

The THRESHOLD

A T K GROUP PUBLICATION DEVOTED TO OCCUPATIONAL HEARING LOSS PREVENTION AND PROGRAM MANAGEMENT

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Recordability Does Not Determine Baseline Revision

T K Group often receives calls and emails asking why a baseline was not revised after an “occupational” (Work Relatedness) determination was returned.

Recordable hearing loss does not determine baseline revision.

Neither OSHA or MSHA (Mine Safety and Health Administration) mandates or adopts a baseline revision protocol. Not so long ago, the Federal Railroad (FRA) administration mandated use of a revision protocol as described in the National Hearing Conservation Association (NHCA) *Professional Guide for Audiometric Baseline Revision*.

Baseline revision is directly tied to 10 dB Standard Threshold Shift (STS) persistence. Identification of a 10 dB STS is associated with 29 CFR 1910.95-The Hearing Conservation Amendment. Effective 1/1/2003, baselines are tracked and revised in each ear separately. Recordable hearing loss, on the other hand, is a separate regulatory issue outlined in Part 1904-Recording and Reporting Occupational Illnesses and Injuries.

Be assured that T K Group monitors all test data and makes baseline revisions when appropriate pursuant to professional baseline revision protocols. Not only are baselines revised after persistent shift activity, but when improvement is noted and/or when poor and inconsistent baselines (first) tests are demonstrated. OSHA does not allow establishment of new baselines after change in corporate ownership.

Lastly, baselines may be revised upon termination and rehire, however the final decision to do so is reserved to the reviewing Audiologist’s discretion.

Best to Retest

When a 10 dB Standard Threshold Shift (STS) is sustained, an optional 30-day retest is allowed to determine shift persistency. OSHA allows a retest within a period not to exceed 30 days from the date of the shift.

While optional, T K Group suggests that a retest always be conducted. If the STS is potentially Recordable, a non-persistent shift status upon retest eliminates the requirement to post that event to the OSHA 300 log.

More importantly, obtaining a retest may validate the presence of pathology in such cases where a “problem” loss configuration is initially presented.

If the retest validates a “problem” loss configuration and the loss pattern suggests significant acute, chronic, or potentially emergent pathology, the T K Group reviewing Audiologist will issue a Medical Referral Advisory in addition to the computer general AAO (American Academy of Otolaryngology) medical referral recommendation.

Please be reminded that employees listed on the Medical Referral report do not require a retest based upon their medical referral status alone; it is quite common to sustain a Medical Referral Recommendation in the absence of a concurrent STS.

Due to the inherent variability associated with audiometric assessment, poor attention, resolved pathology, and or lack of interest, 50-80% of shift events prove non-persistent upon retest.

Lastly, do not put off a retest for reason of reported “head cold”, allergies, or sinus congestion as these conditions will rarely significantly affect a hearing test; if such conditions are in fact severe enough to affect a test, the test is living up to it’s intention to identify pathology.

If you are new to T K Group, or if you are simply interested in receiving email notification of new newsletter postings, please email robertwilliams@tkontheweb.com and type “Add to Newsletter” in the subject line.

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The Threshold is written by Robert Williams, A.uD.

Extended Work Shifts Increase TWA's

Employees not normally included in the Hearing Loss Prevention Program (HLPP) may move them into the actionable category requiring HLPP inclusion when work shifts are extended. Knowledge of increased work duration requires a solid reassessment of noise doses not only to determine actionable status, but (more importantly) to reduce risk of noise induced hearing loss and/or associated physiological ill effects of noise (i.e. lesser attention span, high blood pressure, fatigue, mental distress, etc.).

The OSHA noise standard stipulates a permissible exposure level (PEL) of 90 dB(A) for an eight hour workday with a 5 dB exchange rate. For every 5 dB increase in noise, the permissible exposure duration is reduced by half. Thus a 95 dB(A) exposure is permissible for 4 hours; 100 dB(A), 2 hours; 105 dB (A) 1 hour, etc.

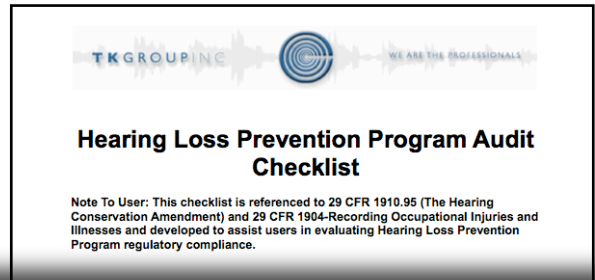
If an employee regularly works an eight hour work day and his/her noise exposure is 90 dB(A), their dose is 100%. A double work shift results in a noise dose of 200%. Do not make the mistake in thinking that as long as the employee is working in noise at or below 90 dB(A) that, his/her noise dose will not exceed 100%. For the employee who was not previously OSHA actionable, increasing his/her workday just two hours may change his/her OSHA status to actionable. A two-hour work extension of an 8-hour workday

