falling objects. It must be able to with stand an electrical contact equal to 20,000 volts phase-to-ground.

The wearer and the employer need to know the use and care of employee hard hats.

- Inspect the shell, suspension, and liner every day before you use it. Look for cracks, dents, cuts, or gouges. Replace damaged or worn hats and liners immediately.

- If a hard hat is struck by an object, do not keep using it.
- Don’t store your hard hat in direct sunlight’it will age quicker and can become brittle.
- Clean the shell, suspension, and liner regularly with mild soap and water.
- Never alter your hard hat by painting it, making holes in it, etc.
- Don’t carry things inside your hard hat.
- Don’t wear a baseball cap under your hard hat.
- Use a hard hat with a chinstrap when working at heights or in windy conditions.
- Check the service life of your hard hat by contacting the manufacturer or reading the manufacturer’s instructions.
- Putting retroreflective stickers or tape on a hard hat can help workers be seen by moving vehicles and equipment in conditions where visibility is reduced. However, the stickers or tape must be compatible with the surface material, not adversely affect the material, and not interfere with the ability to inspect the hard hat for defects. Place them at least 13 mm (1/2 in) above the edge of the brim.
- Hard hats must safely absorb the shock of a falling object.
- It must prevent an object from penetrating it.
- It must fit a worker’s head properly.
- It must be water resistant.
- It must burn slowly when in contact with fire.

FACE SHIELDS FOR THE WORKPLACE

In protecting eyes, do not lose sight of the fact that more than just our eyes need to be, and can be, protected. Many tasks require the use of face shields, too. They provide additional protection for our eyes, and protect the rest of our face as well.

What Face Shields Accomplish

When properly used as part of a workplace injury prevention program, face shields provide additional protection against some impact hazards, or things flying into our faces.

To adequately protect an employee from those hazards, a face shield must be used with safety glasses or safety goggles. When combined with safety glasses or goggles, a face shield provides an important additional layer of protection not just for your eyes, but also protects the rest of your face from burns, cuts, or even exposures to toxic or caustic chemicals.

Face Shield Selection

Like other PPE, select the right face shield for the task at hand. To do so, understand what options are available, what kind of protection is required, and how it will interact with other required PPE used for workplace injury prevention.

One of the most important decisions comes down to selecting the right type of window (also called a visor) on the face shield. Many are available in different types of plastic or plastic-like materials. These often provide excellent visibility for the worker, are usually lightweight (reducing the strain on the worker's head and neck), and can even be ANSI rated for impact protection.

Keep that in mind when selecting face shields to protect against chemical splashes, and make sure to consult your safety data sheets for the chemicals that you use to make sure that your face shields are made of the right materials.

Steel and nylon mesh windows are also available, protecting workers against impacts from larger objects. They won't provide the same level of protection against dusts, fumes, and vapors, though, as they do not form a solid shield, allowing dusts and vapors to pass through the mesh. That same mesh design allows for even greater airflow for the worker, which

can be particularly useful when working outside in the heat.

Other required PPE can also affect what types of face shields are appropriate. One common type is attaches to hard hats, allowing employees to wear adequate head protection. When hard hats are not required, face shields are also available as adjustable headgear.

Face Shields For Specific Tasks

There are also specialty face shields designed for specific jobs, and designed to meet OSHA standards for workplace injury prevention against hazards unique to those job tasks. Examples include face shields designed to protect against arc flash when performing electrical work, and that meet the National Fire Protection Association (NFPA) 70E standard. Others protect against heat and radiation, including shaded face shields that protect a worker’s eyes from the intense light and radiation created when gas welding or cutting.

When providing face shields to workers, it is important that there is a full understanding of the hazards associated with the task being performed and select one that is most appropriate for the task.