

Statement of Principles
concerning

SENSORINEURAL HEARING LOSS

No. 5 of 2011

for the purposes of the

Veterans' Entitlements Act 1986
and
Military Rehabilitation and Compensation Act 2004

Title

1. This Instrument may be cited as Statement of Principles concerning sensorineural hearing loss No. 5 of 2011.

Determination

2. The Repatriation Medical Authority under subsection **196B(2)** and **(8)** of the *Veterans' Entitlements Act 1986* (the VEA):
 - (a) revokes Instrument No. 29 of 2001 concerning sensorineural hearing loss; and
 - (b) determines in its place this Statement of Principles.

Kind of injury, disease or death

3.
 - (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 shift to a hearing threshold level of 25 decibels (dB) or more, at 500, 1000, 1500, 2000, 3000, 4000 or 6000 hertz (Hz), due to a defect in the cochlea or the auditory nerve, but excluding congenital deafness.

Basis for determining the factors

4. 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

under the VEA, or members under the *Military Rehabilitation and Compensation Act 2004* (the MRCA).

Factors that must be related to service

5. Subject to clause 7, at least one of the factors set out in clause 6 must be related to the relevant service rendered by the person.

Factors

6. The factor 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 is:
- (a) being exposed to a peak sound pressure level at the tympanic membrane of at least 140 dB(C), before the clinical onset of sensorineural hearing loss; or
 - (b) 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 sensorineural hearing loss; or
 - (c) experiencing otitic barotrauma involving the affected side, or decompression sickness, within the 30 days before the clinical onset of sensorineural hearing loss; or
 - (d) undergoing a course of treatment with a drug or a drug from a class of drugs from the specified list within the one year before the clinical onset of sensorineural hearing loss; or
 - (e) receiving a specified ototopical medication directly into the inner ear, in the presence of tympanic membrane perforation, before the clinical onset of sensorineural hearing loss; or
 - (f) taking aspirin, paracetamol or a nonsteroidal anti-inflammatory drug more than twice per week, for at least the one year before the clinical onset of sensorineural hearing loss; or
 - (g) having suppurative labyrinthitis of the affected ear within the 30 days before the clinical onset of sensorineural hearing loss; or
 - (h) having chronic suppurative otitis media on the affected side before the clinical onset of sensorineural hearing loss; or
 - (i) having an acute viral infection from the specified list of viruses within the 30 days before the clinical onset of sensorineural hearing loss; or

- (j) having meningitis within the 12 months before the clinical onset of sensorineural hearing loss; or
- (k) having neurosyphilis before the clinical onset of sensorineural hearing loss; or
- (l) having tuberculosis involving the temporal bone on the affected side before the clinical onset of sensorineural hearing loss; or
- (m) having diphtheria before the clinical onset of sensorineural hearing loss; or
- (n) having leprosy before the clinical onset of sensorineural hearing loss; or
- (o) having Meniere's disease at the time of the clinical onset of sensorineural hearing loss; or
- (p) having Paget's disease of bone, affecting the petrous temporal bone or middle ear ossicles, at the time of the clinical onset of sensorineural hearing loss; or
- (q) having a specified autoimmune disorder at the time of the clinical onset of sensorineural hearing loss; or
- (r) having multiple sclerosis at the time of the clinical onset of sensorineural hearing loss; or
- (s) having diabetes mellitus at the time of the clinical onset of sensorineural hearing loss; or
- (t) having a hyperviscosity syndrome for at least the 30 days before the clinical onset of sensorineural hearing loss; or
- (u) having a lesion interrupting the supply of blood to the cochlea of the affected ear at the time of the clinical onset of sensorineural hearing loss; or
- (v) having structural injury or physiological disruption to the inner ear or the auditory nerve as a result of blunt trauma, penetrating trauma or surgery, within the five years before the clinical onset of sensorineural hearing loss; or
- (w) having a neoplasm that involves the auditory nerve or the inner ear at the time of the clinical onset of sensorineural hearing loss; or
- (x) undergoing a course of therapeutic radiation to the head or neck region within the 18 months before the clinical onset of sensorineural hearing loss; or

