Training Solutions, Delivered!

PROTECTING OUR SIGHT

Leader's Guide, Fact Sheet & Quiz

Item Number: 4210

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.

b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.

c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.

d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes *before* the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.

b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.

c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.

d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

4210 PROTECTING OUR SIGHT
FACT SHEET

LENGTH: 19 MINUTES

PROGRAM SYNOPSIS:
Each and every day, our eyes provide the gateway that allows us to recognize and comprehend the world we work, live and play in. Because our vision is so crucial to almost all aspects of our daily lives, it's difficult to understand why we wouldn't protect our eyes in every instance they are at risk from hazards; yet, over 2,000 workers in North America suffer some type of eye injury requiring medical treatment every day. This program discusses the protective devices and precautions we can utilize to prevent such injuries while stressing the importance of assessing the hazards of each job task and avoiding common pitfalls that often lead to these incidents.

Topics include how the vision process works, types of eye injuries, employee responsibility to wear appropriate protection, use of safety glasses, safety goggles and face shields and eye protection required for welding and laser operations. Reducing lens fogging, cleaning and storage of protective devices, off-job safeguards and proper response to eye injuries are also reviewed in the program.

PROGRAM OBJECITVES:
After watching the program, the viewer will be able to explain the following:
- How the vision process works;
- How common workplace eye injuries occur;
- What types of safety eyewear are available and what hazards they protect against;
- How to properly clean and store protective devices;
- How to reduce lens fogging on protective devices;
- What precautions to take to protect eyesight both on and off the job;
- How to properly respond to an eye injury.

PROGRAM OUTLINE:

BACKGROUND
- Our eyes—so important, yet so easily taken for granted. We depend on our eyes to provide us with the critical information we need to get through each day; all it takes is a quick glance from our eyes to tell us the color, size and shape of an object.
- Our eyes let us know how close an object is, whether it's standing still or moving, if it's moving toward or away from us and how fast.
- Each and every day, our eyes provide the gateway that allows us to recognize and comprehend the world we work, live and play in.
- Because our vision is so crucial to almost all aspects of our daily lives, it's difficult to understand why we wouldn't protect our eyes in every instance they are at risk from hazards; yet, over 2,000 workers in North America suffer some type of eye injury requiring medical treatment every day.

HOW THE VISION PROCESS WORKS
- When light rays are reflected off an object and enter the eye through the transparent outer covering of the eye, known as the cornea, the vision process begins.
- The cornea refracts the rays that pass through the pupil, the round hole in the middle of the eye.
- The iris is the colored area that surrounds the pupil. It opens and closes to change the size of the pupil to regulate the amount of light that passes through.
- The light rays then pass through the lens, which changes shape so it can bend the rays even more and focus them on the retina at the back of the eye. The retina is a thick layer of tissue that contains millions of tiny nerve cells called rods and cones.
- The rods and the cones convert light into electrical impulses. The optic nerve sends these impulses to the brain, where an image is produced.

• The eyes work together to perceive depth, allowing us to judge distance and the size of objects. They also work with the brain, muscles and nerves to produce complicated visual images and messages.

TYPES OF EYE INJURIES

• These amazing structures, which are so critical to our vision, are also very delicate and subject to a variety of injuries and illness.
• Most eye injuries result from small particles such as dust, metal slivers and wood chips striking the eye.
• Sometimes larger objects such as splinters, nails and staples penetrate the eyeball and cause permanent vision loss.
• Other industrial eye injuries include blunt force trauma to the eye or eye socket often causing hemorrhaging of the blood vessels, chemical burns resulting from the eyes being splashed by harmful chemicals and thermal and radiation burns that damage the eyes and surrounding tissue.
• You need to be aware that eye injuries are often slow to heal because they have few blood vessels to provide oxygen to the affected area. Also, once optic nerve cells are damaged, they do not heal, resulting in permanent vision impairment or loss.

THE EMPLOYER'S PLAN TO PREVENT EYE INJURIES

• To prevent you from suffering an eye injury on the job, your company has developed a plan to protect you.
• Hazard assessments have been conducted to identify the specific hazards of your work site, including eye injury hazards.
• In some cases, you will be provided with work screens and other barrier devices to protect you from eye hazards.
• Most importantly, your employer will provide you with the appropriate eye and face protection anytime you may be exposed to flying particles, molten metal, liquid chemicals, acids or caustic liquids; chemical gases or vapors or potentially injurious light radiation.

EMPLOYEE RESPONSIBILITY TO WEAR APPROPRIATE PROTECTION

• While your company provides you with these protective devices, it is your responsibility to wear the protection in each and every situation that it is required.
• Employees who take their eyesight for granted and neglect wearing protective eyewear are usually those that suffer the most severe eye injuries.
• Nearly half of all eye injuries suffered on the job occur when workers are wearing protective devices which do not provide adequate protection for the job task being performed. Make sure you always wear the appropriate eye protection for all eye hazards you may face when performing a given task.
• Also keep in mind that you must wear proper protective eyewear for a given work area even when just "passing through." Many traumatic eye injuries are suffered by unprotected employees simply walking through a hazardous area; these injured workers wrongly assumed that since they were not performing any work that protection was not necessary.

