

Revocation and Determination

of

Statement of Principles concerning

SENSORINEURAL HEARING LOSS

ICD-10-AM CODES: H90.3, H90.4, H90.5

Veterans' Entitlements Act 1986

1. The Repatriation Medical Authority under subsection **196B(2)** of the *Veterans' Entitlements Act 1986* (the Act):
 - (a) revokes Instrument No.45 of 1996 and Instrument No.1 of 1998 ;
and
 - (b) determines in their place the following Statement of Principles.

Kind of injury, disease or death

2. (a) This Statement of Principles is about **sensorineural hearing loss** and **death from sensorineural hearing loss**.
 - (b) For the purposes of this Statement of Principles, “**sensorineural hearing loss**” means a permanent hearing threshold shift of 25 decibels (dB) or more, at 500, 1000, 1500, 2000, 3000 or 4000 hertz (Hz) due to a defect in the cochlea or the auditory nerve, attracting ICD-10-AM code H90.3, H90.4 or H90.5, but excluding congenital deafness.

Basis for determining the factors

3. The Repatriation Medical Authority is of the view that there is sound medical-scientific evidence that indicates that **sensorineural hearing loss** and **death from sensorineural hearing loss** can be related to relevant service rendered by veterans, members of Peacekeeping Forces, or members of the Forces.

Factors that must be related to service

4. Subject to clause 6, at least one of the factors set out in clause 5 must be related to any relevant service rendered by the person.

Factors

5. The factors that must as a minimum exist before it can be said that a reasonable hypothesis has been raised connecting **sensorineural hearing loss** or **death from sensorineural hearing loss** with the circumstances of a person's relevant service are:

- (a) being exposed to an impulsive noise of at least 130 dBA without adequate ear protection before the clinical onset of sensorineural hearing loss; or
- (b) being exposed to noise of at least 85 dBA as an 8-hour time-weighted average (TWA) with a 3-dB exchange rate without adequate ear protection for a cumulative period of at least 180 days before the clinical onset of sensorineural hearing loss; or
- (c) undergoing a course of treatment with an ototoxic drug from the specified list within the year immediately before the clinical onset of sensorineural hearing loss; or
- (d) undergoing a course of salicylate or quinine derivatives, for a condition for which the drug cannot be ceased or substituted, at the time of the clinical onset of sensorineural hearing loss; or
- (e) suffering from suppurative labyrinthitis of the affected ear within the 30 days immediately before the clinical onset of sensorineural hearing loss; or
- (f) suffering from chronic suppurative otitis media on the affected side before the clinical onset of sensorineural hearing loss; or
- (g) suffering from Meniere's disease at the time of the clinical onset of sensorineural hearing loss; or
- (h) suffering from a systemic immune mediated disorder at the time of the clinical onset of sensorineural hearing loss; or
- (j) suffering from leprosy with audiovestibular involvement of the affected ear before the clinical onset of sensorineural hearing loss; or

- (k) suffering from an acute vascular lesion involving the arteries supplying the cochlea of the affected ear at the time of the clinical onset of sensorineural hearing loss; or
- (m) suffering from a hyperviscosity syndrome within the 30 days immediately before the clinical onset of sensorineural hearing loss; or
- (n) suffering from an acute viral infection from the specified list of viruses within the 30 days immediately before the clinical onset of sensorineural hearing loss; or
- (o) suffering from bacterial meningitis before the clinical onset of sensorineural hearing loss; or
- (p) suffering from neurosyphilis before the clinical onset of sensorineural hearing loss; or
- (q) suffering from tuberculosis involving the temporal bone on the affected side before the clinical onset of sensorineural hearing loss; or
- (r) suffering from Paget's disease of the skull at the time of the clinical onset of sensorineural hearing loss; or
- (s) suffering a head trauma causing:
 - (i) ruptured ear drum of the affected ear,
 - (ii) a perilymph fistula of the affected ear,
 - (iii) fracture of the temporal bone of the affected side, or
 - (iv) concussionwithin the five years immediately before the clinical onset of sensorineural hearing loss; or
- (t) suffering at least one episode of aural barotrauma within the 30 days immediately before the clinical onset of sensorineural hearing loss; or
- (u) suffering from a neoplasm affecting the auditory apparatus on the affected side at the time of the clinical onset of sensorineural hearing loss; or
- (v) undergoing a course of therapeutic radiation to the head or neck region within the 18 months immediately before the clinical onset of sensorineural hearing loss; or