- (y) inhaling, ingesting or having cutaneous contact with a specified organic solvent, on more days than not for a continuous period of at least four years before the clinical onset of sensorineural hearing loss, and where that exposure has ceased, the clinical onset of sensorineural hearing loss occurred within two years after cessation; or
- (z) inhaling, ingesting or having cutaneous contact with lead or emissions containing lead, for a cumulative period of at least 7000 hours, before the clinical onset of sensorineural hearing loss, and where that exposure has ceased, the clinical onset of sensorineural hearing loss occurred within two years after cessation; or
- (aa) smoking at least 20 pack-years of cigarettes, or the equivalent thereof in other tobacco products, before the clinical onset of sensorineural hearing loss, and where smoking has ceased, the clinical onset of sensorineural hearing loss has occurred within five years after cessation; or
- (bb) consuming an average of at least 100 grams of alcohol per day for at least the four years before the clinical onset of sensorineural hearing loss; or
- (cc) being vaccinated with the measles-mumps vaccine within the 90 days before the clinical onset of sensorineural hearing loss; or
- (dd) being exposed to a peak sound pressure level at the tympanic membrane of at least 140 dB(C), before the clinical worsening of sensorineural hearing loss; or
- (ee) 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 sensorineural hearing loss; or
- (ff) experiencing otitic barotrauma involving the affected side, or decompression sickness, within the 30 days before the clinical worsening of sensorineural hearing loss; or
- (gg) undergoing a course of treatment with a drug or a drug from a class of drugs from the specified list within the one year before the clinical worsening of sensorineural hearing loss; or
- (hh) receiving a specified ototopical medication directly into the inner ear, in the presence of tympanic membrane perforation, before the clinical worsening of sensorineural hearing loss; or

- (ii) taking aspirin, paracetamol or a nonsteroidal anti-inflammatory drug more than twice per week, for at least the one year before the clinical worsening of sensorineural hearing loss; or
- (jj) having suppurative labyrinthitis of the affected ear within the 30 days before the clinical worsening of sensorineural hearing loss; or
- (kk) having chronic suppurative otitis media on the affected side before the clinical worsening of sensorineural hearing loss; or
- (ll) having an acute viral infection from the specified list of viruses within the 30 days before the clinical worsening of sensorineural hearing loss; or
- (mm) having meningitis within the 12 months before the clinical worsening of sensorineural hearing loss; or
- (nn) having neurosyphilis before the clinical worsening of sensorineural hearing loss; or
- (oo) having tuberculosis involving the temporal bone on the affected side before the clinical worsening of sensorineural hearing loss; or
- (pp) having diphtheria before the clinical worsening of sensorineural hearing loss; or
- (qq) having leprosy before the clinical worsening of sensorineural hearing loss; or
- (rr) having Meniere's disease at the time of the clinical worsening of sensorineural hearing loss; or
- (ss) having Paget's disease of bone, affecting the petrous temporal bone or middle ear ossicles, at the time of the clinical worsening of sensorineural hearing loss; or
- (tt) having a specified autoimmune disorder at the time of the clinical worsening of sensorineural hearing loss; or
- (uu) having multiple sclerosis at the time of the clinical worsening of sensorineural hearing loss; or
- (vv) having diabetes mellitus at the time of the clinical worsening of sensorineural hearing loss; or
- (ww) having a hyperviscosity syndrome for at least the 30 days before the clinical worsening of sensorineural hearing loss; or

- (xx) having a lesion interrupting the supply of blood to the cochlea of the affected ear at the time of the clinical worsening of sensorineural hearing loss; or
- (yy) having structural injury or physiological disruption to the inner ear or the auditory nerve as a result of blunt trauma, penetrating trauma or surgery, within the five years before the clinical worsening of sensorineural hearing loss; or
- (zz) having a neoplasm that involves the auditory nerve or the inner ear at the time of the clinical worsening of sensorineural hearing loss; or
- (aaa) undergoing a course of therapeutic radiation to the head or neck region within the 18 months before the clinical worsening of sensorineural hearing loss; or
- (bbb) inhaling, ingesting or having cutaneous contact with a specified organic solvent, on more days than not for a continuous period of at least four years before the clinical worsening of sensorineural hearing loss, and where that exposure has ceased, the clinical worsening of sensorineural hearing loss occurred within two years after cessation; or
- (ccc) inhaling, ingesting or having cutaneous contact with lead or emissions containing lead, for a cumulative period of at least 7000 hours, before the clinical worsening of sensorineural hearing loss, and where that exposure has ceased, the clinical worsening of sensorineural hearing loss occurred within two years after cessation; or
- (ddd) smoking at least 20 pack-years of cigarettes, or the equivalent thereof in other tobacco products, before the clinical worsening of sensorineural hearing loss, and where smoking has ceased, the clinical worsening of sensorineural hearing loss has occurred within five years after cessation; or
- (eee) consuming an average of at least 100 grams of alcohol per day for at least the four years before the clinical worsening of sensorineural hearing loss; or
- (fff) being vaccinated with the measles-mumps vaccine within the 90 days before the clinical worsening of sensorineural hearing loss; or
- (ggg) inability to obtain appropriate clinical management for sensorineural hearing loss.

