



Australian Government
Repatriation Medical Authority

Statement of Principles
concerning
TINNITUS
(Balance of Probabilities)
(No. 85 of 2020)

The Repatriation Medical Authority determines the following Statement of Principles under subsection 196B(3) of the *Veterans' Entitlements Act 1986*.

Dated 30 October 2020

The Common Seal of the
Repatriation Medical Authority
was affixed to this instrument
at the direction of:

A handwritten signature in black ink, appearing to read 'N. Saunders'.

Professor Nicholas Saunders AO
Chairperson

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1 Name

This is the Statement of Principles concerning *tinnitus (Balance of Probabilities)* (No. 85 of 2020).

2 Commencement

This instrument commences on 30 November 2020.

3 Authority

This instrument is made under subsection 196B(3) of the *Veterans' Entitlements Act 1986*.

4 Repeal

The Statement of Principles concerning tinnitus No. 34 of 2012 (Federal Register of Legislation No. F2012L00944) made under subsections 196B(3) and (8) of the VEA is repealed.

5 Application

This instrument applies to a claim to which section 120B of the VEA or section 339 of the *Military Rehabilitation and Compensation Act 2004* applies.

6 Definitions

The terms defined in the Schedule 1 - Dictionary have the meaning given when used in this instrument.

7 Kind of injury, disease or death to which this Statement of Principles relates

(1) This Statement of Principles is about tinnitus and death from tinnitus.

Meaning of tinnitus

(2) For the purposes of this Statement of Principles, tinnitus:

(a) means intermittent or constant perception of sound:

- (i) in one or both ears; or
- (ii) in or around the head;

occurring without an external source of sound; and

(b) must have persisted for at least three consecutive months.

Note: The sounds of tinnitus include buzzing, hissing, ringing, whistling and clicking.

(3) While tinnitus attracts ICD-10-AM code H93.1, in applying this Statement of Principles the meaning of tinnitus is that given in subsection (2).

- (4) For subsection (3), a reference to an ICD-10-AM code is a reference to the code assigned to a particular kind of injury or disease in *The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)*, Tenth Edition, effective date of 1 July 2017, copyrighted by the Independent Hospital Pricing Authority, ISBN 978-1-76007-296-4.

Death from tinnitus

- (5) For the purposes of this Statement of Principles, tinnitus, in relation to a person, includes death from a terminal event or condition that was contributed to by the person's tinnitus.

Note: *terminal event* is defined in the Schedule 1 - Dictionary.

8 Basis for determining the factors

On the sound medical-scientific evidence available, the Repatriation Medical Authority is of the view that it is more probable than not that tinnitus and death from tinnitus can be related to relevant service rendered by veterans or members of the Forces under the VEA, or members under the MRCA.

Note: *MRCA*, *relevant service* and *VEA* are defined in the Schedule 1 - Dictionary.

9 Factors that must exist

At least one of the following factors must exist before it can be said that, on the balance of probabilities, tinnitus or death from tinnitus is connected with the circumstances of a person's relevant service:

- (1) being exposed to a peak sound pressure level at the tympanic membrane of at least 140 dB(C) before the clinical onset of tinnitus;

Note: *dB(C)* is defined in the Schedule 1 - Dictionary.

- (2) being exposed to a sound pressure level at the tympanic membrane of at least 85 dB(A) as an 8-hour time-weighted average (TWA) with a 3-dB exchange rate for a cumulative period of at least six months before the clinical onset of tinnitus;

Note: *dB(A)* and *time-weighted average (TWA) with a 3-dB exchange rate* are defined in the Schedule 1 - Dictionary.

- (3) having blunt trauma, penetrating trauma or surgery to an auditory structure or central auditory neural pathway, within the five years before the clinical onset of tinnitus;

Note 1: Examples of trauma include temporal bone fracture and basilar skull fracture.

Note 2: *auditory structure* is defined in the Schedule 1 - Dictionary.

