



Australian Government
Repatriation Medical Authority

Statement of Principles concerning ALZHEIMER DISEASE (Reasonable Hypothesis) (No. 33 of 2019)

The Repatriation Medical Authority determines the following Statement of Principles under subsection 196B(2) of the *Veterans' Entitlements Act 1986*.

Dated 1 March 2019

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

Contents

1	Name	3
2	Commencement	3
3	Authority	3
4	Repeal	3
5	Application.....	3
6	Definitions.....	3
7	Kind of injury, disease or death to which this Statement of Principles relates	3
8	Basis for determining the factors	4
9	Factors that must exist.....	5
10	Relationship to service	6
11	Factors referring to an injury or disease covered by another Statement of Principles.....	6
Schedule 1 - Dictionary		7
1	Definitions.....	7

1 Name

This is the Statement of Principles concerning *Alzheimer disease (Reasonable Hypothesis)* (No. 33 of 2019).

2 Commencement

This instrument commences on 25 March 2019.

3 Authority

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

4 Repeal

The Statement of Principles concerning Alzheimer-type dementia No. 22 of 2010 (Federal Register of Legislation No. F2017C00820) made under subsections 196B(2) and (8) of the VEA is repealed.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 Alzheimer disease and death from Alzheimer disease.

Meaning of Alzheimer disease

- (2) For the purposes of this Statement of Principles, Alzheimer disease means a central nervous system neurodegenerative disorder meeting the following clinical diagnostic criteria (derived from DSM-5):
- A. Evidence of major neurocognitive disorder or mild neurocognitive disorder.
 - B. There is insidious onset and gradual progression of impairment in one or more cognitive domains. There is steady progressive, gradual decline in cognition, without extended plateaus.
 - C. There is either:
 - (i) evidence of a causative Alzheimer disease genetic mutation from family history or genetic testing; or

- (ii) clear evidence of decline in memory and learning, except where there are atypical presentations of Alzheimer disease.
- D. The cognitive deficits in Criteria A, B and C are not primarily due to any of the following:
 - (i) delirium;
 - (ii) another mental disorder (for example, major depressive disorder, schizophrenia); or
 - (iii) cerebrovascular disease, another neurodegenerative disease (for example, neurocognitive disorder with Lewy bodies, Parkinson's disease, Huntington's chorea), brain tumour, subdural haematoma, the effects of a substance, or systemic disorder (for example, hypothyroidism, vitamin B12 or folic acid deficiency, niacin deficiency, hypercalcaemia, neurosyphilis, human immunodeficiency virus infection).

Note: *atypical presentations of Alzheimer disease*, *DSM-5*, *major neurocognitive disorder* and *mild neurocognitive disorder* are defined in the Schedule 1 – Dictionary.

- (3) While Alzheimer disease attracts ICD-10-AM code G30.0, G30.1, G30.8 or G30.9, in applying this Statement of Principles the meaning of Alzheimer disease 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 Alzheimer disease

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

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 Alzheimer disease and death from Alzheimer disease 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 Alzheimer disease or death from Alzheimer disease with the circumstances of a person's relevant service:

- (1) having moderate to severe traumatic brain injury at least ten years before the clinical onset of Alzheimer disease;
- (2) smoking at least 20 pack-years of cigarettes, or the equivalent thereof in other tobacco products, before the clinical onset of Alzheimer disease, and where smoking has ceased, the clinical onset of Alzheimer disease has occurred within five years of cessation;

Note: *pack-years of cigarettes, or the equivalent thereof in other tobacco products* is defined in the Schedule 1 - Dictionary.

- (3) undergoing a course of therapeutic radiation for cancer, where the brain was in the field of radiation, at least ten years before the clinical onset of Alzheimer disease;
- (4) having received a cumulative dose of at least ten microTesla-years of extremely low frequency electromagnetic field (ELF-EMF), at least ten years before the clinical onset of Alzheimer disease;

Note: *cumulative dose* and *extremely low frequency electromagnetic field (ELF-EMF)* are defined in the Schedule 1 - Dictionary.

- (5) being obese for at least ten years before the clinical onset of Alzheimer disease;

Note: *being obese* is defined in the Schedule 1 - Dictionary.

