

## **MAJOR PROGRAM POINTS**

# **"EYE SAFETY IN CONSTRUCTION ENVIRONMENTS"**

**Part of the "CONSTRUCTION SAFETY KIT" Series**

**Quality Safety and Health Products, for Today...and Tomorrow**

# **OUTLINE OF MAJOR PROGRAM POINTS**

The following outline summarizes the major points of information presented in the program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

- **Eye problems affect everyone:**
  - Factory workers.
  - Laboratory.
  - Healthcare employees.
  - Construction workers.
  - People in offices.
  - The list goes on and on.
  
- **Our eyes can be injured in any number of ways.**
  - Eyestrain can create bothersome headaches and blurred vision.
  - Chemical splashes and certain types of light radiation can burn the eyes.
  - Flying bits of metal or other material can cause punctures and tears.
  
- **This year, over one million employees will suffer eye injuries on the job.**
  - 100,000 of these cases will prove disabling.
  - Eye accidents don't only happen at work.
  - Another 70,000 injuries will occur at home.
  
- **There is good news, though. More of us than ever before are learning to guard against these accidents and avoid eye problems.**
  - We're anticipating possible hazards, and recognizing how the jobs that we do can affect our eyes.
  - We're learning more about personal protective equipment and what steps to take if problems do occur.
  - In short, we're seeing things more "clearly".

- **To be able to protect our eyesight, we first need to know how the eye works.**
  - Light strikes an object in your field of vision and is reflected to your eyes.
  - It first passes through the cornea, which acts as a protective window.
- **The light then travels through the pupil.**
  - The pupil is the opening at the center of the colored iris.
  - The pupil alters in size to admit the amount of light the eye needs to "see" an image.
- **This light, and the image it contains, is then focused by the eye's lens onto the retina, at the back of the eye.**
  - The retina is made up of tiny optic nerve cells which convert light energy into electrical signals.
  - These signals then travel along the optic nerve to the brain.
- **As you would guess, this is a fragile system. Damage to any part of the eye can cause real problems.**
  - So we need to do everything possible to protect our eyesight.
  - We can start by identifying the hazards that we are likely to encounter, at work and at home.
  - Only then can we take the proper precautions.
- **Many people suffer with eyestrain and accompanying headaches day after day, never stopping to wonder about the causes.**
  - Often, poor lighting is the culprit.
  - Not having enough light for the work that you are doing is a common problem.
- **Excessive contrast and shadowing can often result in eyestrain.**
  - If there is too great a difference between the light in your work area and the darkness in the background, your eyes have to work especially hard and can tire quickly.
- **Incorrectly positioning your glasses can strain your eyes as well.**
  - The wrong eyeglass prescription can cause blurred vision, which also leads to eyestrain.

- **When working outside, tinted lenses are helpful. They can:**
  - Reduce the brightness of sunlight.
  - Eliminate glare.
  - Filter out harmful ultraviolet light.
- **Since there are many causes for eye discomfort, you need to report any recurring symptoms of eyestrain to your supervisor.**
  - They can investigate the problem and determine what can be done to remedy the situation.
- **Another possible eye problem is something you might not even think about, contact lenses.**
  - Dust, flying particles, and splashing chemicals can be trapped under contacts, increasing the damage these hazards can cause.
- **Evidence is mounting, however, that wearing contact lenses in certain types of work areas is not as dangerous as people used to think.**
  - Researchers have determined that soft lenses do not act like fast-absorbing sponges, soaking up chemicals and holding them dangerously against the eye.
  - It takes much longer than originally thought for lenses to absorb substances that can injure the eye.
- **Studies also show that welding sparks and electrical arcs will not cause contact lenses to melt and bond to a worker's eyes.**
  - The heat generated by these sparks and arcs is not intense enough to do this kind of damage.
- **Many companies take this position... if studies show that contact lens wearers suffer more injuries in their specific jobs than non-wearers then contact lenses should not be worn, or special protective eyewear should be used.**
  - So you need to know your environment and act accordingly.
  - Ask your supervisor about the contact lens policies for your job.

- **Our eyes are exposed to a number of other dangers that fall into two categories... physical and radiation hazards.**
  - This includes flying particles, splashed chemicals and intense light.
  - When these types of hazards are present, it only makes sense to wear personal protective equipment!
  
- **The most common physical threat to your vision is flying particles.**
  - You can help to protect yourself from them by using safety glasses with shatter-resistant lenses.
  - Glasses with semi or eye-cup side-shields provide protection from the sides as well as the front.
  
- **Recently more fashionable safety glasses have come into vogue.**
  - These up-to-date frames are also lighter in weight and more comfortable than older frames.
  
- **In many situations, our eyes can be "attacked" from virtually any direction.**
  - In these cases, goggles are what is usually needed.
  - They come in both rigid and flexible models.
  - A goggle's snug fit protects the eye from dust and sparks, as well as impacts.
  - Holes at the sides allow for direct airflow to the eye area.
  
