

THE AUSTRALIAN SOCIETY OF OTOLARYNGOLOGY, HEAD AND NECK SURGERY VICTORIAN SECTION

GUIDELINES FOR THE ASSESSMENT OF IMPAIRMENT FROM COMPENSABLE HEARING LOSS FOR THE STATE OF VICTORIA (Revised 2025)

1. PREAMBLE

The assessment of and compensation for impairment from permanent loss of hearing is covered under the following legislation within Victoria: -
Accident Compensation Act 1985 and *Workplace Injury Rehabilitation and Compensation Act 2013* for work related matters.

The assessment of compensable hearing loss must comply with the relevant legislation and be undertaken in the Manner approved by the Minister.

The purpose of these guidelines is to assist hearing loss assessors in assessing compensable hearing loss and the resulting permanent impairment.

2. OVERVIEW.

The approved assessor must carry out a comprehensive medical otological consultation and examination, and take full responsibility for the accuracy of the audiometry and its medical interpretation.

It is also a requirement that both the assessor and the audiologist or audiological service providing the audiogram be independent and therefore not associated with the claimant's medical management, rehabilitation or legal management.

The hearing loss should be permanent and have stabilised.

The binaural loss of hearing is determined from the *Improved Procedure for Determining Percentage Loss of Hearing, NAL Report No. 118 January 1988*. The standard 1988 NAL Procedure uses from 0.5 to 4kHz and allows for the loss at 6 and 8 kHz with 4 kHz in the 4 kHz table.

The diminution of hearing is assessed as a binaural loss of hearing and is then converted to a Whole Person Impairment (WPI) in accordance with the formula within the above Acts.

The assessor, when requested, may give advice in the report to the referring party on any medical or surgical treatment that may be available. The final hearing impairment will then depend on the outcome of such treatment, if it is undertaken and the condition has stabilised.

3. THE MEDICAL ASSESSMENT

This should include the history of the cause, management and subsequent course of the hearing loss. Otological and other ENT problems, general health, medications, past medical history and family history are also important. Where relevant a detailed employment history should be taken.

With a possible noise induced hearing loss the assessor should clarify the level and duration of noise exposure, the work environment and the source of the noise and its effect on communication in the workplace. The use of hearing protection should be evaluated. Other pathologic ear disorders and non-occupational noise exposure must be considered. Previous audiograms and relevant noise surveys should be evaluated. A pre-employment audiogram may indicate a pre-existing loss.

A specialist ENT examination, including tuning fork tests should be carried out.

4. THE AUDIOMETRICAL ASSESSMENT

The audiometrical assessment must as a minimum include air conduction at 0.25, 0.5, 1, 1.5, 2, 3, 4, 6 & 8 kHz and bone conduction at 0.5, 1, 1.5, 2, 3 & 4 kHz for the proper evaluation of the hearing loss and the determination of the impairment. It must be rigorously performed, with the test-retest technique, to ensure its accuracy. There must be an interval of no less than 16 hours between the last noise exposure and the audiogram to exclude a temporary threshold shift. The time and type of the claimant's last noise exposure should be recorded.

Additional testing should include impedance and speech discrimination audiometry, except where the latter is precluded by language or related issues or where the assessor considers that one or both of these are unnecessary for the impairment evaluation or treatment recommendations.

If there is uncertainty as to the accuracy of this pure tone audiogram, an air and bone Cortical Evoked Response Audiogram (CERA) plus a repeat pure tone audiogram is indicated. These should include as a minimum: - 0.5, 1, 1.5, 2, 3 & 4 kHz.

A copy of the audiogram(s) should accompany the report with the source clearly identified.

5. INTERPRETATION AND PREPARATION OF THE MEDICAL OPINION

a. Thresholds to be used

The lowest (least hearing loss) reliable thresholds obtained (including CERA) should be used as the basis for compensation.

b. Noise induced hearing loss. (NIHL)

Noise induced hearing loss (NIHL) is caused by prolonged exposure to loud noise and produces a characteristic bilateral sensorineural (S/N) loss pattern on pure tone audiometry. It is slowly progressive and ceases when the noise exposure stops. The early loss and the fastest rate of deterioration are at 3, 4 & 6 kHz. As the noise induced loss becomes more severe 2 kHz can be involved and after a period of 30 years of exposure, 1500 and even 1000Hz to a small degree as well.

Therefore the amount of loss increases as the frequency rises with a down slope to a maximum at one or more of 3, 4 and sometimes 6 kHz and improves at 8kHz although this can also deteriorate with increasing exposure. 6kHz is variable, sometimes equal or worse than 4kHz, sometimes on an upslope to 8kHz. The characteristic loss therefore is a reasonably symmetrical bilateral V or U shaped S/N loss maximal at 3-6kHz, with the greatest loss often being at 4kHz.

The contribution from various employers and non-occupational noise can be estimated, if required, from serial audiograms or in the absence of these from duration of exposure. It is assumed that the NIHL occurs on an equally cumulative basis over the total period of noise exposure. Occasional non-occupational exposure can be disregarded unless there is an asymmetry, which can be attributed to a predominately one-sided exposure such as sporting shooting.

The maximum loss that can occur with a NIHL at any frequency is 70dB. This is further discussed under Presbycusis (see 6 a.).

