SafetyNow Instructor Led Training

Workplan

HEARING CONSERVATION

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It’s estimated that each year, thousands of workers in the U.S. suffer from preventable hearing loss due to high workplace noise levels.

Hearing Conservation - An Employer's Role

Employers have a crucial role in educating and protecting their employees from occupational hearing loss. Here are key points that employers should communicate to their employees:

Risk Awareness: Explain the risks of noise exposure in the workplace, including how noise can cause both temporary and permanent hearing loss. Make sure employees understand the types of noises that are hazardous (e.g., machinery, tools, etc.).

Symptoms of Hearing Loss: Educate employees about the signs and symptoms of hearing loss, such as difficulty hearing high-pitched sounds, muffled hearing, ringing in the ears (tinnitus), and needing to increase the volume on devices.

Legal Rights and Responsibilities: Inform employees about their rights regarding a safe working environment, including the legal limits on noise exposure (as per local regulations like OSHA standards in the USA). Also, explain their responsibility to use protective equipment and adhere to safety protocols.

Hearing Protection Usage: Train employees on the correct use of hearing protection devices (HPDs) like earplugs and earmuffs. This includes how to properly insert and wear them, and the importance of using them in designated high-noise areas.

Hearing Conservation Programs: Introduce any hearing conservation programs in place, which might include regular hearing tests, noise monitoring, and other preventive measures.

Reporting and Seeking Help: Encourage employees to report any signs of hearing loss or discomfort and to seek help promptly. Explain the procedures for reporting and whom to contact.

Preventive Measures: Discuss the measures the company takes to minimize noise exposure, such as maintaining equipment, implementing noise control engineering, and rotating shifts to limit exposure.

Health and Safety Training: Ensure ongoing training and awareness programs are in place to keep employees informed about workplace noise hazards and preventive measures.

Impact on General Health: Educate employees on how hearing loss can affect general health and quality of life, including mental health and

social interactions.

Feedback and Suggestions: Encourage feedback from employees on the effectiveness of current hearing conservation measures and suggestions for improvement.

By providing comprehensive information and training, employers can foster a safer work environment and help prevent occupational hearing loss. It's also important for employers to lead by example and demonstrate a commitment to hearing conservation.

Key Statistics on Occupational Hearing Loss

Occupational hearing loss remains a prevalent issue in various industries. While specific statistics can vary depending on the source and the year, here are some general key statistics that highlight the extent of this problem:

1. **Prevalence:** According to the Centers for Disease Control and Prevention (CDC), occupational hearing loss is one of the most common work-related illnesses in the United States.

2. **Industry Impact:** Industries with the highest rates of occupational hearing loss typically include manufacturing, construction, mining, and transportation.

3. **Noise Exposure:** The National Institute for Occupational Safety and Health (NIOSH) reports that approximately 22 million U.S. workers are exposed to hazardous noise levels at work.

4. **Hearing Loss Cases:** It's estimated that each year, thousands of workers in the U.S. suffer from preventable hearing loss due to high workplace noise levels.

5. **Workers' Compensation:** Hearing loss accounts for a significant portion of occupational illness claims. The costs associated with workers' compensation for hearing loss disability are estimated in the tens of millions of dollars annually.

6. **Regulatory Standards:** OSHA standards dictate that noise exposure in the workplace should not exceed an average of 85 decibels over an 8-hour shift to minimize hearing loss risk.

7. **Global Perspective:** Globally, the World Health Organization (WHO) has identified occupational noise as a major preventable cause of permanent hearing loss worldwide.

8. **Hearing Protection:** Despite the availability of hearing protection, non-use among workers exposed to hazardous noise remains an issue. Some studies suggest a significant percentage of workers in noisy environments do not regularly use hearing protection.

9. **Under-Reporting:** Occupational hearing loss is often under-reported, partly due to its gradual onset and the lack of immediate symptoms in many cases.

10. **Long-Term Effects:** Beyond the loss of hearing, occupational noise exposure is associated with other health issues, such as stress, hypertension, and increased accident risk.

These statistics underscore the importance of effective hearing conservation programs in the workplace, as well as ongoing efforts to raise awareness and compliance with safety standards. Note that these figures are subject to change over time and may vary with new studies and reports.

HEARING PROTECTION

WHAT'S AT STAKE?

Lawn mowing, fitness classes, truck and tractor pulls, airplanes, table saws, rock concerts, snowmobiles—all these environments can be too loud. The decibel is a unit used to express sound level, and "loud noise" means sounds that are more than 80 decibels. Loud noise can be very hazardous to your health and particularly to your hearing. Over time, exposure to loud sounds on a regular basis can result in permanent hearing loss. You often don't know you have the hearing problem until it is too late to do anything about it. Sudden, VERY loud noises, like explosions, can cause instant hearing loss.

