

HEARING LOSS PREVENTION EMPLOYEE TRAINING

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

INTRODUCTION: A brief description of the program and the subject that it addresses.

PROGRAM OUTLINE: Summarizes the program content. If the program outline is discussed before the video is presented, the entire program will be more meaningful and successful.

PREPARING FOR AND CONDUCTING THE PRESENTATION: These sections will help you set up the training environment, help you relate the program to site-specific incidents, and provide program objectives for focusing your presentation.

REVIEW QUESTIONS AND ANSWERS: Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.

INTRODUCTION

Major John Busch is a fighter pilot in the reserves on the weekend and a maintenance technician at a local manufacturing operation during the week. While these two jobs seem worlds apart, they both have one hazardous element in common: Noise. Major Busch must protect his hearing in both work environments to prevent permanent hearing loss.

In this program, Major Busch will demonstrate to employees the importance of wearing proper hearing protection in all situations where noise can be hazardous. Topics include the company Hearing Conservation/Loss Prevention program, types of hearing protection, symptoms of hearing loss and dangers of off-job noise.

PROGRAM OUTLINE

HOW NOISE DAMAGES HEARING

- The outside of the ear gathers sound and channels it into the ear canal. Once inside, the sound moves in waves and flows against the eardrum.
- The membrane of the eardrum vibrates against three delicate bones that carry the vibrations to the inner ear.
- The inner ear contains a coiled tube filled with fluid known as the cochlea. Inside the cochlea, fluid carries the vibrations over tiny hair structures called cilia.
- Healthy cilia are arranged in v-shaped patterns in the inner ear. As noise-induced vibrations pass over the cilia, they sway and bend.
- When they move, the cilia transmit signals to the brain which interprets them as sound.
- As noise levels get louder and more intense, the cilia get bent farther. Levels of noise above 85 decibels can damage or destroy these delicate structures and cause hearing loss.

THE HEARING CONSERVATION/LOSS PREVENTION PROGRAM

- To help prevent hearing loss, OSHA requires companies to develop a hearing conservation program when workplace sound levels average 85 decibels over an 8-hour time-weighted period.
- Most employers now call this the hearing loss prevention program because the focus has shifted from conserving the hearing you still have to preventing hearing loss altogether.
- The development of this program begins with a noise assessment to determine the noise levels in the work environment.

- This assessment, conducted by hearing professionals, will determine what areas require the use of hearing protection and the type of protection that is required.
- Once this initial assessment has been done, monitoring will take place periodically and when new equipment is installed or procedures change that may affect noise levels.
- Training is then provided for employees. This will cover the effects of noise on your hearing and the proper use of hearing protection.

MEDICAL SURVEILLANCE

- As part of the company hearing loss prevention plan, a medical surveillance program is put in place that includes hearing tests and evaluation by a hearing professional.
- These tests are vital in the prevention of hearing loss. The first test will help establish a baseline for each employee that serves as a starting point for future evaluations.
- During subsequent hearing tests, the employee will be checked for threshold shifts. If a shift is detected, modification of noise exposure for the employee will be examined.
- This may simply include retraining to ensure that the employee is using hearing protection properly, or a higher level of hearing protection may be recommended.
- Another option is reducing the amount of time spent in high noise areas.

HEARING PROTECTION

- Each type of hearing protection device has a noise reduction rating. Hearing protection devices with higher noise reduction ratings offer more protection than those with lower ratings.
- A hearing professional has worked with your company to evaluate the types of noise hazards in your work area and has recommended the proper types hearing protection that must be worn.
- This hearing protection will provided by your company and comes in two basic types: ear plugs and ear muffs.

EARPLUGS

- Earplugs are available in different sizes and may be disposable or reusable.
- Some plugs are designed to be inserted into the ear canal, while canal caps only cover the entrance to the canal. Canal caps generally provide less protection than standard earplugs.
- Most disposable earplugs are made of polyurethane or other expandable foam that is easily compressed for insertion into the ear.
- Before inserting this type of plug, make sure your hands are clean. Then compress the foam by rolling it in your fingers.
- Pull on the top of the ear with your opposite hand and insert the plug into the opening of your ear canal. Keep your finger on the plug while it expands.
- Some types of plugs don't require compression. This style helps prevent the transfer of dirt from the hands into the ear and reduces outward pressure on the ear canal from expansion.
- Re-usable plugs can be made of silicone, rubber or plastic. They should be cleaned with soap and warm water on a regular basis and stored properly when not in use.