- (4) having sensorineural hearing loss or conductive hearing loss at the time of the clinical onset of tinnitus;

- (5) taking a drug from the specified list of drugs within the 30 days before the clinical onset of tinnitus;

Note: *specified list of drugs* is defined in the Schedule 1 - Dictionary.

- (6) taking a drug which is associated in the individual with:
- (a) the development of tinnitus within 30 days of commencing drug therapy; and
 - (b) a decrease in tinnitus within days or weeks of discontinuing or tapering drug therapy; and

where treatment with the drug continued for at least the three days before the clinical onset of tinnitus;

- (7) having inner ear exposure to a chemical agent from the specified list of chemical agents within the 30 days before the clinical onset of tinnitus;

Note 1: Inner ear exposure to a chemical agent will only occur in the presence of a defect in the tympanic membrane.

Note 2: *specified list of chemical agents* is defined in the Schedule 1 - Dictionary.

- (8) having a vascular, muscular or other anatomical source of sound that can be transmitted to the affected ear at the time of the clinical onset of tinnitus;

Note: *vascular, muscular or other anatomical source of sound* is defined in the Schedule 1 - Dictionary.

- (9) having a reduced supply of blood to an auditory structure of the affected ear at the time of the clinical onset of tinnitus;

Note 1: Examples of causes of a reduced supply of blood to an auditory structure include coagulation disorders, embolism, thrombosis, haemorrhage or vasospasm of the vertebro-basilar circulation, hyperviscosity, vasculitis, and intralabyrinthine haemorrhage or infarction.

Note 2: *auditory structure* is defined in the Schedule 1 - Dictionary.

- (10) having a bone disease from the specified list of bone diseases, affecting the petrous temporal bone or middle ear ossicles of the affected side, at the time of the clinical onset of tinnitus;

Note: *specified list of bone diseases* is defined in the Schedule 1 - Dictionary.

- (11) having an autoimmune disease at the time of the clinical onset of tinnitus;

- (12) having multiple sclerosis at the time of the clinical onset of tinnitus;

- (13) having a benign or malignant neoplasm involving the petrous temporal bone, an auditory structure or central auditory neural pathway of the affected ear at the time of the clinical onset of tinnitus;

Note: *auditory structure* is defined in the Schedule 1 - Dictionary.

- (14) having a haematological disease from the specified list of haematological diseases at the time of the clinical onset of tinnitus;
 Note: *specified list of haematological diseases* is defined in the Schedule 1 - Dictionary.
- (15) having a cerebrovascular accident within the 30 days before the clinical onset of tinnitus;
- (16) being exposed to an explosive blast within the 30 days before the clinical onset of tinnitus;
- (17) being struck by lightning within the 30 days before the clinical onset of tinnitus;
- (18) having temporomandibular disorder at the time of the clinical onset of tinnitus;
- (19) having migraine with brainstem aura (basilar migraine) before the clinical onset of tinnitus;
- (20) having Meniere's disease or delayed endolymphatic hydrops at the time of the clinical onset of tinnitus;
- (21) having:
- (a) an episode of otitic barotrauma involving the affected ear; or
 - (b) cerebral arterial gas embolism; or
 - (c) decompression sickness;
- within the 30 days before the clinical onset of tinnitus;
 Note: Otitic barotrauma is also known as otic barotrauma.
- (22) having acoustic shock at the time of the clinical onset of tinnitus;
 Note: *acoustic shock* is defined in the Schedule 1 - Dictionary.
- (23) having a bacterial infection from the specified list of bacterial infections within the 30 days before the clinical onset of tinnitus;
 Note: *specified list of bacterial infections* is defined in the Schedule 1 - Dictionary.
- (24) having a viral infection from the specified list of viral infections within the 30 days before the clinical onset of tinnitus;
 Note: *specified list of viral infections* is defined in the Schedule 1 - Dictionary.
- (25) having meningitis or encephalitis within the one year before the clinical onset of tinnitus;
- (26) having neurosyphilis before the clinical onset of tinnitus;
- (27) having tuberculosis involving the nasopharynx, meninges, temporal bone, middle ear or inner ear of the affected side before the clinical onset of tinnitus;