Factors that apply only to material contribution or aggravation

7. Paragraphs **6(dd) to 6(ggg)** 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.

Inclusion of Statements of Principles

8. 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 as in force from time to time.

Other definitions

9. 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;

"a drug or a drug from a class of drugs from the specified list" means:

- (a) α -difluoromethylornithine (eflornithine);
- (b) aminoglycoside antibiotics;
- (c) antineoplastic agents as specified;
- (d) carbamazepine;
- (e) loop diuretics;
- (f) macrolide antibiotics;
- (g) phosphodiesterase 5 inhibitors, including sildenafil (Viagra); or
- (h) quinine derivatives;

"a hyperviscosity syndrome" means a disorder causing an increased viscosity of the blood, including leukaemia, polycythaemia or macroglobulinaemia;

"a specified autoimmune disorder" means one of the following:

- (a) Behçet's syndrome;
- (b) Cogan's syndrome;
- (c) immune thrombocytopaenic purpura;
- (d) inflammatory myopathies, e.g., dermatomyositis, polymyositis, inclusion-body myositis;
- (e) microscopic polyangiitis;
- (f) polyarteritis nodosa;
- (g) relapsing polychondritis;
- (h) rheumatoid arthritis;
- (i) Sjögren's syndrome;
- (j) Susac's syndrome;
- (k) systemic lupus erythematosus;
- (l) systemic sclerosis (scleroderma); or

- (m) Wegener's granulomatosis;

"a specified ototopical medication" means ear drops containing agents from the following list:

- (a) acetic acid;
- (b) chloramphenicol;
- (c) chlorhexidine;
- (d) chloromycetin;
- (e) cresylate;
- (f) ethanol;
- (g) gentian violet;
- (h) povidone iodine; or
- (i) salicylates;

"a specified organic solvent" means:

- (a) allyl benzene;
- (b) α -methylstyrene;
- (c) carbon disulphide;
- (d) dimethylacetamide;
- (e) ethyl benzene;
- (f) naphthalene;
- (g) *n*-hexane;
- (h) *n*-propylbenzene;
- (i) *p*-xylene;
- (j) styrene;
- (k) toluene;
- (l) trichloroethylene; or
- (m) trans- β -methylstyrene;

"alcohol" is measured by the alcohol consumption calculations utilising the Australian Standard of 10 grams of alcohol per standard alcoholic drink;

"antineoplastic agents as specified" means:

- (a) carboplatin;
- (b) cisplatin;
- (c) daunorubicin derivatives;
- (d) erlotinib;
- (e) 5-fluorouracil (5-FU);
- (f) fotemustine;
- (g) imatinib;
- (h) misonidazole;
- (i) nitrogen mustard compounds;
- (j) oxaliplatin; or
- (k) vinca alkaloids, including vinblastine or vincristine;

"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;

"dB(A)" means A-weighted sound pressure level in decibels, where

A-weighting is a standardised frequency response used in sound measuring instruments;

"dB(C)" means C-weighted sound pressure level in decibels, where C-weighting is a standardised frequency response used in sound measuring instruments;

"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;

"meningitis" means inflammation of the lining of the brain, which may be of bacterial, viral, fungal or parasitic origin;

"neurosyphilis" means inflammation of the central nervous system as a manifestation of syphilis;

"pack-years of cigarettes, or the equivalent thereof in other tobacco products" means a calculation of consumption where one pack-year of cigarettes equals twenty tailor-made cigarettes per day for a period of one calendar year, or 7300 cigarettes. One tailor-made cigarette approximates one gram of tobacco or one gram of cigar or pipe tobacco by weight. One pack-year of tailor-made cigarettes equates to 7300 cigarettes, or 7.3 kilograms of smoking tobacco by weight. Tobacco products means either cigarettes, pipe tobacco or cigars smoked, alone or in any combination;

"relevant service" means:

- (a) operational service under the VEA;
- (b) peacekeeping service under the VEA;
- (c) hazardous service under the VEA;
- (d) warlike service under the MRCA; or
- (e) non-warlike service under the MRCA;

"specified list of viruses" means:

- (a) measles virus;
- (b) mumps virus; or
- (c) varicella-zoster virus;

"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:

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

"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-dB(A) exchange rate

Exposure Level, <i>L</i> (dB(A))	Duration, <i>T</i>			Exposure Level, <i>L</i> (dB(A))	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

10. This Instrument applies to all matters to which section 120A of the VEA or section 338 of the MRCA applies.

Date of effect

11. This Instrument takes effect from 5 January 2011.

Dated this **fourteenth** day of **December** 2010

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

KEN DONALD
CHAIRPERSON