

Statement of Principles concerning **TINNITUS** (Reasonable Hypothesis) (No. 84 of 2020)

The Repatriation Medical Authority determines the following Statement of Principles under subsection 196B(2) 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:

Professor Nicholas Saunders AO

Chairperson

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1 Name

This is the Statement of Principles concerning *tinnitus (Reasonable Hypothesis)* (No. 84 of 2020).

2 Commencement

This instrument commences on 30 November 2020.

3 Authority

This instrument is made under subsection 196B(2) of the *Veterans' Entitlements Act 1986*.

4 Repeal

The Statement of Principles concerning tinnitus No. 33 of 2012 (Federal Register of Legislation No. F2012L00942) made under subsections 196B(2) and (8) of the VEA is repealed.

5 Application

This instrument applies to a claim to which section 120A of the VEA or section 338 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

The Repatriation Medical Authority is of the view that there is sound medical-scientific evidence that indicates that tinnitus and death from tinnitus can be related to relevant service rendered by veterans, members of Peacekeeping Forces, 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 as a minimum exist before it can be said that a reasonable hypothesis has been raised connecting tinnitus or death from tinnitus 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 smoked at least ten pack-years of tobacco products before the clinical onset of tinnitus, and where smoking has ceased, the clinical onset of tinnitus has occurred within five years of cessation;

Note: pack-year of tobacco products is defined in the Schedule 1 - Dictionary.

- (8) being exposed to second-hand smoke:
 - (a) for at least 2,500 hours before the clinical onset of tinnitus; and
 - (b) where the first exposure to second-hand smoke commenced at least five years before the clinical onset of tinnitus; and
 - (c) where the last exposure to second-hand smoke occurred within the two years before the clinical onset of tinnitus;

Note: being exposed to second-hand smoke is defined in the Schedule 1 - Dictionary.

- (9) 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.
- (10) 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.

- (11) 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.

- (12) 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.
- (13) having osteoporosis at the time of the clinical onset of tinnitus;
- (14) having an autoimmune disease at the time of the clinical onset of tinnitus;
- (15) having multiple sclerosis at the time of the clinical onset of tinnitus;
- (16) 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.
- (17) 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.
- (18) having a cerebrovascular accident within the 30 days before the clinical onset of tinnitus;
- (19) having concussion or moderate to severe traumatic brain injury within the three months before the clinical onset of tinnitus;
- (20) being exposed to an explosive blast within the 30 days before the clinical onset of tinnitus:
- (21) being struck by lightning within the 30 days before the clinical onset of tinnitus:
- (22) having temporomandibular disorder at the time of the clinical onset of tinnitus;
- (23) having trigeminal neuralgia at the time of the clinical onset of tinnitus;
- (24) having migraine or tension-type headache before the clinical onset of tinnitus:
- (25) having Meniere's disease or delayed endolymphatic hydrops at the time of the clinical onset of tinnitus;
- (26) 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.

- (27) having acoustic shock at the time of the clinical onset of tinnitus; Note: *acoustic shock* is defined in the Schedule 1 - Dictionary.
- (28) 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.
- (29) 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.
- (30) having meningitis or encephalitis within the one year before the clinical onset of tinnitus;
- (31) having neurosyphilis before the clinical onset of tinnitus;
- (32) having tuberculosis involving the nasopharynx, meninges, temporal bone, middle ear or inner ear of the affected side before the clinical onset of tinnitus;
- (33) having typhoid fever within the 30 days before the clinical onset of tinnitus;
- (34) undergoing a course of therapeutic radiation for cancer, where the auditory apparatus was in the field of radiation, before the clinical onset of tinnitus;
- (35) 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;
- (36) having vitamin B1 (thiamine) or vitamin B12 (cobalamin) deficiency at the time of the clinical onset of tinnitus;
- (37) having carbon monoxide poisoning within the 48 hours before the clinical onset of tinnitus;
- (38) having hypothyroidism for at least the three months before the clinical onset of tinnitus;
- (39) having a clinically significant depressive disorder or a clinically significant anxiety disorder at the time of the clinical onset of tinnitus;

 Note: *clinically significant* is defined in the Schedule 1 Dictionary.
- (40) 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.

(41) 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.

- (42) 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.
- (43) having sensorineural hearing loss or conductive hearing loss at the time of the clinical worsening of tinnitus;
- (44) 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.
- (45) having smoked at least ten pack-years of tobacco products before the clinical worsening of tinnitus, and where smoking has ceased, the clinical worsening of tinnitus has occurred within five years of cessation;

Note: pack-year of tobacco products is defined in the Schedule 1 - Dictionary.

- (46) being exposed to second-hand smoke:
 - (a) for at least 2,500 hours before the clinical worsening of tinnitus; and
 - (b) where the first exposure to second-hand smoke commenced at least five years before the clinical worsening of tinnitus; and
 - (c) where the last exposure to second-hand smoke occurred within the two years before the clinical worsening of tinnitus;

Note: being exposed to second-hand smoke is defined in the Schedule 1 - Dictionary.

