

# Hearing Protection Devices

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## Purpose

To understand (1) The selection and use of hearing protection devices; and (2) Issues influencing their effectiveness

## Chapter Topics

- Worker Acceptance of Hearing Protection Devices
- Types of Hearing Protection Devices
- Dual Protection
- Noise Reduction
- Fit-testing
- Regulatory Requirements
- Hearing Protection Device Attenuation in the Real World
- Wearing Time

## Worker Acceptance of Hearing Protection Devices

Despite our best efforts to reduce hazardous noise via engineering and administrative controls, **hearing protection devices** (HPDs) are still needed to reduce noise exposures in most **hearing conservation programs** (HCPs). Workers must accept the use of HPDs, and management must visibly support hearing-protection policies.<sup>1</sup> Everyone, including visitors and management, must use properly fitted HPDs in hazardous

noise areas. Workers need to be involved in selection, evaluation and individual decisions about their HPDs.

Many consider comfort to be the most important factor in worker acceptance of hearing protectors.<sup>2</sup> In a National Institute of Occupational Safety and Health (NIOSH) study,<sup>3</sup> interference with communication was the most cited reason for not using HPDs. Other reasons included interference with job performance, itching, discomfort, headaches and difficulty fitting the device. As **occupational hearing conservationists** (OHCs), we need to help workers overcome these barriers and have the appropriate HPDs available for use.

How do workers choose a particular earplug? It could come down to comfort, ability to communicate, color, convenience or, unfortunately, the perception that everyone else is using a particular model. However, without proper guidance from the OHC, they may not choose the earplug that is best for them. OHCs play a critical role in worker acceptance of HPDs. Workers are more likely to wear HPDs if they are encouraged to participate in the HCP, fully understand the need for HPDs and are given a choice of types and brands.

NIOSH has identified important factors that determine worker willingness to consistently wear HPDs<sup>3</sup>:

- Convenience and availability

**Table 13-1. Suggested responses to excuses for not using HPDs.**

Excuse	Response
"I've already lost some hearing."	"Hearing protection devices can help prevent further hearing loss."
"I am used to the noise."	"The ear cannot get used to noise. Instead, this may be a sign of a mild hearing loss."
"Hearing protection devices are uncomfortable."	"Let's find a style more comfortable for extended wear. A properly fitted device should be comfortable all day."
"I can't hear my coworkers."	"If you use a hearing protection device, you will hear sounds (eg, voices, machinery) differently. But these devices reduce background noise along with the signals you want to hear. It may require an adjustment, but most users can still hear the signals they want to hear while wearing these devices. We can find one with the right amount of noise reduction for you."
"My machine sounds different."	"It may take time to find the right hearing protection device with enough protection—but not too much—and adjust to the new way things sound. Let's try a device that provides less noise reduction."
"I'll get an ear infection."	"Earplugs do not cause ear infections, but they may aggravate an existing one. If you have an ear infection, switch to earmuffs until it heals."
"I'll hurt my eardrums if I insert my earplugs too deeply."	"Earplugs are designed to fit safely in your ear canal. You won't damage your eardrums with HPDs."
"I'll just get a hearing aid."	"Hearing aids cannot restore normal hearing."