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**Noise-Induced Hearing Loss, On/After January 2, 1990**

## Policy

Hearing loss in workers occupationally exposed to hazardous noise is an occupational disease (under s.2(1) and s.15 of *the Workplace Safety and Insurance Act*) which is peculiar to and characteristic of a process, trade or occupation involving exposure to hazardous noise in Ontario.

## Guidelines

### Description of the condition

Noise-induced hearing loss (NIHL) is a permanent loss of hearing in both ears resulting from sensorineural (inner ear) damage due to prolonged, continuous, hazardous noise exposure.

### Entitlement

Workers with occupational NIHL that is sufficient to cause a hearing impairment may be entitled to benefits. Entitlement to health care and rehabilitation benefits begins with a hearing loss of 22.5 dB in each ear when the hearing loss in the 4 speech frequencies (500, 1000, 2000, and 3000 Hertz) are averaged.

The following is persuasive evidence of work-relatedness in claims for sensorineural hearing loss

- continuous exposure to 90 dB(A) of noise for 8 hours per day, for a minimum of 5 years, or the equivalent, and
- a pattern of hearing loss consistent with noise-induced sensorineural hearing loss.

A presbycusis (aging) factor of 0.5 dB is deducted from the measured hearing loss (averaged over the 500, 1000, 2000, and 3000 Hz frequencies) for every year the worker is over the age of 60 at the time of the audiogram. The hearing loss that remains after the presbycusis adjustment is then used to determine entitlement to benefits. Entitlement to health care and rehabilitation benefits is available when the adjusted hearing loss is at least 22.5 dB in each ear.

### Equivalencies

The minimum hazardous noise exposure of 90 dB(A) for 8 hours per day for 5 years has the following equivalencies (1):

84 dB(A) for 40 years	89 dB(A) for 7 years
85 dB(A) for 28 years	91 dB(A) for 3.5 years
86 dB(A) for 20 years	92 dB(A) for 2.5 years
87 dB(A) for 14 years	93 dB(A) for 1.8 years
88 dB(A) for 10 years	94 dB(A) for 1.25 years
84 dB(A) for 40 years	89 dB(A) for 7 years

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1. ISO 1999-1990. Acoustics - Determination of occupational noise exposure and estimation of noise-induced impairment. Internat. Standard ISO 1999. 2nd ed. Geneva, 1990.

NIHL does not normally develop in less than 1.25 years.

The calculation of equivalent daily hazardous noise exposures is based on a 5 dB doubling rule as follows:

Sound level in decibels	Duration - hrs. /24 hr. day
88	12
90	8
92	6
95	4
97	3
100	2
102	1.5
105	1
110	0.5
115	0.25

**Permanent impairment**

Permanent impairment from sensorineural hearing loss is determined using the rating schedule prescribed in section 18(1), O.Reg 175/98. This rating schedule is the American Medical Association *Guides to the Evaluation of Permanent Impairment*, 3rd edition (revised) (AMA Guides). Those claimants whose hearing loss is sufficient to result in a permanent impairment benefit as recognized by the AMA Guides (at or above 26.25/26.25 dB or 25/32.5 dB in the better/worse ear, respectively) are referred for a Non-Economic Loss (NEL) determination. Average hearing losses are never rounded for permanent impairment calculations using the AMA Guides. For more information see 18-05-03, Determining the Degree of Permanent Impairment.

**Non-compensable hearing loss**

**Presbycusis (aging) factor** - Hearing loss due to aging is a non-compensable hearing loss. If the worker's hearing loss is adjusted for presbycusis (age >60 years), the adjusted hearing loss is applied to the prescribed rating schedule. When the level of a pre-existing, non-compensable hearing loss is known, the percent of compensable permanent impairment equals the total percent permanent impairment minus the percent of the pre-existing, non-compensable permanent impairment.

**Out-of-province exposure** - Hearing loss attributable to out-of-province exposure is noncompensable. When there is out-of-province exposure, to determine the extent of the compensable permanent impairment the decision maker should

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- determine the extent of the total permanent impairment in accordance with the prescribed rating schedule
- determine the percent of the duration of hazardous noise exposure which occurred in Ontario and
- multiply the extent of the total permanent impairment by the percent of the duration of hazardous noise exposure which occurred in Ontario.

The NEL benefit is based on the extent of the compensable permanent impairment.

**Further hearing loss**

Workers with an accepted claim for NIHL who return to noise exposure with the same accident employer are entitled to a NEL redetermination for the additional hearing loss. For more information see 18-05-09, Redeterminations and Recalculations. When workers with an accepted NIHL claim return to occupational noise exposure with a new accident employer, a new claim file is established to determine entitlement for the additional hearing loss.

