

T K GROUP, INC.
NEWSLETTER
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The Importance of Submitting *Thorough* EQs For Work Relatedness Determinations

Because of CFR 1904 (Recording and Reporting of Occupational Illnesses and Injuries), T K Group offers Work Relatedness Determinations to address potentially OSHA Recordable hearing loss events. For a determination to be made, affected employees must complete T K Group's Extended Questionnaire (EQ for short).

Requested EQ information addresses an individual's aural case history—specifically his/her job related and off-the job noise exposures in addition to any ear-related medical conditions. In an effort to obtain the most accurate and complete EQ assessment, T K Group suggests that the EQ be completed via a “sit-down” interview between the employee and the site Hearing Loss Pre-

vention Program coordinator or associate. Human nature is such that respondents are more apt to provide more detailed information when interviewed than when left to complete the form on their own; “real world” time pressures also play a role in EQ completeness. An employee with an imminent work-related deadline is less likely to spend the optimal amount of time answering questions. Lastly, many employees might not know their assessed time weighted average (TWA). *TWA information is requested on the EQ form and this information is often not completed in determination requests, which may affect the reviewing audiologist's determination.* While knowledge of the TWA is not always significant to a determination, missing TWA information may tip

the scale between an occupational versus non-occupational determination outcome—depending on the presented audiometric configuration and reported off-the-job noise exposures.

Common questions received after receiving an occupationally related determination

After having received an occupational determination, T K Group is often contacted by the site Hearing Loss Prevention Program Coordinator for clarification. The following are polite, but forthright replies to common determination-related situations:

Question: “Why was Mr. Jones given an occupationally related determination when I know for a fact that

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Repealed Recordable/Confirmed 10 dB STS

T K Group receives many determination requests in such instances when a 10 dB STS is confirmed but the Recordable component is repealed. While this is a

rare circumstance, it does occur. Consider the following test comparisons:

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YEARS OF EXCELLENCE

T K Group, Inc.

Don't Forget the 8's!

29 CFR 1910.95 (Occupational Noise Exposure) mandates the following:

“Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz” (h)(1). Notably absent is the 8000 Hz test frequency. While OSHA does not mandate inclusion of 8000 Hz, T K Group will always test 8000 Hz on all mobile vans; we also strongly urge that all in-house and/or clinic tests include 8000 Hz-for

good reason. To the professional reviewer of audiometric data, knowledge of 8000 Hz data is often crucial in determining noise-induced versus non-noise induced etiology.

The “4000 Hz notch” is a watered down term to describe “suspect” noise-induced audiometric characteristics, however since noise-induced cochlear damage may also present loss at 3000 and 6000 Hz, the term “mid frequency notching” collectively describes noise-induced loss at 3000, 4000, and/or 6000 Hz. Typical noise-

induced hearing loss presents itself audiometrically by loss at 3000, 4000, and/or 6000 Hz followed by recovery (better hearing) at 8000 Hz. With this in mind, it is not uncommon to see notching in non-noise induced cases-a fact that underscores the value of a complete and accurate aural case history (Extended Questionnaire) when assessing loss etiology. While noise-induced hearing loss often initiates at 4000 or 6000 Hz and spreads downward to adjacent lower frequencies, it can initiate at 3000 Hz or even lower at 2000 Hz

depending on the intensity and/or spectral (frequency) properties of the noise source (s).

Many non-noise induced hearing loss patterns, such as those commonly seen with presbycusis (age-related loss), are identifiable by a “precipitous” or “ski slope” loss pattern in which the degree of loss is greater at 8000 Hz than that at preceding frequencies.

Consider the below audiogram examples, first without 8000 Hz and then with 8000 Hz:

500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
10	20	25	35	45	55	?

Is this loss pattern consistent with noise-induced etiology? Without 8000 Hz, this question is difficult to answer. Now consider the below audiogram with 8000 Hz information:

500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
10	20	25	35	45	55	25

With 8000 Hz information, a much clearer picture of potential noise-induced etiology is presented. Another important reason to always include 8000 Hz is to document historical loss trends in the event of future compensation litigation. Consider the following audiogram example, first without 8000 Hz and then with 8000 Hz.

500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
10	20	25	35	45	55	?
500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz	8000 Hz
10	20	25	35	45	55	75

With 8000 Hz information, this audiogram is most consistent with non-noise induced etiology.



Repealed Recordable/Confirmed 10 dB STS (continued From Page 1)

Date	Time	THRESHOLDS														10dB STS				RECORDABLE		MEDICAL REFERRAL		
		LEFT							RIGHT							Left*	Right*	Baseline		Left*	Right*	Ref	BL	
.5K	1K	2K	3K	4K	6K	8K	.5K	1K	2K	3K	4K	6K	8K	L	R			Left*	Right*					
05/02/07	00:00	20	20	15	30	20	25	15	20	15	10	10	25	25	15	C				R				
04/02/07	12:37	20	25	20	35	35	15	05	15	20	10	15	25	20	10	Y				Y				
04/14/06	15:45	05	10	15	15	15	10	05	10	10	05	05	20	10	10									
03/29/04	16:55	05	10	05	10	15	05	05	10	10	05	10	20	20	20			Y	Y					Y

Key: <blank>: No Change Y: new STS or Recordable C: Confirming R: Repealing F: Refused X: Rejected
 P: Persistent NP: Non-Persistent I: Improvement PI: Persistent Improvement

Medical Referral Key: Rep. = Repeat Condition

As you can see, the 10 dB STS did in fact confirm upon retest however the Recordable component repealed since the “25 dB or greater 2000, 3000, and 4000 Hz average” criteria was not satisfied.

