

Hearing Protection Devices

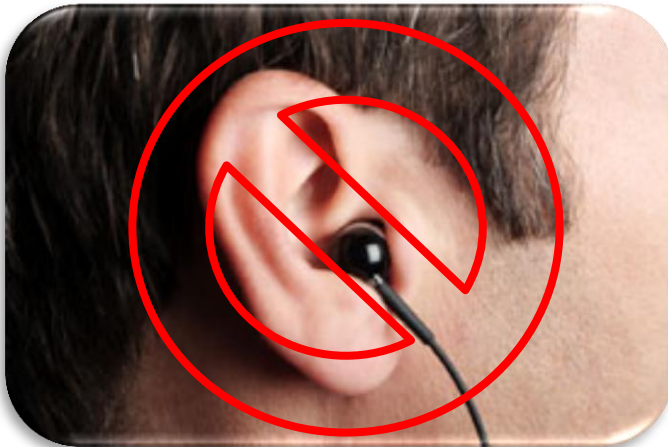
Ear buds and head phones common to cell phones and entertainment devices are not considered approved hearing protection devices (HPDs) for the occupational environment.

Most of these devices provide little to no protection from noise and only contribute to the background noise. Even the consumer noise canceling devices, which use active noise control to cancel background noise, fail to provide protection at frequencies most common in the workplace. Nearly all of these devices can amplify sound above 85dB (exposures at or above 85dBA for an 8 hour time weighted average are considered hazardous under JLab policy). Exposure is greater when the volume is increased to overcome background noise.

Noise induced hearing loss (NIHL) is caused by exposure to sound levels or durations that damage the hair cells of the cochlea. Initially, the noise exposure may cause a temporary

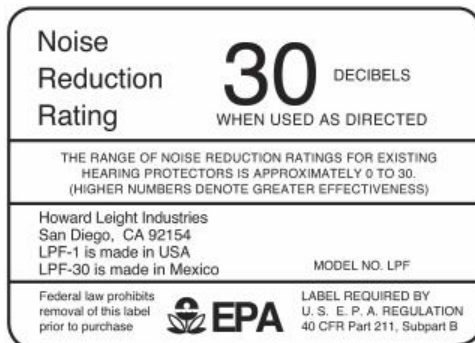
threshold shift—that is, a decrease in hearing sensitivity that typically returns to its former level within a few minutes to a few hours. Repeated exposures could lead to a permanent threshold shift, which is an irreversible sensorineural hearing loss.

<https://www.cdc.gov/niosh/docs/98-126/pdfs/98-126.pdf>



Only hearing protection devices that are designed and tested provide the

protection necessary from noise levels capable of causing noise induced hearing loss. This is called the noise reduction rating.



Example of labeling associated with all approved hearing protection devices used at Jlab.



3M Classic Ear Plugs (NRR – 29dB)



Howard Leight T3 Ear Muffs (NRR – 30dB)

The 3M Classic and the Howard Leight T3 are both examples of JLab approved hearing protection devices available in the stockroom. When worn properly these HPDs will provide adequate protection against noise induced hearing loss within environments of 100dBA or less for an entire 8hr work shift.

Any HPDs being used as a PPE requirement for a designated high noise operation, equipment, or area must be JLab approved. Hearing protection is required at Jefferson Lab when high noise levels have been determined to be 85 dBA or greater. Dual hearing protection (combination of plugs and muffs) is required for noise above 100 dBA. *ES&H Manual, Chapter 6640 Hearing Conservation Program*