**Exceptions**

Since individual susceptibility to noise varies, if the evidence of noise exposure does not meet the above exposure criteria, claims will be adjudicated on the real merits and justice of the case, having regard to the nature of the occupation, the extent of the exposure, and any other factors peculiar to the individual case.

**Pre and Post 1990 Guidelines for adjudicating NIHL**

Decision Making Issue	Accident Date: The earlier of 1) the date of the claim, or 2) the date of documented evidence for the hearing loss	
	Before January 2, 1990	On or after January 2, 1990
<b>Entitlement to health care and rehabilitation benefits</b>	Entitlement provisions stated in 1988 NIHL policy apply.  A worker is entitled to health care and rehabilitation benefits when the minimum level of bilateral hearing loss is 25dB in each ear (readings as low as 22.5 dB are accepted as 25 dB).	A worker is entitled to health care and rehabilitation benefits when the minimum level of bilateral hearing loss is 25 dB in each ear (readings as low as 22.5 dB are accepted as 25 dB).
<b>Presbycusis factor for entitlement</b>	0.5 dB is deducted for each year a worker's age exceed 60 years (at the time of the audiological test).	0.5 dB is deducted for each year a worker's age exceeds 60 years (at the time of the audiological test). Entitlement to benefits is determined after the measured hearing loss in each

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		ear has been adjusted by a presbycusis factor.
<b>Percent Permanent Disability</b>	Evaluated according to the permanent disability rating schedule in 1988. (See 16-01-03, Occupational Noise-Induced Hearing Loss).	Not applicable.
<b>Determination of permanent impairment for a NEL benefit</b>	Not applicable.	Workers with a minimum bilateral hearing loss of 26.25/26.25 dB or 32.5/25 dB (when the hearing loss at 500, 1000, 2000, and 3000 Hz is averaged) are entitled to a NEL determination.
<b>Forwarding claims for NEL determinations</b>	Not applicable.	Only those claimants whose hearing loss is sufficient to result in a permanent impairment benefit as recognized by the AMA Guides (at or above 26.25/26.25 or 32.5/25 dB), should be forwarded for a NEL determination.
<b>Pre-existing conditions</b>	Provisions on non-compensable hearing loss in the 1988 policy apply. See 16-01-03, Occupational Noise-Induced Hearing Loss.	WSIB policy on pre-existing conditions applies, See 18-05-05, Effect of a Pre-existing Impairment. The AMA Guides are used to calculate compensable and non-compensable hearing impairment. When the <b>non-compensable</b> hearing loss occurs prior to January 2, 1990, the non-compensable hearing disability is calculated using the 1988 rating schedule. See 16-01-03, Occupational Noise Induced Hearing Loss.
<b>Use of a presbycusis factor for a NEL benefit</b>	Not applicable.	The presbycusis-adjusted hearing loss is used to determine the extent of compensable permanent impairment. Hearing losses are

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		not rounded for calculations using the AMA Guides.
<b>Loss of Earnings (LOE)</b>	Not applicable.	A worker who remains in the workforce but does not return to the pre-accident job and suffers a wage loss because of NIHL is eligible for LOE benefits if the NIHL claim is allowed and the age requirement (younger than 65 years) is met.
<b>Additional Deterioration of Hearing Loss</b>	If a worker returns to work and additional hearing loss occurs, the claim is reopened and treated as a recurrence. If it is ascertained that the deterioration was a result of employment, the additional benefit is calculated using the permanent disability rating schedule in the 1988 policy. See 16-01-03, Occupational Noise-Induced Hearing Loss.	Workers with an accepted claim for NIHL who return to noise exposure with the same accident employer are entitled to a NEL redetermination for any additional hearing loss. When workers with an accepted NIHL claim return to occupational noise exposure with a new accident employer, a new claim file is established to determine entitlement to additional hearing loss.

**Application date**

This policy applies to all claims with an accident date of January 2, 1990, or after. The accident date for NIHL claims is the earlier of either the date of the claim, or the date of documented evidence for the hearing loss.

**Document History**

This document replaces 16-01-04 dated October 12, 2004.

This document was previously published as:  
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**References**

**Legislative Authority**

*Workplace Safety and Insurance Act, 1997*, as amended  
Sections 2(1), 15(1), 15(2), 119(1)

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*O.Reg 175/89, section 18*

### **Minute History**

Board of Directors

#4, June 3, 1988, page 5238

#8(XIV), June 10, 2004, Page 6619

Administrative

#1, December 1, 1992, Page 155

### **Minute**

Administrative

#14, May 26, 2008, Page 461