SELECTING THE PROPER PROTECTIVE DEVICE

• Your employer will provide you with training on each type of protective device you will be using including which eye hazards each type of protective eyewear will guard against.
• Once trained, you will be able to select the appropriate protection. Before beginning any job task, you should decide if you need eye protection and what type of protection is required for the hazards at hand.
• Ask your supervisor if you have any questions about the eyewear you have chosen or if you have problems getting it to fit properly.

SAFETY GLASSES

• If you have chosen safety glasses, keep in mind that they only provide a minimum level of protection. All safety glasses should be compliant with the American National Standards Institute's Z87 standard for protective eyewear and bear a mark which indicates compliance.
• When working in environments where objects can injure the eye by traveling around the lenses, you need more protection than that offered by standard safety glasses. Glasses with side shields or wrap around lenses should be worn in these situations.
• Also, glasses with brow bars can protect against falling objects.

• Hybrid glasses with foam or rubber around the lenses or those that convert to goggles with a plastic or rubber face seal provide even more protection.
• Many people choose to use a retainer to keep safety glasses tight to the face or hanging from the neck when not in use. If so, make sure the retaining device is designed to break away easily so it does not become an entanglement hazard.

PRESCRIPTION GLASSES & LENSES
• Keep in mind that prescription glasses are no substitute for safety glasses. They are just not designed to protect against workplace hazards and can cause greater injury if the lens shatters on impact.
• One option for employees who wear prescription glasses is safety glasses or goggles that fit over a person's regular glasses.
• Another alternative is safety glasses with prescription lenses made of a polycarbonate or Trivex to provide the best impact protection.
• If you wear prescription glasses and have any questions about the eye protection available to you, consult your supervisor.

SAFETY GOGGLES
• When working in environments where strong impacts, dust particles or chemical splashes are a hazard, or you just feel you need more protection than regular safety glasses, then safety goggles should be worn.
• Choose goggles with venting to reduce fogging. Be sure to select goggles with indirect venting when working with liquid chemicals or fine dusts to prevent hazards from entering the eye area through the vent openings.
• Goggles with direct venting may be used to reduce fogging when working around larger particles which cannot pass through the vent openings.
• No matter what pair of goggles you use, make sure the edge makes a seal when it contacts your face to provide maximum protection.

FACE SHIELDS
• There are certain jobs which mandate additional protection. Often this additional protection can be found in the form of a face shield.
• Face shields are necessary when working in areas where chipping, grinding and sanding operations take place and when performing jobs where the potential for facial contact with a chemical or bloodborne pathogens exists.
• Because the curvature of a face shield can direct hazardous materials into the eyes should they get inside it, safety goggles or glasses must always be worn in conjunction with a face shield.
• For more complete protection, choose a shield that extends below the chin.
• Also, select a shield with reflective surfaces that reduce heat exposure to the eyes and face when working with heated or molten materials.

USE OF RESPIRATORY PROTECTION
• Sometimes, even the combination of primary eye protection and a face shield will not provide complete eye protection, especially when certain respiratory hazards exist.
• When respiratory protection is required, the use of full-face respirators offer the best eye protection from exposure to dust, chemicals, smoke and other eye irritants.
• When using a respirator, make sure the mask doesn't interfere with the proper positioning of the eye protection and that the eye protection doesn't interfere with the proper fit of the respirator.
• Check with your supervisor if you have any questions about using eye protection in conjunction with a respirator.

EYE PROTECTION FOR WELDING OPERATIONS
• Another eye hazard from which we must protect our eyes is the harmful light and radiation given off from welding and cutting operations.
• Exposure to welding and cutting light can cause welder's flash, which is a burn to the eyes and surrounding tissue. To protect yourself, choose the appropriate helmet, goggles, face shield or welding respirator when performing these types of operations.
• Welding lenses are marked with shade numbers, with 1.5 being the lightest and 14 being the darkest. You should select the darkest shade that allows adequate vision for your job.

- Recommended shades include 1.5 to 3 for torch soldering, 3 to 6 for torch brazing and cutting, 4 to 8 for gas welding and 10 to 14 for electric arc welding.
- Be aware that lenses lose their effectiveness over time and should be changed periodically.

LASER SAFETY EYEWEAR

- Welding is not the only source of harmful radiation. The unprotected eye is extremely sensitive to laser radiation and can be permanently damaged from direct or reflected beams.
- If you work in an area which may expose you to harmful laser radiation, you must wear safety glasses or goggles with the appropriate filtering optics for the type of laser being used.
- When choosing laser safety eyewear, you need to check both the wavelength and optical density protective specifications to make sure it offers enough protection from all beams being transmitted in the area.
- These specs are usually located near the top of one of the lenses or frames on the glasses or goggles.
- Be aware that laser safety eyewear may not have obvious tinting and may look similar to regular safety glasses. In addition, lenses that look identical do not necessarily provide the same protection.
- Again, you must check the numbers on the eyewear to ensure it provides proper protection for your laser application.
- If you have any questions about the appropriate protection, ask your company's Certified Laser Safety Officer or your supervisor.

