

# **MAJOR PROGRAM POINTS**

## **"EYE CARE AND SAFETY"**

**Part of the "GENERAL SAFETY SERIES"**

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

# Outline of Major Points Covered in the "Eye Safety" Course

The following outline summarizes the major points of information presented in the course on "Eye Safety". The outline can be used to survey the course before taking it on a computer, as well as to review the course when a computer is not available.

- **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.
- **Video display terminal operators and other people who do "close" work for six to eight hours a day have a unique set of problems.**
  - Long hours of focused work alone can bring on symptoms of eyestrain.
  - If you are using a video monitor it can get even worse.
  - Overly high levels of office lighting may overpower the brightness of video monitors, which can also strain the eyes.
  - And glare on a monitor or other reflective surface can irritate your eyes too.
  - Putting a "glare filter" over your monitor screen is an effective way to combat this problem.
- **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... so that 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.**
  - Machinists, for example, 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.
- **When a face shield is used, 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.
- **As we have seen, 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, walk to a window and 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 eyelid 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!**