

## Hearing Conservation Program FAQ

### **Q1: Why do I need hearing conservation or hearing protection?**

Noise is one of the most pervasive problems in today's occupational environment, causing gradual hearing loss in workers in a wide variety of occupations. The amount of damage from noise depends on the intensity of the noise, measured in decibels (dB), and the duration of exposure. Sounds above 130 dB are painful, and most people will avoid these. However sounds between 85 and 120 dB may not cause physical pain, but they will damage hearing over time. Other effects of loud noises may include anxiety and irritability, an increase in pulse rate and blood pressure, or an increase in stomach acid. Very loud noise can reduce efficiency in performing difficult tasks by diverting attention from the job.

### **Q2: How do I know whether I am required to enroll in the hearing conservation program?**

Workers who are exposed to a time-weighted average of 85 decibels (A-scale) or more for an eight-hour exposure are considered to have occupational noise exposure and are required to enroll in the hearing conservation program. [EH&S Hearing Conservation Program](#) (more information available on the website) can help you to evaluate the noise exposure level. Those who are not required to enroll in the hearing conservation program and wear hearing protection devices for their own comfort are considered voluntary users.

### **Q3. What do I need to do if I am required to enroll in the hearing conservation program?**

To be considered to enroll in the hearing conservation program, please contact [EH&S hearing conservation program](#) for a noise exposure level assessment. Once you are determined to be required to enroll in the hearing conservation program, EH&S will help you to select hearing protection devices depending on your own comfort, noise reduction rating (NRR), etc. Hearing conservation program training, baseline and annual audiometric testing are also required for those who are required to enroll in the hearing conservation program. Hearing conservation program training is available through EH&S ([askehs@umass.edu](mailto:askehs@umass.edu)).

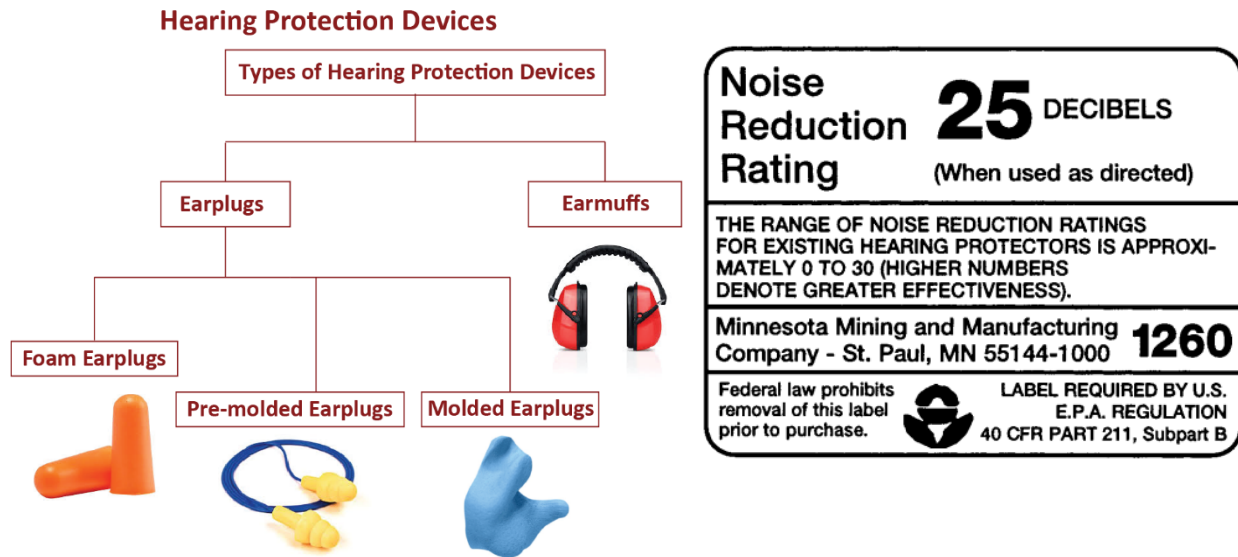
### **Q4: What is audiometric testing?**

Audiometric testing can identify occupational hearing loss and identify Standard Threshold Shifts (STS) in hearing. The baseline audiogram is the reference audiogram against which future audiograms are compared. Annual audiograms are required each year after the baseline audiogram. The goal is to catch hearing loss before it impacts you and ensure that your hearing protection is used properly to prevent further loss. Please contact your supervisor to schedule a baseline/annual audiometric testing. Audiometric testing is conducted by [Center for Language, Speech, and Hearing Services of Department of Communication Disorders](#).

### **Q5: What are hearing protection devices and what is noise reduction rating (NRR)?**

In general, disposable earplugs typically receive NRR rating in the low to mid 20s. Disposable earplugs include wax plugs, foam plugs and most unspecialized, general plugs. The highest NRR-rated earplugs and earmuffs support reuse. Please find the picture of various types of hearing protection devices below on the left.

The NRR describes the average sound level reduction (attenuation) provided by a hearing protection device in a laboratory test. Since the NRR is based on laboratory testing, it does not take into account the loss of protection that occurs when hearing protectors are not fit properly or when they are not worn for the entire time that the wearer is exposed to noise. The NRR rating is usually displayed on the package of the hearing protection devices, please find an example picture below on the right.



**Q6: How do you reduce the NRR to estimate the effectiveness of a hearing protection device?**

For most wearers, the NRR significantly overestimates the protection of the hearing protector in the workplace. OSHA 1910.95 Appendix B requires hearing protector attenuation and OSHA strongly recommends applying a 50% correction factor when estimating field attenuation. Therefore, please find the general calculation for NRR derating below:

- 1) Subtract 7 dB from the NRR if noise is measured on the A-weighted decibel scale (dBA). (You may skip this step if noise is measured on the C-weighted dB scale)
- 2) Divide the result of step 1 (NRR-7) by 2.

You may also contact [Hearing Conservation Program](#) to help you select hearing protection devices.

**Q7: May I use noise-cancellation headphones as hearing protection devices?**

If you are required to enroll in the hearing protection program, then NO. Noise-cancelling headphones and earbuds are not hearing protection devices, although they may look similar in some cases.

If you are voluntary users of hearing protection, please use noise-cancellation headphones at your own risk. But please keep in mind that they are not hearing protection devices and sometimes if the music volume is too high, they may also be a hazard to your hearing.

In addition, use of earbuds or headphones is not permitted in lab spaces at UMass Amherst as stipulated in the Chemical Hygiene Plan. Please find [Noise-Cancelling Devices Vs. Hearing Protection Fact Sheet](#) for more information.

**[Please see Hearing Conservation Program Website for more information.](#)**