- (28) having typhoid fever within the 30 days before the clinical onset of tinnitus;
- (29) undergoing a course of therapeutic radiation for cancer, where the auditory apparatus was in the field of radiation, before the clinical onset of tinnitus;
- (30) having:
- (a) a cobalt-containing metal-on-metal hip prosthesis; or
 - (b) a serum cobalt concentration of at least 200 micrograms per litre;
- for at least the four weeks before the clinical onset of tinnitus;
- (31) having vitamin B1 (thiamine) or vitamin B12 (cobalamin) deficiency at the time of the clinical onset of tinnitus;
- (32) having carbon monoxide poisoning within the 48 hours before the clinical onset of tinnitus;
- (33) being exposed to a peak sound pressure level at the tympanic membrane of at least 140 dB(C) before the clinical worsening of tinnitus;
- Note: *dB(C)* is defined in the Schedule 1 - Dictionary.
- (34) being exposed to a sound pressure level at the tympanic membrane of at least 85 dB(A) as an 8-hour time-weighted average (TWA) with a 3-dB exchange rate for a cumulative period of at least six months before the clinical worsening of tinnitus;
- Note: *dB(A)* and *time-weighted average (TWA) with a 3-dB exchange rate* are defined in the Schedule 1 - Dictionary.
- (35) having blunt trauma, penetrating trauma or surgery to an auditory structure or central auditory neural pathway, within the five years before the clinical worsening of tinnitus;
- Note 1: Examples of trauma include temporal bone fracture and basilar skull fracture.
- Note 2: *auditory structure* is defined in the Schedule 1 - Dictionary.
- (36) having sensorineural hearing loss or conductive hearing loss at the time of the clinical worsening of tinnitus;
- (37) taking a drug from the specified list of drugs within the 30 days before the clinical worsening of tinnitus;
- Note: *specified list of drugs* is defined in the Schedule 1 - Dictionary.
- (38) having inner ear exposure to a chemical agent from the specified list of chemical agents within the 30 days before the clinical worsening of tinnitus;
- Note 1: Inner ear exposure to a chemical agent will only occur in the presence of a defect in the tympanic membrane.

Note 2: *specified list of chemical agents* is defined in the Schedule 1 - Dictionary.

- (39) having a vascular, muscular or other anatomical source of sound that can be transmitted to the affected ear at the time of the clinical worsening of tinnitus;

Note: *vascular, muscular or other anatomical source of sound* is defined in the Schedule 1 - Dictionary.

- (40) having a reduced supply of blood to an auditory structure of the affected ear at the time of the clinical worsening of tinnitus;

Note 1: Examples of causes of a reduced supply of blood to an auditory structure include coagulation disorders, embolism, thrombosis, haemorrhage or vasospasm of the vertebro-basilar circulation, hyperviscosity, vasculitis, and intralabyrinthine haemorrhage or infarction.

Note 2: *auditory structure* is defined in the Schedule 1 - Dictionary.

- (41) having a bone disease from the specified list of bone diseases, affecting the petrous temporal bone or middle ear ossicles of the affected side, at the time of the clinical worsening of tinnitus;

Note: *specified list of bone diseases* is defined in the Schedule 1 - Dictionary.

- (42) having an autoimmune disease at the time of the clinical worsening of tinnitus;

- (43) having multiple sclerosis at the time of the clinical worsening of tinnitus;

- (44) having a benign or malignant neoplasm involving the petrous temporal bone, an auditory structure or central auditory neural pathway of the affected ear at the time of the clinical worsening of tinnitus;

Note: *auditory structure* is defined in the Schedule 1 - Dictionary.

- (45) having a haematological disease from the specified list of haematological diseases at the time of the clinical worsening of tinnitus;

Note: *specified list of haematological diseases* is defined in the Schedule 1 - Dictionary.

