

NOISE AND HEARING CONSERVATION

Noise induced hearing loss normally takes place gradually, with no warning symptoms and no external signs of damage, making it difficult for you to know that this is occurring. It is usually caused by exposure to increased sound levels over a period of time.

This type of hearing loss is preventable, and it is rarely too late to intervene. Although hearing protection will not bring back lost hearing, it will stop further damage from occurring.

Hearing loss will affect all areas of your life. It not only affects your work life by impairing your ability to detect or discriminate warning signals and by limiting your ability to hear clearly in meetings and other group settings, it also affects everyday interactions such as speaking and listening on the telephone or in places with higher background noises such as restaurants.

Hearing protectors used at Yale University include earmuffs and formable foam style earplugs. Both are effective at reducing noise levels if used correctly. Some of the advantages and disadvantages of each type of protector are listed in the following table.

Type	Advantages	Disadvantages
Ear Muffs	<ul style="list-style-type: none"> • Offer more consistent protection • Usually last longer than ear plugs 	<ul style="list-style-type: none"> • The protection level is decreased when wearing eye/safety glasses because the muff seal around the ear is broken by the eyeglass temple piece • Can be uncomfortable to wear for long periods in hot/humid environments
Formable Ear Plugs	<ul style="list-style-type: none"> • Can be worn with glasses • More comfortable in hot/humid environments • Offer higher attenuation than most muffs 	<ul style="list-style-type: none"> • Must seal well/fit properly to ensure adequate protection

Each ear plug or muff has a noise reduction rating (NRR) which is identified on their boxes. The wearing of hearing protection should be used to bring noise levels down below 85dBA. Sound level surveys have been conducted in all high noise areas under the Yale University Noise and Hearing Conservation Program. This information should be used to evaluate whether the hearing protectors you are wearing are effective. *For added assurance, OSHA requires that 7dBA be subtracted from the manufacturer's NRR rating. It is also recommended that a 50% safety factor be added to this equation. Therefore, if the NRR of the hearing protectors is advertised as 25NRR, the actual NRR is $(25 - 7)/2 = 9$ dBA. If the noise level is 90 dBA, the hearing protectors will reduce it to $90 - 9 = 81$ dBA.* In areas with noise levels at or above 100 dBA, both ear plugs and muffs should be worn to ensure adequate protection.

Foam earplugs are disposable and should be discarded after each use. Earmuffs should be kept clean and stored in a sealed bag away from a dirty work area.

Audiometric testing is coordinated through the Employee Health Office on an annual basis. These tests are important to determine whether noise-induced hearing loss is beginning to occur and to catch it early, before the damage becomes too severe.

Remember: Noise-Induced Hearing Loss is Preventable!

The OSHA noise standard, 1910.95 is available from the EHS department, and is also on the OSHA web site at www.osha.gov.