The solution is to reduce noise from reaching the ears of people by having a form of hearing protection.

The effectiveness of hearing protection is often limited by personal and workplace factors, and it can reduce the audibility of warning sounds. For these reasons hearing protection must be selected and used with care and is not to be used as an alternative to reducing the noise in the workplace.

WHAT'S THE DANGER?

Hearing Risk

Excessive exposure to noise causes irreparable damage to your hearing. Often the damage gets gradually worse with each repeat exposure, but some very high level sounds, such as those from gun fire and explosions, can cause immediate damage.

Long Term Exposure Causes Damage

Long term exposure can arise from regular working in a noisy occupation or workplace. Receptors that provide the signal from the ear to the brain are damaged by excessive noise, often without the sound seeming too loud or painful. The receptors do not recover. Over time more receptors are damaged, increasing the hearing loss. The risk to any individual is normally determined by their A-weighted daily or weekly personal noise exposure (the overall amount of noise in terms of level and duration in a working day or week).

Instantaneous Damage

Very high level sounds, such as fireworks, gunfire or explosions can result in injury that causes immediate hearing loss or other hearing damage. The risk of instantaneous damage is normally determined by the maximum instantaneous C-weighted peak sound pressure of the sound.

HOW TO PROTECT YOURSELF

Risk Assessment Identify Those At Risk

A risk assessment is necessary to identify who is exposed above the lower or above the upper action values and the work locations and tasks that significantly contribute to their exposure. Risk assessments should identify those who need hearing protection, how much protection is required, and when and where it must be used. The daily personal noise exposure of each individual can be calculated from the noise level and duration of each noisy task within their working day, or by measurement of the person's exposure over the working day using a sound exposure meter (noise dosimeter). If a noise dosimeter is used, one that provides a logged record of how the sound level varies with time will aid identification of the significant noisy periods and tasks when hearing protection may need to be worn.

It is important in the risk assessment to consider safety factors when hearing protection is to be used. Hearing protection reduces a person's ability to hear warning sounds. You might need, for example, to consider alarm audibility, safe working during vehicle movements or speech communication.

Adequate protection is essential, but excessive attenuation (over protection) and requiring use where protection is not required should be avoided.

Noise Exposure Hazards

Over time, exposure to noise can cause the following problems:

- Noise-induced hearing loss (NIHL)
- Tinnitus (ringing in the ears)
- High blood pressure
- Fatigue.

Noise-induced hearing loss is the most common occupational disease suffered by worker. It often happens gradually, so workers may not realize that loud noise from their job is damaging their hearing. By the time they do realize it, it's too late—the damage is permanent and can't be reversed.

Hearing Loss

Any reduction in the normal ability to hear is referred to as a loss of hearing. A hearing loss can be either temporary or permanent.

Other prime causes of permanent hearing loss are age, traumatic injuries (such as from explosions or gunfire), and infection. Noise, however, is the major identifiable cause of hearing loss.

Hearing Protection Devices

Hearing protection devices (HPDs) should only be provided when engineering and administrative controls to reduce noise at the source or along the path cannot be implemented or while such controls are being put in place. HPDs are barriers that reduce the amount of noise reaching the sensitive inner ear. Fit, comfort, and sound reduction or "attenuation" are important considerations in choosing HPDs. The types of HPDs used most commonly are earplugs or earmuffs. Earplugs attenuate noise by plugging the ear canal. Earmuffs cover the external part of the ear, providing an "acoustical seal".

Effectiveness

The effectiveness of HPDs depend on the amount of time they are worn. What is not obvious to most wearers is that the effectiveness of HPDs can be reduced by as much as 95% or more if the protectors are not worn for as little as three or four minutes in noisy environments. It is therefore important to wear HPDs during the entire period of exposure in order to achieve the maximum protection available.

Comfort

Comfort is an important consideration in selection. An HPD that isn't comfortable will simply not be worn or will be worn improperly. With earplugs, several factors affect comfort. Since some plugs are relatively non-porous, they can often create a pressure buildup within the ear and cause discomfort. Dirty plugs may irritate the ear canal. Because of the shape of an individual's ear canals, certain plugs may not fit properly. Earmuffs should be made of materials that do not absorb sweat and that are easy to maintain and clean. The earmuff cup should be adjustable to conform to various head sizes and shapes. Headband tension and earcup pressure should be adjusted so that they are effective without being uncomfortable. Weight may also be a factor.