The NIHL pattern of hearing loss can also result from pathology other than noise exposure. The diagnosis therefore cannot be made just from the shape of the audiogram.

c. Other causes of compensable hearing loss

These include acute acoustic trauma (effect of a sudden extremely loud noise), blast and other ear trauma, including inner ear fistula, head injury, therapeutic procedures, ototoxic chemicals and infections.

The hearing loss seen in these various conditions may not be purely sensorineural but may be conductive or mixed (combined conductive and sensorineural), depending on the cause. Unlike NIHL there is no characteristic pattern of the sensorineural loss. All frequencies can be involved and total hearing loss can occur. The hearing loss associated with acute acoustic trauma and the lesser levels of head injury (concussion) are often similar to NIHL, but the maximum loss can be at lower frequencies.

6. SPECIAL CONSIDERATIONS

In many cases allowance will need to be made for non-compensable component(s) of the hearing loss, which may include:

a. Presbycusis

The *1988 NAL Procedure for Determining Percentage Loss of Hearing* provides presbycusis correction tables. The International Standard ISO 1999 states that noise induced permanent threshold shift and the hearing loss caused by the aging process add in dB and this is supported in the literature. This is also generally applicable to other types of compensable bilateral sensorineural hearing loss, as the age related loss would be expected to have been present regardless of other pathology.

It is therefore recommended that a deduction for presbycusis be used when assessing all cases of compensable bilateral sensorineural hearing loss unless there is evidence that the expected deterioration from aging has not occurred or if there is a total hearing loss.

In cases where the combined effect of a NIHL and presbycusis exceeds 70dB at any of the compensable frequencies (see 5 b.), the presbycusis component may contribute to the excess over 70dB. This can be allowed for by either disregarding the 70 dB limit if the presbycusis correction allows for the excess or by applying the 70dB limit and not allowing for presbycusis.

This is done by first calculating the total loss over the compensable frequencies and then subtracting the presbycusis correction to get a potential compensable loss. Secondly calculate the loss over the compensable frequencies, limiting the maximum loss at any frequency to 70dB.

Take the lesser of these 2 amounts as the compensable hearing loss. The second method allows for cases where the excess over 70dB is greater than that allowed for by presbycusis.

b. Unilateral compensable hearing loss

In compensable cases where only one ear is affected and the other ear is either normal or has a non-compensable loss: -

- (a) Use the NAL binaural tables to calculate the total percentage hearing loss.
- (b) Calculate the non-compensable percentage hearing loss by allowing a nil loss at each frequency in the compensable ear. (Regard the compensable ear as normal for this calculation).
- (c) Subtract the non-compensable percentage hearing loss component from the total loss to obtain the compensable percentage hearing loss.

An exception to this is when NIHL or another compensable loss, which would have affected both ears, develops in one ear when there is a purely constitutional loss in the other ear, which is so severe that the added compensable loss could not make it worse (e.g. a unilateral congenital or a permanent profound loss of viral origin). In such a case, calculate the compensable loss using the same thresholds of the compensable ear for both ears.

If there is a pre-existing constitutional loss affecting both ears and a compensable loss has occurred in one ear, the compensable ear can be assumed to have the same non-compensable component as the non-compensable ear.

c. Combined NIHL and constitutional sensorineural loss

In audiograms where the low frequency component is greater than that consistent with typical NIHL, it must be considered whether the constitutional disorder has overridden any NIHL component.

In other words, would the hearing loss have been the same whether or not there had been any noise exposure? Earlier audiograms may be helpful if they are available.

In cases where there is a definite down slope in the audiogram and a sufficient history of noise exposure to suggest that a component of the loss is noise induced, use either 2, 3 and 4 kHz or 3 and 4 kHz depending on the configuration of the graph to determine the compensable component

In general use 2, 3 & 4 kHz. However in cases where 2 kHz is similar to 3 & 4, and 1500 Hz is also well down, it is likely that the non-compensable factor is substantially affecting frequencies up to 2 kHz. Only 3 & 4 kHz should then be used for compensation purposes.

In cases where one ear has a typical NIHL pattern, it should be used as the index for compensation for both ears where there is an additional non compensable component in the other ear or the asymmetry at any of 2, 3 and 4 kHz exceeds 20 dB, unless it is definite that one ear is much more exposed than the other, such as in occupational firearm use.

Completely flat, up sloping and mid frequency ("cookie bite") losses are inconsistent with NIHL.

d. Compensable Sensorineural Loss with a Non-Compensable Conductive Loss

Use the bone conduction thresholds to determine the compensable loss.

7. OTHER MATTERS

a. Tinnitus

Refer to the Ministerial Manner for guidance.

b. Acoustic shock syndrome (injury)

There is currently no evidence of objective or measurable otological or neurological pathology associated with this syndrome. It is to be approached as a psychological response in a person who is affected in this way by noise, which is usually sudden and loud. Any associated hearing loss can be assessed as described in the relevant sections above.

1. SOURCE MATERIALS

Approval of the Manner for Determining the Percentage Diminution of Hearing under Sections 91(4), 98(2AB) and 98E(3) of the Accident Compensation Act 1985. Victorian Government Legislation.

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