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QUANTIFYING NOISE-INDUCED HEARING LOSS

When audiometric testing highlights a significant permanent threshold shift (PTS), the exposed individual is referred to an Occupational Physician for diagnosing the nature of the hearing loss. An Occupational Physician will typically question if the employee is exposed to loud noise at work and the noise-induced hearing loss (NIHL) diagnosis may be confirmed or rejected based solely on this information. This qualitative approach is very subjective and is prone to bias. A person routinely exposed to 87dBA (Lep,d) may not perceive the environment as noisy, although it will be damaging to his/her hearing.
To assist in diagnosing NIHL, an Occupational Hygienist should supply the diagnosing Physician with quantitative data such as the noise exposure level (dBA Lep,d) and the duration (years) of exposure. Once this data is obtained, the Physician could utilise the ISO 1999:2013 standard to estimate the noise-induced permanent threshold shift (NIPTS).
NIPTS allows you to quantify the amount of hearing loss attributed to noise exposure while accounting for the natural decrease in hearing due to age. For example, if a Physician is presented with a hearing loss case and the Occupational Hygienist provides exposure data that suggest a daily exposure level of 90 dBA (Lep,d) for 15 years, then the mean average hearing loss due to noise in 2, 3 and 4 kHz will be estimated at 8.3 dB.
ISO 1999:2013 method can only precisely quantify the predicted NIPTS for large noise-exposed populations. However, in doubtful individual cases, the data may provide an additional means for estimating the most probable causes in audiological diagnosis.
Source: ISO 1999:2013 Estimation of noise-induced hearing loss.
#IH #OH #Noise #Exposure #Health #Safety #Hearing

Noise-induced permanent threshold shift calculator
https://www.hearingconservation.org/assets/NIPTS%20Calculator.xls