Work Environment/Procedures

HPD selection is sometimes dictated by the constraints of the work area or work procedures. For example, large volume earmuffs may not be practical in confined work situations with little head room or clearance. In that case, flat-cup muffs or earplugs may be more practical. Where work is necessary near electrical hazards, it may be desirable to use non-conductive suspension type muffs. The choice of protector may also be affected by the nature of work, as in welding where certain types of earmuffs may interfere with the welder's helmet. The attenuation of the muff-type hearing protector may be considerably reduced when worn with spectacle-type safety glasses. (The head configuration of the wearer and the type of glasses worn will determine the reduction in attenuation.)

Where safety glasses must be worn, cable-type temples should be used in order to allow the smallest possible opening between the seal of the protector and the head. Otherwise earplugs should be worn, provided they are adequate.

Consideration should be given to hearing protectors that can be attached to hard hats where exposures to noise may be high but intermittent and where hard hats must be worn at all times. Periodic adjustments may be necessary because movement of the hard hat may break the seal of the HPD.

Consideration should also be given to work involving oils, grease, and other products that may soil hands. Ear infections may occur when earplugs are inserted by dirty hands.

Overprotection

Workers wearing HPDs that provide too much attenuation may feel isolated from their surroundings. Sounds may be heard as muffled. Speech or warning sounds may be unrecognizable.

Overprotection can lead workers to resist wearing HPDs. Protectors should be chosen to provide sufficient, but not excessive, attenuation.

Where communication is critical and hearing protection is required, communication headsets can be considered. These devices provide protection against harmful levels of noise, yet allow for important communication to be heard.

Fit, Care, and Use

An employer who provides a worker with an HPD must provide adequate **training and instruction** to the worker in the care and use of the device.

Summary

Control of noise in workplaces is of growing importance as a result of increasing hearing loss claims.

This is a convenient way of understanding the overall problem and a useful approach for putting control measures in place. The three components can usually be treated in isolation, although sometimes all three must be considered together in order to control unacceptable noise levels.

1. At the source, measures are aimed at reducing or eliminating the noise being generated.

2. Along the path, barriers can be introduced to reduce the amount of noise reaching the worker.

3. At the worker, measures involve personal protective equipment being properly selected, fitted, and worn. This PPE must be used in high noise environments all the time.

Failure to provide preventive or control measures will result in temporary and ultimately permanent hearing losses.

FINAL WORD

The surest methods of preventing noise-induce hearing loss (NIHL) is to eliminate the source, or to reduce noise at the source by engineering methods. However, in certain situations, these measures are not possible. In such workplaces, workers may need to wear hearing protectors to reduce the amount of noise reaching the ears.

QUIZ

1. **HPD are not to be used as an alternative to reducing noise in the workplace.**
   - True
   - False

2. **Fireworks, gunfire or explosions can result in injury that causes immediate hearing loss.**
   - True
   - False

3. **Exposure to loud and noisy workplaces on a regular basis does not result in permanent hearing loss.**
   - True
   - False

4. **Hearing loss due to loud noise is preventable and it is treatable once you have the hearing loss.**
   - True
   - False

WHAT WOULD YOU DO?

You are a probationary employee in the welder sector of the business. Your equipment for the job includes the helmet and earmuffs for hearing and ear protection. You are having problems with the fit and comfort of the earmuffs due to the helmet. You have showed and demonstrated the problem to your supervisor and have requested more training and instruction in the use of the earmuff protection. Supervisor says there is no time or money for this expense and you have to do your best.

What would you do?

BEFORE THE TALK - TIPS

Before the Meeting Preparation Tips

- Pass around the attendance sheets.

Be prepared to discuss:

- Safe work practices and polices passed around pertaining to Hearing Protection protocols and programs industry - wide and at your location.

- Proper reporting procedures relating to accidents, injuries, illnesses, fatalities, near misses / close calls including hazards and concerns at your location.

Other:

1. Lead a discussion and Q and A with participants about hearing safety hazards they encounter on the jobsite.

2. Bring to the meeting an employee who has hearing loss on the job site and canvas ways to prevent hearing loss.

3. As a result of this meeting, what hearing safety procedures and protocols would participants recommend to protect employees from any hearing loss.

AFTER THE TALK- *CHECKLIST*

PROVIDED FOLLOW-UP TO WORKERS THAT DID

POORLY ON THE QUIZ
NAME: _____
_____
DATE: _____

OBSERVED WORKERS
TASK(S): _____
_____
DATE: _____

REFRESHER TRAINING
TOPIC(S): _____
_____
DATE: _____

OTHER (DESCRIBE): _____
MEETING DATE: _____
LOCATION: _____

NOTES

ANSWERS:

1. True

2. True

3. False

4. False

ATTENDANCE

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INSTRUCTOR: _____ **DATE:** _____

SAFETY TALK: _____

Addressing Your Concerns about Hearing Protection

WHAT'S AT STAKE?