CONTACT LENSES

- A major improvement in corrective vision took place with the creation of contact lenses.
- If you wear contact lenses, you should check with your supervisor to determine when it is appropriate to wear them. Some facilities permit them to be worn under certain protective devices, while others prohibit employees from wearing contact lenses altogether.
- In general, contact lenses shouldn't be worn in areas where eyes can be exposed to dangerous gases, fumes or liquids as they can be absorbed into the lenses or trapped underneath them.

REDUCING LENS FOGGING

- Lens fogging on all protective devices can be a frustrating problem in areas where high humidity is present or where frequent temperature changes occur.
- To reduce fogging, choose eyewear that has good ventilation.
- If you cannot wear vented eyewear due to small particles, chemicals or fumes in your work area, select a device with lenses that have fog-resistant coatings.
- Various anti-fog solutions and wipes are also available.
- Lens fogging can be overcome. Work with your supervisor to come up with a plan to reduce fogging.
- Do not use temporary lens fogging as an excuse to go without eye protection and risk permanent injury.

CLEANING & STORAGE OF PROTECTIVE DEVICES

- The final issue about protective devices is cleaning and storage. You should follow these procedures after each shift.
- Thoroughly clean all parts with soap and warm water. Rinse with cool water and allow to air dry.
- Any broken parts that you can replace should be exchanged before you store your eyewear.
- Defective eyewear that cannot be repaired should be discarded.
- Store all eyewear according your company's policies. This usually will be a designated place free of dust and away from potentially damaging heat sources.

BASIC SAFETY PRECAUTIONS

- In addition to wearing eye protection, you must also take a proactive approach to preserving your sight by following basic safety precautions that will reduce the risk of injuries.
- First of all, perform all your job duties as safely as possible. Think a job through before starting. Make sure you have the proper tools and protective equipment on hand.
- Once a job begins, maintain concentration on each task until it is properly completed.
- Good housekeeping is very important in preventing eye injuries. The cleaner you keep your work area, the less likely particles will be thrown into the air by various workplace activities.

• To avoid dispersing dust and other particles into the air avoid cleaning your work area with compressed air. Compressed air can easily launch debris into the air with great force.
• These types of safe work habits go a long way in preventing all injuries, including eye injuries.

OFF-JOB SAFEGUARDS

• Of course, the importance of protecting our eyes doesn't stop when we clock out from work each day. There are also safeguards we should take off the job to protect our eyesight.
• Eye protection should be worn when performing yard work such as mowing, weed and hedge trimming, spreading fertilizers and pesticides and using chainsaws or other cutting tools.
• You must protect your eyes at home just as you would at work, especially when using power tools such as saws, grinders, hammers and similar tools.
• Remember that your children learn their safe habits by watching you. Using safety equipment at home will instill safe work habits for your children also.

RESPONDING TO EYE INJURIES

• If an eye injury does occur, how you respond could mean the difference between saving or losing your vision. This is why it is so important to be ready to respond should an incident occur.
• Learn your company's procedures for handling an eye injury and make sure you know how to reach the nearest eye wash station to your work area. Practice reaching it with your eyes closed because an eye splash incident will often leave you unable to see.
• If splashed in the eyes by a chemical, get to a wash station immediately and flush your eyes for at least 15 minutes, then seek medical attention without delay.
• You should also flush your eyes with large amounts of water if you get dust, specks or other fine particles in your eyes. See a physician if the material doesn't wash out or if pain or redness persists.
• Remember, don't rub your eye when injured or when irritated by a particle. This can only make the condition worse and may cause permanent damage.
• If a larger object strikes you in the eye or something cuts or punctures it, do not wash out the eye or try to remove the object yourself. Have someone help you get you to a medical treatment facility as soon as possible.
• When suffering a blunt blow to the eye, apply a cold compress without pressure. If a compress isn't available, place crushed ice in a plastic bag and allow it to rest gently on the injured eye.
• If your vision is reduced, if blood or discoloration appears in the eye or if the pain persists for more than a few hours, seek medical assistance immediately.

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ANSWERS TO THE REVIEW QUIZ

1. b
2. c
3. c
4. a
5. b
6. a
7. b
8. c

PROTECTING OUR SIGHT

REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name_____Date_____

1. What is the colored part of the eye that surrounds the pupil?

a. The cornea
b. The iris
c. The retina

2. Most eye injuries result from _____.

a. Large objects penetrating the eyeball
b. Blunt force trauma to the eye or eye socket
c. Small particles striking the eye

3. Nearly _____ of all eye injuries suffered on the job occur when workers are wearing inadequate protection for the job.

a. A quarter
b. A third
c. Half

4. Safety glasses or goggles must always be work in conjunction with a face shield.

a. True
b. False

5. All laser safety eyewear has the same tinting and will protect against all laser radiation

a. True
b. False

6. Any broken parts that you can replace should exchanged _____ you store your eyewear.

a. Before
b. After

7. To keep your work area as free of dust and debris as possible, compressed air should be used to clean your work area periodically.

a. True
b. False

8. How long should you flush your eyes with water after a chemical splash?

a. At least 5 minutes
b. At least 10 minutes
c. At least 15 minutes