When such cases come before the reviewing audiologist, the site contact is notified and informed that a determination was not needed.

While such cases are not Recordable to the OSHA 300 log form, do not forget that certain follow-up actions still apply.

Employees with a confirmed 10 dB STS must wear appropriately attenuating hearing protectors if they work 85 dB or greater of noise. Secondly, applicable employees must have their hearing protection rechecked/refitted for proper fit and attenuation and receive supplemental hearing loss prevention training.



FDA Issues Warning that Impotence Drugs May Induce Sudden Hearing Loss

The U.S. Food and Drug Administration recently issued a warning to users of popular impotence medications.

While there is yet no substantiated scientific evidence to confirm complaints, users of Viagra (Sildenafil Citrate), Cialis (Tadalafil), and Levitra (Vardenafil HCl)-to name a few-will be warned of their potential cochleotoxic effects.



ATTENTION!

In an effort that we provide this newsletter electronically as well as to inform you of immediate professional announcements, please email us your email address to: robertwilliams@tkontheweb.com

T K Group News is written by Dr. Robert Williams, Audiologist Director Audiology

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T K Group conducts periodic CAOHC Certification and Recertification courses. **Our next course is tentatively set for January 3rd, 4th, and 5th 2008.** If you wish to participate, please contact Beth Minnick at (815) 964-5445



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he shoots targets on his farm without hearing protection on a weekly basis and his TWA is 62 dB?"

The reviewing audiologist pulls up the determination, looks at the submitted EQ, and sees no TWA or off-the-job activities were reported):

Answer: When normal thresholds are presented at baseline, subsequent data indicates a loss pattern most consistent with noise-induced loss, no TWA is provided, and no off-the-job activities are reported, we must conclude with a reasonable degree of professional certainty that the loss was in fact occupationally related; pursuant to CFR 1904, a hearing loss is presumed work-related if no other potential non-work related influences are determined.

-When submitting an Extended Questionnaire, please make every effort to assure that all information fields and questions are completed to the best of the respondent's knowledge.

Question: "The respondent refuses to answer all or certain fields on the EQ; what can we do?"

Answer: "Please consult your corporate legal authority to review that scenario; however we do know that many corporations require "participation" (i.e. completing the EQ

and/or participating in other HLPP requirements) as a function of continuing employment with their corporation".

Question: "I received an occupationally related determination. I feel that he/she did not honestly report all off-the-job noise exposure activities. What can we do to reverse that determination?"

Answer: "Unfortunately, very little".

As reviewing professionals, we must return determinations based upon the set of data provided to us.

Reviewers cannot base determinations on "hearsay"; however, if newly discovered information that might influence a determination is uncovered, T K Group will review that information and issue a second opinion.



Risk of Noise-Induced Hearing Loss with Firearms Significant

Recreational use of firearms is ever popular. Estimates suggest that 60 million persons participate in recreational shooting activities. Most persons in this population only occasionally use firearms, however even the casual user is at risk of significant and permanent noise-induced hearing loss with just one unprotected exposure given the intensity of gunfire and its close approximation to the ear (s).

One unprotected exposure can inflict permanent and significant noise-induced hearing loss because sound pressure levels exceeding 150 dB are not uncommon. Unlike the slow and gradual effect of unprotected exposure to continuous noise, damage due to impulse noise can be immediate.

While unprotected use of firearms poses a general risk of noise-induced hearing loss, many factors, some controllable, some not, present greater risk of resulting cochlear damage. It is generally safe to say that the higher the bullet caliber, the greater the resulting sound pressure output. Many shooters adapt their weapons to reduce recoil (kickback) by adding muzzle brakes and/or ports to their gun barrel; such alterations result in sound energy being directed back toward the shooter, increasing noise level exposure/risk. Subtle environmental factors such as temperature and wind direction may increase or reduce risk. Firearms discharge in closed or confined spaces may increase risk depending on surrounding physical structures. For this reason, many indoor target ranges have specially engineered shooting stalls that redirect muzzle blasts away from the shooter and adjacent shooters.

Most hunters are hesitant to use conventional hearing protection (i.e. plugs/muffs) when hunting since they rely on listening skills to hear and/or track prey in their vicinity. There are, however, emerging technologies in the form of electronic hearing protection that may offer a viable alternative to wearing no protection at all. Target shooters, on the other hand, really have no (good) excuses not to wear hearing protection.

Regardless of the noise source or type of noise, the early warning signs of noise-induced hearing loss are the same. Tinnitus (ringing), TTS (Temporary Threshold Shift), and/or a feeling of "fullness" in the ear (s) following significant unprotected noise exposure are indicators that permanent noise-induced hearing is a real and potential eventuality.

References: 1. National Hearing Conservation Association; *Guide 7: Firearm Use and Hearing*; 2. *Dangerous Decibels*

