

Noise Exposure Limits and Smart Phone Apps

There is an interesting study about Smart Phone Apps that can be found on the NIOSH website, link below:

<https://www.cdc.gov/niosh/surveyreports/pdfs/349-12a.pdf>

Here is an excerpt from the report about limits for noise:

“Occupational Exposure Limits for Noise

OSHA’s standard for occupational noise exposure (29 CFR 1910.95) specifies a maximum PEL of 90 decibels, A-weighted (dBA), averaged over an 8-hour time period. Noise generated from weapons is classified as impulse noise. The regulation uses a 5-dB exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed is cut in half. For example, a person who is exposed to noise levels of 95 dBA can be exposed to only 4 hours in order to be within the daily OSHA PEL (permissible exposure limit). The OSHA standard has an action level of 85 dBA, which stipulates that an employer shall administer a continuing, effective hearing conservation program when the 8-hour TWA equals or exceeds the action level. The program must include exposure monitoring, employee notification, observation, an audiometric testing program, hearing protection, training programs, and maintenance of records. The standard also states that when workers are exposed to noise levels in excess of the OSHA PEL of 90 dBA (8-hour TWA), feasible engineering or administrative controls shall be implemented to reduce workers’ exposure levels. The OSHA standard states that exposure to impulse noise should not exceed 140 decibels (dB) sound pressure level (SPL).

The NIOSH REL for noise (8-hour TWA) is 85 dBA using a 3-dB exchange rate (see OSHA regulations in previous section for an explanation of exchange rates). NIOSH also recommends that no exposure be allowed above 140 dBA [NIOSH, 1998].”

So how do we know what the noise level is when we are at work? Some smart phone apps are actually worth considering and they are either free or low cost, see the conclusion below.

“Conclusion

This study showed that certain sound measurement apps for Apple smartphones and tablets can be considered accurate and reliable to be used in the field in lieu of more expensive professional equipment. Currently, Android and Windows developers do not offer apps that meet the functionality needed for occupational noise assessments due to lack of features and functionality required for such measurements (A/C/Z weighting, average or TWA calculation, calibration capability). Recent developments in the use of crowdsourcing and participatory noise monitoring techniques of environmental noise suggest that these apps may also be appropriate for use in certain occupational environments to improve awareness of workplace noise and help advance the hearing health of workers.”

While relying on a smart phone app may not be the best idea when you have a lot of noise exposure, it can be good for a starting point. You can always contact Warren County Self-Insurance for noise monitoring to be sure. Also, this is a good way to make employees aware of the possible noise levels and reinforce proper PPE.