**Articulo**

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**Titulo**

*Alternative metrics for noise exposure among construction workers.*

(Indicadores alternativos de exposición al ruido entre trabajadores de la construcción)

**Autores**

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**Abstract**

Although the exposure-response relationships for noise-induced hearing loss are relatively well established, there is not complete agreement on which metrics of noise exposure best represent risk of hearing damage. In particular, while L(eq), based on a 3 dB exchange rate (ER) is used by most agencies, US OSHA’s standard is based on the L(avg), which uses a 5 dB ER. In addition, peak levels of exposure, which are commonly found in some industries, including construction, are believed to increase risk above that predicted by the L(eq). This paper presents an analysis of a large database of noise exposures among construction workers, comparing several noise metrics, and their application to a cohort of construction workers. Metrics examined were the L(avg), L(eq) and L(max), expressing average levels of exposure across an exposure interval. Two novel metrics were derived from these monitored metrics, L(eq)/L(avg) and L(max)/L(eq), as measures of exposure variability and ‘peakiness’, respectively. A total of 730 workshifts, including data on 361 492 min of exposure to workers in nine trades were examined. Correlations between average metrics (L(eq), L(avg) and L(max)) are generally very high, while the variability metrics are poorly correlated with either average levels, or with each other, indicating that they characterize different aspects of exposure. Alternative models for estimating exposure for the cohort were considered and the use of a task-within-trade specific mean level was adopted. The task-specific estimates of exposure using the various metrics will be applied to the cohort’s work history to explore the importance of these alternative metrics in estimating risk of noise-induced damage.

**Enlace**