



screening • assessment • prevention

Hearing Protection

Exposure to loud noise can lead to permanent hearing loss. If you are exposed to loud noise protect your ears. It is also a legislative obligation when workplace noise levels exceed 85dB or more.

A quick rule of thumb to assess the need for protection from noise is if you need to raise your voice in order to be understood in background noise **or** if your ears "ring" after you have been in loud noise **or** the world seems quieter after exposure to noise.

How much protection do you need?

Hearing loss is a function of exposure time, the average sound level, and the peak level of very loud sounds. Exposure to excessive noise from industrial machinery, heavy construction equipment and vehicles, power tools, aircraft, gunfire, motorcycle and auto race tracks, dental drills, sporting events, fireworks, rock concerts, marching bands, and music from a player's own instrument or nearby instruments can cause hearing loss depending on the intensity and duration of the noise. Some persons seem more susceptible to hearing loss from high-level sound than others. Any exposure over 80-85dB will cause permanent noise damage over time

How hearing protection works

Decibels are measured on a logarithmic scale, and there is a 10-fold increase in sound energy for each 1dB increase. In addition, noise exposure is cumulative so the noise at home or at play must be counted in the total exposure during any one day. Hearing protection effectively reduces (or attenuates) dB level to less than the maximum of 80-85dB when worn correctly.

All protective devices are given one of 5 ratings, depending on the dB(A) levels a person is exposed to.

HEARING PROTECTOR CLASSIFICATION		
Class	SLC ₈₀ range	L _{Aeq,8h} dB(A)
1	10 to 13	Less than 90
2	14 to 17	90 to less than 95
3	18 to 21	95 to less than 100
4	22 to 25	100 to less than 105
5	26 or greater	105 to less than 110

Types of protection

It is important that hearing protection is carefully selected for each individual, based on the intensity level, duration, and type of noise exposure.

Selection of hearing protectors should be based on:

1. The degree of protection required. It is not effective to over-prescribe_ ie use protectors with unnecessarily high attenuation which may cause communication difficulties and be unsuitable because of discomfort and inconvenience
2. Suitability for the type of work environment. For example ear plugs may not be suitable for use in work that requires them to be inserted with dirty hands or muffs may be an uncomfortable alternative in hot environments.
3. The comfort, weight and clamping force of the hearing protector
4. The fit to the user. Hearing protectors should be fitted and assessed for suitability individually. For example glasses should be not be taken off when fitting ear muffs and disposable plugs need to be able to conform to the user's ear canal.
5. To be considered in context with other personal protection to be used by the wearer. Protectors should not mask warning sounds. The use of personal hearing protection may make it more difficult for employees to hear sounds if they already have a hearing loss.

When using hearing protectors, one will hear one's own voice as louder and deeper. This is useful sign that the hearing protectors are properly positioned.

Generally the choice for protection is Ear Muffs or Ear Buds

Most important after selecting the correct class of protection is correct fitting. Even if earplugs and/or muffs are worn continuously while in noise, they do little good if there is an incomplete air seal between the hearing protector and the skin

Musician Ear Plugs

Other specialised hearing protection devices are custom made ear plugs for musicians.

Conventional ear plugs are difficult for those who require protection for exposure to music as they muffle speech and music. Conventional earplugs reduce sound more in the high frequencies than in the low and mid frequencies, which makes music and voices unclear and unnatural. Deeply-inserted foam earplugs not only muffle the sound, but can provide 30-40 dB of sound reduction when only a small amount is needed. Off the shelf musician ear plugs can be purchased or they can be custom made by a qualified hearing aid provider. (see [Musician Ear Plugs Fact Sheet](#))

Contact us: info@hearinglink.com.au

Useful links: www.elvex.com/hearing-protection.htm
www.allearplugs.com
www.etymotic.com/ephp/erme.aspx