Hearing loss is one of the fastest growing chronic conditions facing today's workers, affecting nearly 30 million people in the United States and Canada. While there are many causes of hearing loss, noise-induced hearing loss (NIHL) is one of the most common types and it can affect anyone who is exposed to loud sounds or noise over a long period of time, whether at work or during recreational activities.

WHAT'S THE DANGER?

Hearing loss can have a profound effect on your quality of life. You might endure a permanent ringing in your ears. Sounds become distorted or muffled, making it difficult to watch TV or hold a conversation. There are also psychological effects that come with being unable to communicate with others, such as frustration, withdrawal and depression.

HOW TO PROTECT YOURSELF

NIHL is irreversible, but it is also preventable. To protect yourself, you need to know which noises can cause damage (those at or above 85 decibels) and you need to wear hearing protection whenever you're exposed to high noise levels.

In order for your hearing protection to do its job, you have to take good care of it so it will work properly in a crisis. And you have to wear it properly and consistently.

Unfortunately, not everyone follows these simple instructions. Why not? Usually because of misinformation. So let's address some common concerns about hearing protection.

Concern #1: *If I wear hearing protection, I won't be able to hear warning sounds or detect if a machine is not functioning properly.*

If your hearing is not damaged, then you should be able to hear warning and machinery sounds just fine, although they may sound different to you at first. If your hearing is already damaged, then hearing protection may slightly affect your ability to hear these sounds. Talk to your fitter about possibly wearing hearing aids under earmuffs.

Concern #2: *Hearing protection is uncomfortable.*

At first, you may find hearing protection to be uncomfortable. But—just like a new pair of shoes—if the device fits properly and is worn correctly, you should get used to it eventually.

Concern #3: *The noise doesn't bother me like it does other people. Am I just getting used to it?*

Sorry, but the ear does not get used to noise. If you're not being affected by loud noise then you may already be developing hearing loss. Get your hearing checked right away.

Concern #4: *Earplugs cause ear infections.*

It's unlikely, as ear infections are generally caused by a virus in the middle or inner ear, or some kind of scratch in the ear canal that might be aggravated by the earplug. When selecting your hearing protection, talk to the fitter about any conditions you have that might interfere with or be aggravated by an earplug. You may want to wear an earmuff until the condition clears up.

Concern #5: *I tried hearing protection before. It didn't work for me then, so it won't work for me now.*

Hearing protectors are only effective if they fit properly and are worn correctly. Select your hearing protection carefully and be sure to fit each ear separately. Your ear canals may differ from each other in size and shape.

FINAL WORD

Listen up! Noise-induced hearing loss is permanent. But preventing it is simple: Select the protection that's right for you and use it properly whenever you are exposed to high noise.

QUIZ

1. When first wearing hearing protection, it may take a while to adjust to how familiar workplace equipment now sounds.
   - True
   - False

2. Hearing protection is always uncomfortable, even if it's properly fitted.
   - True
   - False

3. When selecting your hearing protection, what should you consider choosing if you have a scratch in your ear canal?

   _____

4. The size and shape of a person's ear canal is the same in both ears.
   - True
   - False

5. Over time, the ear adapts to loud noises without incurring any damage.
   - True
   - False

WHAT WOULD YOU DO?

You've been working on a new machine for the past week and were given earplugs to use, but you find them really uncomfortable and don't always wear them. Now you're experiencing a ringing or humming in your ears when you leave work. What should you do?

BEFORE THE TALK - TIPS

1. It's important to select the appropriate hearing protection. Share with your workers these factors that they should consider when making their selection:
   - Comfort
   - How much noise reduction is needed?
   - Cleanliness of the site
   - Compatibility with other PPE
   - Special job requirements
   - Communication needs
   - Temperature of work environment
   - The worker's own hearing ability
   - Physical requirements of the job
   - Ease of use
   - The worker's own physical characteristics

2. Is it time to conduct a new hazard assessment for PPE requirements? Generally, these should be done:
   - Before a project begins or a site opens
   - Daily at sites where conditions and hazards change all the time
   - At reasonably practicable intervals to prevent development of unsafe and unhealthy conditions
   - When new work processes are introduced

AFTER THE TALK- *CHECKLIST*

PROVIDED FOLLOW-UP TO WORKERS THAT DID

POORLY ON THE QUIZ
NAME: _____
_____
DATE: _____

OBSERVED WORKERS
TASK(S): _____
_____
DATE: _____

REFRESHER TRAINING
TOPIC(S): _____
_____
DATE: _____

OTHER (DESCRIBE): _____
MEETING DATE: _____
LOCATION: _____

NOTES

ANSWERS:

1. True
2. false
3. An earmuff until the scratch heals
4. False
5. false

ATTENDANCE

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INSTRUCTOR: _____ **DATE:** _____

SAFETY TALK: _____

Noise Hazards

WHAT'S AT STAKE?