increases noise dose by 25%. Consider the example of the employee that normally puts in an eight-hour workday measuring an 8-hour time weighted average of 84.2 dB. Referencing Table A-1 in the OSHA noise standard, a time weighted 84.2 dB exposure equals a noise dose of 45% situating this employee *just under OSHA's ACTION LEVEL of a 50% dose (85 dB TWA)*. However, by increasing this employee's daily exposure at 84.2 dB an extra two hours per day, a noise dose of 56.2% results; this makes this employee actionable. How did we arrive at 56.2% you ask? It is improper to add 25 percentage points to the employee's 45% dose to arrive at an increased noise dose of 70%. Rather, we simply calculate the value that is 25% of the employee's customary 8-hour noise exposure and add that value to the employee's normal percentage dose. In this case, 25% of 45 gives us 11.2 percentage points. Adding 11.2 percentage points to the normally incurred 45% noise dose results in an increased dose equal to 56.2%.

Year End Audit

At year's end or within the first two weeks of a new year, it is a good time to evaluate that you have fulfilled compliance in response to actionable events in your Hearing Loss Prevention Program. Arguably, the greatest challenge in maintaining an effective and compliant Hearing Loss Prevention Program is records management and documentation. An Audit Checklist developed by T K Group is freely available to all clients of T K Group by simply emailing Dr. Williams at robertwilliams@tkontheweb.com

If your year's end review does reveal "open and unresolved" compliance events, it is better to address those events late than never. If you find that a potentially Recordable event was not reviewed for Work Relatedness, you may still request a Work Relatedness Determination.



29 CFR 1910.95

1910.95(a)
Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table G-16 when measured on the A scale of a standard sound level meter at slow response. When noise levels are determined by octave band analysis, the equivalent A-weighted sound level may be determined as follows:

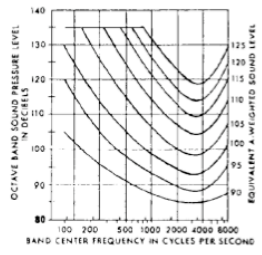


FIGURE G-9

1910.95(b)(1)
When employees are subjected to sound exceeding those listed in Table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

1. Have active engineering and administrative controls been considered and/or implemented at your facility to reduce unprotected noise exposure to acceptable levels?

No Yes

Comments:

2. Has your facility documented all administrative and/or engineering control attempts whether successful or not?

No Yes

Comments:

3. Have all employees at your facility been fitted with appropriately attenuating hearing protection if engineering and/or administrative controls have not reduced noise levels to listed tolerances?

No Yes

Comments:

1910.95(b)(2)
If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

TABLE G-16 - PERMISSIBLE NOISE EXPOSURES (1)

Duration per day, hours	Sound level, dBA slow response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
3/4	110
1/2	115

Footnote(1) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: C(1)/T(1) + C(2)/T(2) + C(n)/T(n) exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

Single Day Exposure To 85 dB 8 Hr. TWA Requires Inclusion To The HLPP

T K Group is often asked if “office” workers who have only occasional exposure to workplace noise at or above 85 dB (8 hour TWA) require inclusion to the Hearing Loss Prevention Program (HLPP).

In a 2004 Interpretation, OSHA affirmed that workers with even one exposure to 85 dB (8 hour TWA) in a year’s time fall under the noise regulation and thus must be included in the HLPP. If a worker goes an entire year without one single 85 dB exposure, that worker may be removed from the HLPP.

If such “occasionally exposed” workers sustain a 10 dB Standard Threshold Shift (STS), they must still receive all necessary and mandated follow-up actions associated with CFR 1910.95 (i.e. 21-day written notification of the shift event, supplemental Hearing Loss Prevention training, hearing protector check/refit, and mandatory use of hearing protection). Similarly, workers in this noise exposure classification require determination of

work relatedness if the 10 dB STS reaches a potentially Recordable level of loss as defined by CFR 1904.

While cost concerns confront all corporations these days, inclusion of all employees to a HLPP is beneficial on many levels.

Annual testing to non-noise exposed employees may identify non-noise related pathologies. Additionally, HLPP inclusion of non-noise exposed employees helps to reinforce the significance of the HLPP in the minds of those that are noise exposed.

Lastly, many non-noise exposed persons participate in noisy activities off the job and annual Hearing Loss Prevention Training certainly may prevent non-work related noise induced hearing loss.