- **Where chemical splashes are possible, it's best to wear goggles designed to provide indirect airflow.**
  - Here, the ventilation holes are partially covered, to deflect liquids so that they don't reach the eyes.
  
- **In the most hazardous environments, safety glasses or goggles are sometimes not enough.**
  - Workers often need to wear face shields as well as goggles.
  - Depending on the model, these shields can provide additional protection against metal and chemical splashes, as well as radiant heat.
  
- **With a face shield, goggles act as a secondary line of defense against any hazards that make their way up under the shield.**

- **"Welding helmets" that incorporate special, protective lens-plates are the eye protection that is used during welding operations.**
- **But these helmets can create other, unique hazards.**
  - For instance, hot particles tend to collect on top of the helmet's lens plate.
  - When the helmet's visor is pushed back, the particles can shower down over the face and eye area.
  - To combat this, a magnetic adhesive strip can be affixed above the plate to capture these bits of metal, keeping them safely away from the eyes.
- **To guard against burns to the cornea, lens-plates on welder's helmets are usually tinted blue or green, to handle the intense ultraviolet radiation that is given off during the burning process.**
- **Radiation from laser operations is a hazard, as well.**
  - Employees who work around lasers must protect their eyes with special glasses or goggles that block or absorb the harmful laser light rays.
- **With all of the different types of eye protection that are available today, there are many alternatives to chose from.**
  - So make sure you know what equipment is the best for the job you are doing.
- **Selecting the appropriate eye protection is only half of the battle. Your PPE is a tool, just like a wrench or a calculator. It can only do its job if you take care of it.**
  - Keep lenses clean so you can see what's going on around you.
  - Replace scratched, broken or badly-fitting eyewear immediately.
  - All of these things can interfere with your ability to see, and may reduce the protective qualities of the eyewear itself.
- **Keep track of your eyewear.**
  - Don't leave your safety glasses at home and have to borrow a pair at work that may not fit properly.

- **Unfortunately, we can have eye problems regardless of the precautions that we take.**
  - When this happens, we need to know how to deal with them, whether they are simple cases of "tired eyes" or serious accidents.
- **Eyestrain can cause many nagging problems, problems that can affect us both physically and mentally.**
- **Workers who deal with long stretches of close-up activity often report temporary blurring of their vision.**
  - What has happened is that their eyes have gotten used to focusing on the extreme close-up distances.
  - Their eyes are then slow to return to their normal positions.
- **To combat this problem, focus on something a good distance away for three or four minutes.**
  - Repeating this exercise once an hour, every day, will help to prevent future eyestrain.
- **Here's an eye problem that everyone is familiar with... a small particle of dust or dirt becoming trapped within the eye.**
  - Do not rub the area!
  - Instead, dislodge the material by pulling the eyelid out and down.
  - Use a cotton swab or the corner of a handkerchief to gently remove the particle from your eye.
  - Then rinse the area under running water.
- **If a particle becomes embedded within the eye, do not attempt to remove it.**
  - Instead, bandage the eye loosely and see a doctor immediately.
- **Chemical splashes, both gaseous and liquid, can cause trouble for our eyes at work and at home.**
  - For instance, only a few seconds of exposure to many spray cleansers can cause severe burns.

- **If a hazardous chemical splashes into your eyes, get to the nearest available water source.**
  - Running water will dilute and eventually wash away many substances, so it's important to know where the closest sources of water are located before an accident occurs.
- **Carefully flood the injured eye with water, holding the eye open.**
  - Try to keep the flow from entering the uninjured eye.
  - Keep the water running for at least 15 minutes.
  - Then get medical attention immediately.
- **As we have said, light itself can damage the eye.**
  - It can come from welding torches, lasers, even the sun.
- **Infrared and ultraviolet radiation, as well as intense visible light, can burn the cornea or cause changes in other parts of the eye.**
- **The effects of radiation burns do not become apparent until six to twelve hours after exposure. Symptoms include:**
  - Blurred vision.
  - The feeling of sand in the eye.
  - Pain.
  - And unusual sensitivity to light.
- **Burns to the cornea will usually heal in a few days time.**
- **However, severe burns to the retina, such as those that occur from looking directly into the sun, do not heal and can cause permanent loss of vision.**
- **Our eyes, and our eyesight, are obviously at risk in many situations.**
  - But as we've seen, there are a lot of things we can do to protect them.

**\* \* \* SUMMARY \* \* \***

- **We need to understand how fragile the eye is, and how it's different parts work together to enable you to see.**
- **Be aware of the hazards that exist at your job.**

- **Learn what steps you can take to alleviate eyestrain.**
- **Know your company's policy on contact lenses, and how it applies to your job.**
- **Be on the lookout for physical and radiation hazards that can affect your eyes...then use PPE that can protect you from these hazards.**
- **Know how to treat an eye injury. It could mean the difference between an uncomfortable scratch and a lifetime of blindness.**
- **With all there is to see in this world, you don't want to lose your sight. By being aware of your surroundings, and keeping a lookout for hazards, you'll be seeing "clearly" for years to come!**