It's hard to believe that noise can cause permanent damage to your hearing – but it can. It's important to protect yourself against noise hazards.

WHAT'S THE DANGER?

Medicine or surgery cannot reverse noise-induced hearing loss. A hearing aid can't completely restore hearing either.

EXAMPLES
A sudden single loud sound of an explosion, jet engine or air tool can damage hearing. However, hearing loss usually occurs from lower doses of noise over time, with damage adding up.

HOW TO PROTECT YOURSELF

Your employer is responsible for figuring out the right hearing protection equipment for you to use, and keeping the workplace as free as possible from noise hazards. If you have suggestions, pass them to your supervisor.

Here's how to protect your hearing:

- *Reduce* the noise reaching your ears. Nothing can totally block sound, but some hearing protection devices block out part of the noise.

- *Electronic hearing protection* devices permit conversations and warnings to reach the ear, but prevent harmful sound-pressure levels. Other electronic hearing protectors pick up and amplify desirable sounds. Some earmuffs or earplugs combine with communication systems for use in noisy areas.

- *Earmuffs* – filled with liquid or foam – come in various styles for function and comfort. Earmuffs are fitted with a headband made of metal or plastic. Some headbands can be folded or put around the front or back of the neck in various positions. Cooling pads are even available for earmuffs worn in hot work environments.

- *Earplugs* can be pre-molded to fit all wearers, or custom molded to fit exactly. They can be made expandable or non-expandable, and may be either reusable or disposable. Earplugs are available on cords you can wear around your neck so you can take earplugs out and put them in easily.

- *Ensure* your hearing protection is comfortable, fits properly and is compatible with other personal protective equipment (PPE) such as a hardhat.

- *Check out* specially-designed hearing protectors made to wear with other PPE. They attach to slots and brackets on hardhats or helmets for combined hearing, head and face protection.

- *Cooperate* with your workplace's hearing protection program. Take the regular hearing tests and wear recommended personal protective equipment. Take good care of your PPE by cleaning it according to the manufacturer's recommendations and replacing it as needed.

FINAL WORD

Hearing damage is permanent, but it can be prevented. Take hearing protection seriously.

QUIZ

1. Which of the following reverses noise-induced hearing loss:
   a. Medicine
   b. Surgery
   c. A hearing aid d. None of the above

2. Hearing loss most often is a result of a sudden single loud sound.
   - True
   - False

3. Hearing loss usually occurs from harmful levels of noise over time.
   - True
   - False

4. Some hearing protection devices are in the form of earmuffs.
   - True
   - False

5. Manufacturers of hearing protection equipment provide helpful guidelines on cleaning it.
   - True
   - False

BEFORE THE TALK - TIPS

1. Prepare to discuss specific noise hazards in your particular line of work.
2. Use this safety meeting to encourage employees to think about noise protection outside the workplace.
3. Encourage your employees to be more vigilant about maintaining machinery. You can give them added incentive by explaining the effect of higher noise levels caused by slight imbalances or friction in poorly-maintained machinery.
4. Assure employees that their suggestions for reducing noise are always welcomed.
5. Bring examples of hearing protection equipment. Have employees demonstrate how to correctly use it.
6. Invite a knowledgeable representative of a manufacturer of hearing protection equipment to speak with your employees about cleaning and maintenance of their equipment.
7. Conduct a tour of the workplace focusing on noise hazards and what could be done about them

AFTER THE TALK- *CHECKLIST*

PROVIDED FOLLOW-UP TO WORKERS THAT DID

POORLY ON THE QUIZ
NAME: _____
_____
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OBSERVED WORKERS
TASK(S): _____
_____
DATE: _____

REFRESHER TRAINING
TOPIC(S): _____
_____
DATE: _____

OTHER (DESCRIBE): _____
MEETING DATE: _____
LOCATION: _____

NOTES

ANSWERS:

1. d 2. False 3. True 4. True 5. True

ATTENDANCE

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Thank You for your interest.

Get in touch.

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