- (w) undergoing surgery to the middle ear, inner ear or posterior cranial fossa on the affected side before the clinical onset of sensorineural hearing loss; or
- (x) being exposed to an impulsive noise of at least 130 dBA without adequate ear protection before the clinical worsening of sensorineural hearing loss; or
- (y) being exposed to noise of at least 85 dBA as an 8-hr time-weighted average (TWA) with a 3-dB exchange rate without adequate ear protection for a cumulative period of at least 180 days before the clinical worsening of sensorineural hearing loss; or
- (z) undergoing a course of treatment with an ototoxic drug from the specified list within the year immediately before the clinical worsening of sensorineural hearing loss; or
- (za) undergoing a course of salicylate or quinine derivatives, for a condition for which the drug cannot be ceased or substituted, at the time of the clinical worsening of sensorineural hearing loss; or
- (zb) suffering from suppurative labyrinthitis of the affected ear within the 30 days immediately before the clinical worsening of sensorineural hearing loss; or
- (zc) suffering from chronic suppurative otitis media on the affected side before the clinical worsening of sensorineural hearing loss; or
- (zd) suffering from Meniere's disease at the time of the clinical worsening of sensorineural hearing loss; or
- (ze) suffering from a systemic immune mediated disorder at the time of the clinical worsening of sensorineural hearing loss; or
- (zf) suffering from leprosy with audiovestibular involvement of the affected ear before the clinical onset of sensorineural hearing loss; or
- (zg) suffering from an acute vascular lesion involving the arteries supplying the cochlea of the affected ear at the time of the clinical worsening of sensorineural hearing loss; or

- (zh) suffering from a hyperviscosity syndrome within the 30 days immediately before the clinical worsening of sensorineural hearing loss; or
- (zj) suffering from an acute viral infection from the specified list of viruses within the 30 days immediately before the clinical worsening of sensorineural hearing loss; or
- (zk) suffering from bacterial meningitis before the clinical worsening of sensorineural hearing loss; or
- (zm) suffering from neurosyphilis before the clinical worsening of sensorineural hearing loss; or
- (zn) suffering from tuberculosis involving the temporal bone on the affected side before the clinical worsening of sensorineural hearing loss; or
- (zo) suffering from Paget's disease of the skull at the time of the clinical worsening of sensorineural hearing loss; or
- (zp) suffering a head trauma causing:
 - (i) ruptured ear drum of the affected ear,
 - (ii) a perilymph fistula of the affected ear,
 - (iii) fracture of the temporal bone of the affected side, or
 - (iv) concussionwithin the five years immediately before the clinical worsening of sensorineural hearing loss; or
- (zq) suffering at least one episode of aural barotrauma within the 30 days immediately before the clinical worsening of sensorineural hearing loss; or
- (zr) suffering from a neoplasm affecting the auditory apparatus on the affected side at the time of the clinical worsening of sensorineural hearing loss; or
- (zs) undergoing a course of therapeutic radiation to the head or neck region within the 18 months immediately before the clinical worsening of sensorineural hearing loss; or
- (zt) undergoing surgery to the middle ear, inner ear or posterior cranial fossa on the affected side before the clinical worsening of sensorineural hearing loss; or

- (zu) inability to obtain appropriate clinical management for sensorineural hearing loss.

Factors that apply only to material contribution or aggravation

6. Paragraphs **5(x) to 5(zu)** apply only to material contribution to, or aggravation of, sensorineural hearing loss where the person's sensorineural hearing loss was suffered or contracted before or during (but not arising out of) the person's relevant service; paragraph 8(1)(e), 9(1)(e), 70(5)(d) or 70(5A)(d) of the Act refers.

Inclusion of Statements of Principles

7. In this Statement of Principles if a relevant factor applies and that factor includes an injury or disease in respect of which there is a Statement of Principles then the factors in that last mentioned Statement of Principles apply in accordance with the terms of that Statement of Principles.

Other definitions

8. For the purposes of this Statement of Principles:

“a course of therapeutic radiation” means one or more fractions (treatment portions) of ionising radiation administered with the aim of achieving palliation or cure with gamma rays, x-rays, alpha particles or beta particles;

“adequate ear protection” means a device which plugs the outer ear canal or which covers the outside of the ear so as to protect the wearer from harmful noise;

“an ototoxic drug from the specified list” means one of the following:

- (a) α -difluoromethylornithine;
- (b) 6-amino nicotinamide;
- (c) Amikacin;
- (d) Bumetanide;
- (e) Cisplatin;
- (f) Erythromycin;
- (g) Ethacrynic acid;
- (h) Frusemide;
- (i) Gentamicin;
- (j) Kanamycin;
- (k) Misonidazole;
- (l) Neomycin;
- (m) Netilmicin;
- (n) Nitrogen Mustard;

- (o) Streptomycin;
- (p) Tobramycin;
- (q) Vancomycin;
- (r) Vinblastine;
- (s) Vincristine; or
- (t) Viomycin;

“aural barotrauma” means injury to the ear arising from the difference between atmospheric and intratympanic pressure;

