

## Noise induced hearing loss

Hearing loss can occur due exposure to loud sounds either in a single dose (i.e. an explosion) or prolonged exposure over time. Sensor cells in our inner ear, which relay messages to our brain, can become damaged when sounds are too loud. This damage can be temporary but in many cases, especially if exposure to loud noise is frequent and prolonged, damage can be irreversible resulting in a hearing loss.

## What are musicians' ear plugs?

Musicians' ear plugs allow users to protect their ears from loud sounds while filtering the sound so that music and/or speech is not significantly impacted.

There are several options available for those people wishing to obtain musicians' ear plugs. The ear plugs can be one-size-fits-most or can be custom-made. One-size-fits-most ear plugs are usually purchased over the counter (eg: at the pharmacy). Custom-made ear plugs require a minimum of two appointments with a private Audiologist and allow the user to select the amount of sound attenuation (reduction) required.

## Why use musicians' ear plugs?

Correctly inserted conventional ear plugs such as the roll up foam type can provide good protection from loud sounds; however musicians' ear plugs can offer several advantages, including:

- Conventional plugs may reduce sound more in the high frequencies than the low frequencies; this can make music sound unclear or unnatural. Many musicians' ear plugs reduce all the frequencies more evenly, giving a better (normal) quality of sound.
- Conventional ear plugs are usually single use, difficult to insert and can easily get dirty. Musicians' plugs are often custom made for ears and are thus easy to insert, are re-usable and often come in a storage container.



## Types of ear plugs

- **Solid ear plugs (custom-made)** - These provide the most protection (i.e. the greatest attenuation of sound), similar to correctly-inserted foam ear plugs. The reduction in sound levels varies for individuals, but is approximately 20 decibels (dB) for low frequency sounds up to approximately 40dB for high frequency sounds. This cuts down high frequency sounds more than low frequency sounds. Ear impressions are taken for these ear plugs.
- **One-size-fits-most** - These reduce sound levels fairly uniformly across the frequencies by approximately 20dB. They are available over the counter at private Audiology practices. The ear plugs are of a standard shape and are ready to fit/wear.
- **ER15 and ER25 ear plugs (custom-made)** - These ear plugs reduce sound levels fairly uniformly across the frequencies, by approximately 15dB or 25 dB depending on the attenuators chosen. These also aim to make the user's own voice sound as near to normal as possible whilst wearing the ear plugs. Ear impressions are required.
- **Non-linear filter ear plugs (custom-made)** - These reduce high intensity sound levels more than lower intensity sounds, and high frequency sounds more than low frequency sounds (maximum attenuation is approximately 25dB for very high intensity high frequency sounds). Ear impressions are required.
- **Vented/Tuned ear plugs (custom-made)** - These reduce sound levels by approximately 10-20dB, and reduce high frequency sounds more than low frequency sounds. Ear impressions are required.

Further information about musicians' earplugs can be obtained at [www.etymotic.com/hp/erme](http://www.etymotic.com/hp/erme)

## Where can I purchase musicians' ear plugs?

Most private audiology clinics will stock one-size-fits-most ear plugs, or are able to create custom fit ear plugs. A list of audiology clinics can be found at:

[www.audiology.asn.au](http://www.audiology.asn.au)

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