- (6) having dyslipidaemia before the age of 65 years and at least ten years before the clinical onset of Alzheimer disease;

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

- (7) having diabetes mellitus for at least the ten years before the clinical onset of Alzheimer disease;

- (8) having hypertension at least ten years before the clinical onset of Alzheimer disease;

- (9) having hyperhomocysteinaemia at least ten years before the clinical onset of Alzheimer disease;

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

- (10) having major depressive disorder at least ten years before the clinical onset of Alzheimer disease;

- (11) having posttraumatic stress disorder at least ten years before the clinical onset of Alzheimer disease;

- (12) an inability to undertake any physical activity greater than three METs for at least five years, at least ten years before the clinical onset of Alzheimer disease;

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

- (13) being treated with an anticholinergic drug from the specified list of anticholinergic drugs, at the time of the clinical worsening of Alzheimer disease;

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

- (14) inability to obtain appropriate clinical management for Alzheimer disease.

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(13) and 9(14) apply only to material contribution to, or aggravation of, Alzheimer disease where the person's Alzheimer disease 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:

Alzheimer disease—see subsection 7(2).

atypical presentations of Alzheimer disease means where memory and learning impairments are not predominant (nonamnesic presentations). There are several different variants of this nonamnesic presentation including visuospatial, logopenic aphasic, visuoperceptive impairments and executive dysfunction.

being obese means having a Body Mass Index (BMI) of 30 or greater.

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

BMI means W/H^2 where:

W is the person's weight in kilograms; and

H is the person's height in metres.

cumulative dose means the total dose of extremely low frequency electromagnetic field (ELF-EMF) received by the body. The unit of cumulative dose is the microTesla-year. The cumulative dose is calculated from the sum of exposures to electromagnetic field flux density in microTesla multiplied by the duration of the exposure in years, excluding background exposure.

Note: ***extremely low frequency electromagnetic field (ELF-EMF)*** is also defined in the Schedule 1 - Dictionary.

DSM-5 means the American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition. Arlington, VA, American Psychiatric Association, 2013.

dyslipidaemia generally means evidence of a persistently abnormal lipid profile after the accurate evaluation of serum lipids following a 12 hour overnight fast, and estimated on a minimum of two occasions as:

- (a) a total cholesterol level greater than or equal to 5.5 millimoles per litre (mmol/L);
- (b) a triglyceride level greater than or equal to 2.0 mmol/L; or
- (c) a high density lipoprotein cholesterol level less than 1.0 mmol/L.

extremely low frequency electromagnetic field (ELF-EMF) means electromagnetic fields generated at a frequency of 3-3000 hertz (Hz), and excludes static electromagnetic fields (for example, MRI scans) and radiofrequency electromagnetic fields (for example, radar).

Note: Examples of circumstances that might lead to exposure to ELF-EMF include, but are not limited to, being in close proximity to electric power generators, electric motors, transformers, inductors, and power transmission and distribution lines.

hyperhomocysteinaemia means a condition characterised by an excess of homocysteine in the blood.

major neurocognitive disorder means:

- (a) evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on:
 - (i) concern of the individual, a knowledgeable informant, or the clinician that there has been a significant decline in cognitive function; and
 - (ii) a substantial impairment in cognitive performance, documented by standardised neuropsychological testing or another qualified clinical assessment; and
- (b) the cognitive deficits interfere with independence in everyday activities (that is, at a minimum, requiring assistance with complex instrumental activities of daily living such as paying bills or managing medications).

MET means a unit of measurement of the level of physical exertion. 1 MET = 3.5 ml of oxygen/kg of body weight per minute, 1.0 kcal/kg of body weight per hour or resting metabolic rate.

mild neurocognitive disorder means evidence of modest cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on:

- (a) concern of the individual, a knowledgeable informant, or the clinician that there has been a mild decline in cognitive function; and
- (b) a modest impairment in cognitive performance, documented by standardised neuropsychological testing.

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

pack-years of cigarettes, or the equivalent thereof in other tobacco products means a calculation of consumption where one pack-year of cigarettes equals 20 tailor-made cigarettes per day for a period of one calendar year, or 7 300 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 7.3 kilograms of smoking tobacco by weight. Tobacco products mean 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) 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 anticholinergic drugs means:

- (a) antidepressants (amitriptyline, amoxapine, clomipramine, desipramine, doxepin, imipramine, nortriptyline, paroxetine, protriptyline and trimipramine);
- (b) antiparkinson agents (benztropine, biperiden, chlorphenoxamine, cycrimine, ethopropazine, procyclidine and trihexyphenidyl); or
- (c) bladder antimuscarinics (darifenacin, fesoterodine, flavoxate, oxybutynin, solifenacin, tolterodine and trospium).

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.

VEA means the *Veterans' Entitlements Act 1986*.