- You will know you have a good fit when placing a hand over your ear has no effect on the level of noise that you can hear.
- It is important to find a plug that fits properly and comfortably. Studies show that employees often remove uncomfortable earplugs to ease discomfort.

EARMUFFS

- Earmuffs are designed to cover the entire ear. They consist of a pair of cups connected by a headband.
- Muffs come in all shapes and sizes. Some are designed for use with other PPE such as hard hats.
- When using earmuffs with glasses, make sure the temple bar doesn't interfere with a good seal.
- One advantage of earmuffs is that they can be shared with other employees.
- As with all types of hearing protection, check with your supervisor to be sure the protection you have selected is appropriate for your work area.

SYMPTOMS OF HEARING LOSS

- Hearing loss usually occurs gradually over a period of time. A common symptom is having trouble hearing higher frequency ranges such as the voices of children and women.
- If you find your television has to be louder than normal to hear it or you have trouble hearing when background noise is present, you may be experiencing hearing loss.
- If you already have symptoms of hearing loss, you need to be extra careful in protecting your hearing from further damage.

OFF-JOB NOISE

- Keep in mind that hearing protection should not stop when you leave work.
- Lawn mowers, truck traffic and power tools all produce sound of about 90 levels. This can cause damage in eight hours if your hearing is unprotected.
- Chain saws, drills and loud headphones all produce about 100 decibels and can cause damage in two hours.
- Jet planes and gunshots (120-140 decibels) can cause immediate, painful damage. This is called traumatic hearing loss.
- Be aware that each of these noise hazards can permanently damage our hearing. Protection should be worn and exposure time limited.

PREPARE FOR THE SAFETY MEETING OR TRAINING SESSION

Review each section of this Leader's Guide as well as the videotape. Here are a few suggestions for using the program:

Make everyone aware of the importance the company places on health and safety and how each person must be an active member of the safety team.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Copy the review questions included in this Leader's Guide and ask each participant to complete them.

Copy the attendance record as needed and have each participant sign the form. Maintain the attendance record and each participant's test paper as written documentation of the training performed.

Here are some suggestions for preparing your videotape equipment and the room or area you use:

Check the room or area for quietness, adequate ventilation and temperature, lighting and unobstructed access.

Check the seating arrangement and the audiovisual equipment to ensure that all participants will be able to see and hear the videotape program.

Place or secure extension cords to prevent them from becoming a tripping hazard.

CONDUCTING THE PRESENTATION

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

Explain that the primary purpose of the program is to stress the importance of protecting your hearing on and off the job to prevent permanent hearing loss.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Lead discussions about hazardous noise levels at your facility and specific protection that must be worn to protect against permanent hearing loss. Use the review questions to check how well the program participants understood the information.

After watching the videotape program, the viewer will be able to explain the following:

- How noise can damage hearing;
- How the hearing conservation/loss prevention program works;
- Selection, use and care of earplugs and earmuffs;
- Symptoms of hearing loss.

**HEARING LOSS PREVENTION EMPLOYEE TRAINING
REVIEW QUESTIONS**

Name _____ Date _____

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

1. At what level can noise began to damage cilia inside the ear?
 - a. 85
 - b. 95
 - c. 105
 - d. 115

2. Your company is required by OSHA to have hearing conservation or hearing loss prevention program when sound levels reach a certain limit.
 - a. true
 - b. false

3. In general, canal caps provide _____ standard ear plugs.
 - a. more protection than
 - b. less protection than
 - c. the same protection as

4. If hearing protection is required, you must wear earplugs if you have to wear a hard hat or other head gear.
 - a. true
 - b. false

5. Most cases of hearing loss are a result of _____.
 - a. a sudden extremely loud exposure
 - b. a foreign object piercing the ear drum
 - c. gradual hazardous exposures over a period of time
 - d. none of the above

6. Off-job noise poses little or no threat to a person's hearing.
 - a. true
 - b. false

7. You will know that your earplugs are fitted correctly by placing your hand over your ear after and the level of noise you hear is _____ when your hand is not over your ear.
 - a. louder than
 - b. not as loud as
 - c. the same as

ANSWERS TO THE REVIEW QUESTIONS

1. a

2. a

3. b

4. b

5. c

6. b

7. c