“bacterial meningitis” means inflammation of the lining of the brain and spinal cord caused by bacteria;

“chronic suppurative otitis media” means a recurrent or continuous infective disorder of the middle ear characterised by perforation of the tympanic membrane, aural discharge and hearing loss;

“death from sensorineural hearing loss” in relation to a person includes death from a terminal event or condition that was contributed to by the person’s sensorineural hearing loss;

“hyperviscosity syndrome” means a disorder causing an increased viscosity of the blood;

“ICD-10-AM code” means a number assigned to a particular kind of injury or disease in The International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian Modification (ICD-10-AM), Second Edition, effective date of 1 July 2000, copyrighted by the National Centre for Classification in Health, Sydney, NSW, and having ISBN 1 86487 271 3;

“impulsive noise” means noise which is characterised by a sharp rise and a rapid decay in sound levels and is less than one second in duration;

“Meniere’s disease” means a clinical condition characterised by fluctuating hearing loss, tinnitus, a sense of fullness in the involved ear associated with recurring attacks of rotational vertigo of sudden onset, often associated with nausea and vomiting;

“neoplasm affecting the auditory apparatus” means a primary or secondary neoplasm of the auditory nerve, inner ear, temporal bone, cerebellopontine angle or posterior cranial fossa;

“Paget’s disease of the skull” (otherwise known as osteitis deformans) means a disease of bone marked by repeated episodes of bone resorption

and new bone formation resulting in weakened deformed bones of increased mass of the skull;

“perilymph fistula” means a leakage of perilymph fluid into the middle ear space from the inner ear due to the rupture of the membrane between the middle and inner ear at the oval or round window;

“relevant service” means:

- (a) operational service; or
- (b) peacekeeping service; or
- (c) hazardous service;

“specified list of viruses” means:

- (a) mumps virus;
- (b) measles virus;
- (c) rubella virus;
- (d) pertussis virus; or
- (e) varicella-zoster virus;

“suppurative labyrinthitis” means inflammation of the labyrinth characterised by the presence of pus;

“systemic immune mediated disorder” means one of the following:

- (a) Behçet’s syndrome;
- (b) Cogan’s syndrome;
- (c) periarteritis nodosa;
- (d) systemic lupus erythematosus; or
- (e) Wegener’s granulomatosis;

“terminal event” means the proximate or ultimate cause of death and includes:

- (a) pneumonia;
- (b) respiratory failure;
- (c) cardiac arrest;
- (d) circulatory failure; or
- (e) cessation of brain function;

“tuberculosis involving the temporal bone” means infection of the temporal bone with *Mycobacterium tuberculosis*;

“time-weighted average (TWA) with 3-dB exchange rate” means the time-weighted average noise exposure level calculated according to the following formulae and shown in the table:

$$\text{TWA} = 10.0 \times \text{Log}(D/100) + 85$$

where D = daily dose; and

$$D = [C_1/T_1 + C_2/T_2 + \dots + C_n/T_n] \times 100$$

where C_n = total time of exposure at a specified noise level,

T_n = exposure duration for which noise at this level becomes hazardous

Table of noise exposure levels and durations based on 3-dBA exchange rate

Exposure Level, <i>L</i> (dBA)	Duration, <i>T</i>			Exposure Level, <i>L</i> (dBA)	Duration, <i>T</i>		
	Hours	Minutes	Seconds		Hours	Minutes	Seconds
80	25	24	—	106	—	3	45
81	20	10	—	107	—	2	59
82	16	—	—	108	—	2	22
83	12	42	—	109	—	1	53
84	10	5	—	110	—	1	29
85	8	—	—	111	—	1	11
86	6	21	—	112	—	—	56
87	5	2	—	113	—	—	45
88	4	—	—	114	—	—	35
89	3	10	—	115	—	—	28
90	2	31	—	116	—	—	22
91	2	—	—	117	—	—	18
92	1	35	—	118	—	—	14
93	1	16	—	119	—	—	11
94	1	—	—	120	—	—	9
95	—	47	37	121	—	—	7
96	—	37	48	122	—	—	6
97	—	30	—	123	—	—	4
98	—	23	49	124	—	—	3
99	—	18	59	125	—	—	3
100	—	15	—	126	—	—	2
101	—	11	54	127	—	—	1
102	—	9	27	128	—	—	1
103	—	7	30	129	—	—	1
104	—	5	57	130-140	—	—	<1
105	—	4	43	—	—	—	—

Source: National Institute of Occupational Safety and Health 1998 Guidelines
Publication No. 98-126

Application

9. This Instrument applies to all matters to which section 120A of the Act applies.

Dated this *Twenty-second* day of *February* 2001

The Common Seal of the)
Repatriation Medical Authority)
was affixed to this instrument)
in the presence of:)

KEN DONALD
CHAIRMAN