- (46) having a cerebrovascular accident within the 30 days before the clinical worsening of tinnitus;

- (47) being exposed to an explosive blast within the 30 days before the clinical worsening of tinnitus;

- (48) being struck by lightning within the 30 days before the clinical worsening of tinnitus;

- (49) having temporomandibular disorder at the time of the clinical worsening of tinnitus;

- (50) having migraine with brainstem aura (basilar migraine) before the clinical worsening of tinnitus;

- (51) having Meniere's disease or delayed endolymphatic hydrops at the time of the clinical worsening of tinnitus;
- (52) having:
- (a) an episode of otitic barotrauma involving the affected ear; or
 - (b) cerebral arterial gas embolism; or
 - (c) decompression sickness;
- within the 30 days before the clinical worsening of tinnitus;
- Note: Otitic barotrauma is also known as otic barotrauma.
- (53) having acoustic shock at the time of the clinical worsening of tinnitus;
- Note: *acoustic shock* is defined in the Schedule 1 - Dictionary.
- (54) having a bacterial infection from the specified list of bacterial infections within the 30 days before the clinical worsening of tinnitus;
- Note: *specified list of bacterial infections* is defined in the Schedule 1 - Dictionary.
- (55) having a viral infection from the specified list of viral infections within the 30 days before the clinical worsening of tinnitus;
- Note: *specified list of viral infections* is defined in the Schedule 1 - Dictionary.
- (56) having meningitis or encephalitis within the one year before the clinical worsening of tinnitus;
- (57) having neurosyphilis before the clinical worsening of tinnitus;
- (58) having tuberculosis involving the nasopharynx, meninges, temporal bone, middle ear or inner ear of the affected side before the clinical worsening of tinnitus;
- (59) having typhoid fever within the 30 days before the clinical worsening of tinnitus;
- (60) undergoing a course of therapeutic radiation for cancer, where the auditory apparatus was in the field of radiation, before the clinical worsening of tinnitus;
- (61) having:
- (a) a cobalt-containing metal-on-metal hip prosthesis; or
 - (b) a serum cobalt concentration of at least 200 micrograms per litre;
- for at least the four weeks before the clinical worsening of tinnitus;
- (62) having vitamin B1 (thiamine) or vitamin B12 (cobalamin) deficiency at the time of the clinical worsening of tinnitus;
- (63) having carbon monoxide poisoning within the 48 hours before the clinical worsening of tinnitus;

(64) inability to obtain appropriate clinical management for tinnitus.

10 Relationship to service

- (1) The existence in a person of any factor referred to in section 9, must be related to the relevant service rendered by the person.
- (2) The factors set out in subsections 9(33) to 9(64) apply only to material contribution to, or aggravation of, tinnitus where the person's tinnitus was suffered or contracted before or during (but did not arise out of) the person's relevant service.

11 Factors referring to an injury or disease covered by another Statement of Principles

In this Statement of Principles:

- (1) if a factor referred to in section 9 applies in relation to a person; and
- (2) that factor refers to an injury or disease in respect of which a Statement of Principles has been determined under subsection 196B(3) of the VEA;

then the factors in that Statement of Principles apply in accordance with the terms of that Statement of Principles as in force from time to time.

Schedule 1 - Dictionary

Note: See Section 6

1 Definitions

In this instrument:

acoustic shock means the development of acoustic shock symptoms within 30 days of being exposed to a brief, sudden, unexpected, loud sound.

Note: **acoustic shock symptoms** is also defined in the Schedule 1 - Dictionary.

acoustic shock symptoms means the acoustic shock symptoms identified in *Work Health and Safety (Managing Noise and Preventing Hearing Loss at Work) Code of Practice 2015*, as in force on 17 December 2015, including:

- (a) a feeling of fullness in the ear;
- (b) burning sensations or sharp pain around or in the ear;
- (c) dizziness;
- (d) hypersensitivity (sensitivity to previously tolerated sounds such as loud voices, television and radio);
- (e) hypervigilance; and
- (f) numbness, tingling or soreness down the side of face, neck or shoulder.

