

# Hearing Protection

*Hazards include physical (noise).*

Noise can startle you and disrupt your concentration. Noise can also interfere with your communications when you are talking to someone compromising both performance and safety. Hazardous noise is usually loud, but some high-pitched noises can harm the ears without being heard. Hazardous noise can cause pain and nausea when the exposure is severe and can lead to hearing loss. This noise-induced hearing loss is preventable but once acquired, hearing loss is permanent.

**Permanent hearing loss (nerve damage) can occur when the ear is exposed to 85 decibels (dB) or higher averaged over an 8-hour work day.**

- If workers standing only a few feet apart must shout or raise their voices to be heard, noise levels are likely above 85 dB.
- Symptoms of noise induced hearing loss can include ringing in the ears (tinnitus) and difficulty understanding conversation (sound distortion).
- Hearing loss is usually painless, and the symptoms can be hard to identify and may go unnoticed.
- Noise that causes pain in the ear is an indication that the noise level is too high.
- Any exposure to the ear at 140dB or higher can cause immediate and permanent hearing loss.

## Controls - How can we control the noise levels?

- Engineering Controls involve modifying or replacing equipment or making changes at the noise source or along the transmission path to reduce the noise level at the worker's ear.
  - Choosing low-noise tools
  - Maintaining and lubricating equipment
  - Providing barriers between the noise source and the worker
  - Enclosing or isolating the noise source
- Administrative Controls are changes in the workplace that reduce or eliminate worker exposure to noise.
  - Operating noisy machines during shifts when fewer people are exposed.
  - Limiting the amount of time a person spends at a noise source.
  - Providing quiet areas where workers can gain relief from hazardous noise sources.
  - Restricting worker presence to a suitable distance away from noisy equipment.

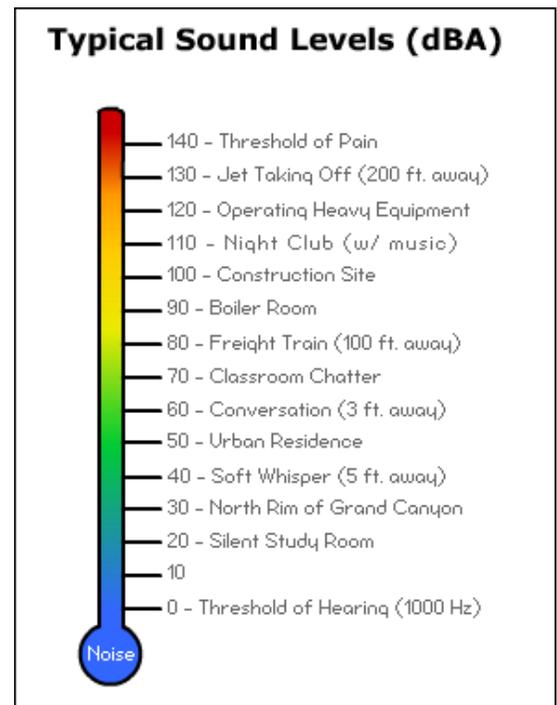


Figure 1. Noise Levels - WWW.OSHA.GOV

- Hearing protection devices (HPDs), such as earmuffs and ear plugs, are considered an acceptable option to reduce exposures to noise following engineering and administrative controls.

### **Choosing the correct HPD**

The choice of hearing protectors is individual and depends on several factors including level of noise, comfort, and the suitability of the hearing protector for both the worker and the environment. The hearing protector should provide the desired noise reduction; the Noise Reduction Rating (NRR) indicates the decibel reduction a wearer can expect from a properly fitted hearing protective device. The following list provides several different types hearing protection devices to choose from.

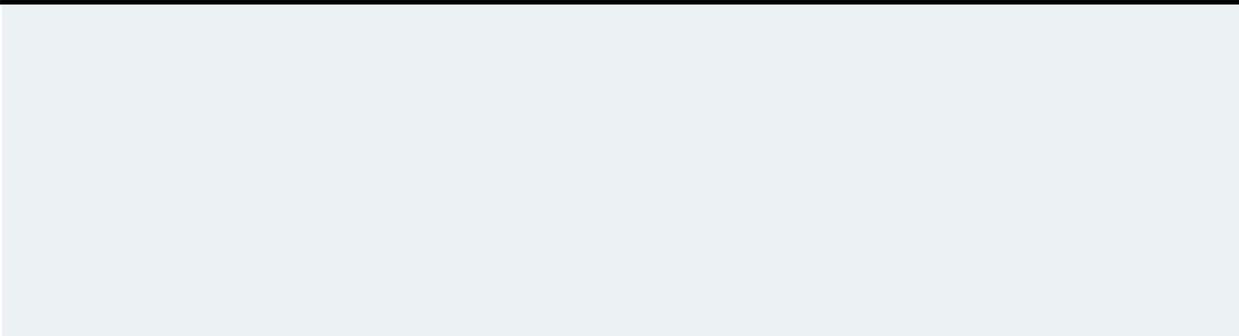
- Earplugs - have the highest NRR (up to 33 dB) and are inexpensive. Plugs must be inserted properly!
- Earmuffs – form air-tight seal over the ear, NRR up to 30 dB; less effective when using eyewear.
- Canal Caps – lower NRR; use pressure from a headband to hold the earplugs in place.

### **Questions to improve noise safety in your workplace:**

- What are the primary sources of noise in your work area?
- What actions can be taken to reduce the level of noise in your work area?
- If you are required to wear ear protection, does it fit properly and is it effective?

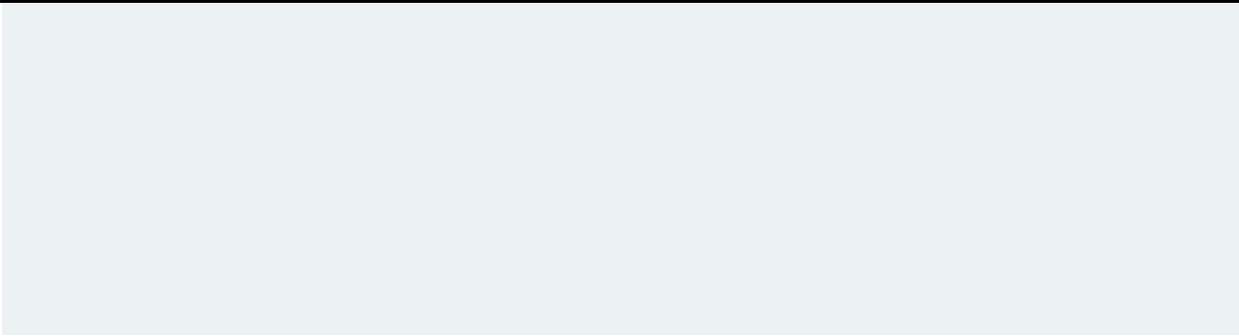
**Site specific requirements:**

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**Employee participants:**

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**Date:**

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