- (47) 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.
- (48) 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.

- (49) 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.
- (50) 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.
- (51) having osteoporosis at the time of the clinical worsening of tinnitus;
- (52) having an autoimmune disease at the time of the clinical worsening of tinnitus;
- (53) having multiple sclerosis at the time of the clinical worsening of tinnitus;
- (54) 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.
- (55) 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.
- (56) having a cerebrovascular accident within the 30 days before the clinical worsening of tinnitus;
- (57) having concussion or moderate to severe traumatic brain injury within the three months before the clinical worsening of tinnitus;
- (58) being exposed to an explosive blast within the 30 days before the clinical worsening of tinnitus;
- (59) being struck by lightning within the 30 days before the clinical worsening of tinnitus;
- (60) having temporomandibular disorder at the time of the clinical worsening of tinnitus;
- (61) having trigeminal neuralgia at the time of the clinical worsening of tinnitus;
- (62) having migraine or tension-type headache before the clinical worsening of tinnitus;

- (63) having Meniere's disease or delayed endolymphatic hydrops at the time of the clinical worsening of tinnitus;
- (64) 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.

- (65) having acoustic shock at the time of the clinical worsening of tinnitus; Note: *acoustic shock* is defined in the Schedule 1 - Dictionary.
- (66) 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.
- (67) 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.

- (68) having meningitis or encephalitis within the one year before the clinical worsening of tinnitus;
- (69) having neurosyphilis before the clinical worsening of tinnitus;
- (70) having tuberculosis involving the nasopharynx, meninges, temporal bone, middle ear or inner ear of the affected side before the clinical worsening of tinnitus;
- (71) having typhoid fever within the 30 days before the clinical worsening of tinnitus;
- (72) undergoing a course of therapeutic radiation for cancer, where the auditory apparatus was in the field of radiation, before the clinical worsening of tinnitus;
- (73) 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;

- (74) having vitamin B1 (thiamine) or vitamin B12 (cobalamin) deficiency at the time of the clinical worsening of tinnitus;
- (75) having carbon monoxide poisoning within the 48 hours before the clinical worsening of tinnitus;

- (76) having hypothyroidism for at least the three months before the clinical worsening of tinnitus;
- (77) having a clinically significant depressive disorder or a clinically significant anxiety disorder at the time of the clinical worsening of tinnitus:

Note: clinically significant is defined in the Schedule 1 - Dictionary.

(78) 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(40) to 9(78) 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(2) 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.

being exposed to second-hand smoke means being in an enclosed space and inhaling smoke from burning tobacco products or smoke that has been exhaled by another person who is smoking.

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.

clinically significant means sufficient to warrant ongoing management, which may involve regular visits (for example, at least monthly), to a psychiatrist, counsellor or general practitioner.

Note: To warrant ongoing management does not require that any actual management was received or given for the condition.

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.

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.

pack-year of tobacco products means:

- (a) 20 cigarettes per day for a period of one calendar year; or
- (b) 7,300 cigarettes in a period of one calendar year; or
- (c) 7,300 grams of smoking tobacco by weight, either in cigarettes, pipe tobacco or cigars, or a combination of same, in a period of one calendar year.

relevant service means:

- (a) operational service under the VEA;
- (b) peacekeeping service under the VEA;
- (c) hazardous service under the VEA;
- (d) British nuclear test defence service under the VEA;
- (e) warlike service under the MRCA; or
- (f) non-warlike 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) acromegaly;
- (b) otosclerosis; or
- (c) Paget's disease of bone.

specified list of chemical agents means:

- (a) aminoglycoside-containing ear drops;
- (b) Burow's solution (5% aluminium subacetate);
- (c) chloramphenicol-containing ear drops; or
- (d) surgical antiseptics.

specified list of drugs means:

- (a) α -difluoromethylornithine (effornithine);
- (b) 2-hydroxypropyl- b-cyclodextrin (HPbCD);
- (c) aminoglycoside antibiotics;
- (d) carbimazole;
- (e) carboplatin;
- (f) cisplatin;
- (g) loop diuretics;
- (h) macrolide antibiotics;
- (i) opioids;
- (j) oxaliplatin;
- (k) phosphodiesterase 5 inhibitors;
- (1) propylthiouracil;

- (m) quinidine;
- (n) quinine and quinine derivatives, including mefloquine;
- (o) vancomycin; or
- (p) vinca alkaloids.

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) hepatitis B;
- (d) hepatitis C;
- (e) herpes simplex;
- (f) human immunodeficiency virus infection;
- (g) Lassa fever;
- (h) measles;
- (i) mumps;
- (j) herpes zoster of the geniculate ganglion on the affected side; or
- (k) 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

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

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

		iis custu c	11 5 42(11)	exchange i			
	Duration, T				Duration, T		
Exposure				Exposure			
Level, L				Level, L			
(dB(A))	Hours	Minutes	Seconds	(dB(A))	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		<u> </u>		_

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.