Note: The sounds associated with the development of acoustic shock symptoms include crackles, hisses, whistles, shrieks and high-pitched noises.

auditory structure means the inner ear, middle ear, cochlear nerve or vestibulocochlear nerve.

dB(A) means the sound pressure level in decibels measured by a sound level meter using a type A electronic filter.

dB(C) means the sound pressure level in decibels measured by a sound level meter using a type C electronic filter. The type C filter is used to measure peak or impact sound pressure levels.

chronic suppurative otitis media means a recurrent or continuous infective disorder of the middle ear characterised by perforation of the tympanic membrane and aural discharge.

hyperviscosity syndrome means a disorder causing an increased viscosity of the blood.

Note: Examples of disorders causing an increased viscosity of the blood include polycythaemia and Waldenstrom macroglobulinaemia.

MRCA means the *Military Rehabilitation and Compensation Act 2004*.

relevant service means:

- (a) eligible war service (other than operational service) under the VEA;
- (b) defence service (other than hazardous service and British nuclear test defence service) under the VEA; or
- (c) peacetime service under the MRCA.

Note: **MRCA** and **VEA** are also defined in the Schedule 1 - Dictionary.

specified list of bacterial infections means:

- (a) acute otitis media of the affected side;
- (b) chronic suppurative otitis media of the affected side;
- (c) Lyme disease; or
- (d) suppurative labyrinthitis of the affected side.

Note: *chronic suppurative otitis media* and *suppurative labyrinthitis* are also defined in the Schedule 1 - Dictionary.

specified list of bone diseases means:

- (a) otosclerosis; or
- (b) Paget's disease of bone.

specified list of chemical agents means:

- (a) aminoglycoside-containing ear drops;
- (b) chloramphenicol-containing ear drops; or
- (c) surgical antiseptics.

specified list of drugs means:

- (a) aminoglycoside antibiotics;
- (b) carboplatin;
- (c) cisplatin;
- (d) loop diuretics;
- (e) macrolide antibiotics;
- (f) oxaliplatin;
- (g) quinidine;
- (h) quinine and quinine derivatives, including mefloquine; or
- (i) vancomycin.

specified list of haematological diseases means:

- (a) aplastic anaemia;
- (b) hyperviscosity syndrome;
- (c) Langerhan cell histiocytosis;
- (d) leukaemia;
- (e) myelodysplastic syndrome; or
- (f) sickle-cell disorder.

Note: *hyperviscosity syndrome* is also defined in the Schedule 1 - Dictionary.

specified list of viral infections means:

- (a) coronavirus disease 2019 (COVID-19);
- (b) cytomegalovirus infection of the vestibulocochlear nerve of the affected side;
- (c) human immunodeficiency virus infection;
- (d) Lassa fever;
- (e) measles;
- (f) mumps;
- (g) herpes zoster of the geniculate ganglion on the affected side; or
- (h) viral labyrinthitis of the affected ear.

Note: Herpes zoster of the geniculate ganglion is also known as herpes zoster oticus or Ramsay-Hunt syndrome.

suppurative labyrinthitis means inflammation of the inner ear characterised by the presence of pus.

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

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

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

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

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; and

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

Table of noise exposure levels and durations based on 3-dB(A) exchange rate

Exposure Level, L (dB(A))	Duration, T			Exposure Level, L (dB(A))	Duration, T		
	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

tinnitus—see subsection 7(2).

vascular, muscular or other anatomical source of sound means:

- (a) acquired arteriovenous fistula;
- (b) benign intracranial hypertension;
- (c) brachiocephalic artery stenosis;
- (d) carotid artery stenosis or dissection;
- (e) dural venous sinus stenosis;
- (f) jugular bulb abnormalities;
- (g) neoplastic and non-neoplastic space-occupying lesions involving or arising near the middle or inner ear;
- (h) vascular conditions causing turbulent blood flow in structures close to the middle or inner ear;
- (i) palatal myoclonus;
- (j) patulous eustachian tube;
- (k) spasm of the stapedius or tensor tympani muscles; or
- (l) valvular heart disease.

VEA means the *Veterans' Entitlements Act 1986*.