



Australian Government
Repatriation Medical Authority

Statement of Principles
concerning
CAROTID ARTERY DISEASE
(Reasonable Hypothesis)
(No. 54 of 2020)

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

Dated 28 August 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 'Nicholas Saunders'.

Professor Nicholas Saunders AO
Chairperson

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1 Name

This is the Statement of Principles concerning *carotid artery disease (Reasonable Hypothesis)* (No. 54 of 2020).

2 Commencement

This instrument commences on 28 September 2020.

3 Authority

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

4 Repeal

The Statement of Principles concerning carotid arterial disease No. 37 of 2012 (Federal Register of Legislation No. F2012L00940) made under subsections 196B(2) and (8) of the VEA is repealed.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 carotid artery disease and death from carotid artery disease.

Meaning of carotid artery disease

- (2) For the purposes of this Statement of Principles, carotid artery disease:
- (a) means an occlusion, stenosis, aneurysm, dissection or arteriovenous fistula of the common, internal or external carotid artery that warrants medical treatment; and
 - (b) includes carotid atherosclerosis and non-atherosclerotic carotid artery disease.
- (3) While carotid artery disease attracts ICD-10-AM code I65.2, I70.8, I72.0 or I77.0, in applying this Statement of Principles the meaning of carotid artery 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 carotid artery disease

- (5) For the purposes of this Statement of Principles, carotid artery disease, in relation to a person, includes death from a terminal event or condition that was contributed to by the person's carotid artery 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 carotid artery disease and death from carotid artery 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 carotid artery disease or death from carotid artery disease with the circumstances of a person's relevant service:

- (1) having hypertension before the clinical onset of carotid artery disease;
- (2) having diabetes mellitus before the clinical onset of carotid artery disease;
- (3) being obese for at least five years within the 20 years before the clinical onset of carotid artery disease;

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

- (4) having dyslipidaemia before the clinical onset of carotid artery disease;
- (5) where smoking has not permanently ceased, having smoked at least one pack-year of tobacco products before the clinical onset of carotid artery disease;

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

- (6) where smoking has permanently ceased before the clinical onset of carotid artery disease:
- (a) having smoked at least five pack-years of tobacco products; or
 - (b) having smoked at least one pack-year but less than five pack-years of tobacco products, and the clinical onset of carotid artery disease has occurred within 20 years of smoking cessation;
- Note: *pack-year of tobacco products* is defined in the Schedule 1 - Dictionary.
- (7) where exposure to second-hand smoke has not permanently ceased, being exposed to second-hand smoke for at least 1,000 hours before the clinical onset of carotid artery disease;
- Note: *being exposed to second-hand smoke* is defined in the Schedule 1 - Dictionary.
- (8) where exposure to second-hand smoke has permanently ceased before the clinical onset of carotid artery disease:
- (a) being exposed to second-hand smoke for at least 5,000 hours; or
 - (b) being exposed to second-hand smoke for at least 1,000 hours but less than 5,000 hours, and the clinical onset of carotid artery disease has occurred within five years of the last exposure to second-hand smoke;
- Note: *being exposed to second-hand smoke* is defined in the Schedule 1 - Dictionary.
- (9) having hyperhomocysteinaemia before the clinical onset of carotid artery disease;
- (10) an inability to undertake any physical activity greater than three METs for at least five years within the 20 years before the clinical onset of carotid artery disease;
- Note: *MET* is defined in the Schedule 1 - Dictionary.
- (11) having chronic kidney disease before the clinical onset of carotid artery disease;
- Note: *chronic kidney disease* is defined in the Schedule 1 - Dictionary.
- (12) undergoing a course of therapeutic radiation for cancer, where the affected artery was in the field of radiation, before the clinical onset of carotid artery disease;
- (13) having received a cumulative equivalent dose of at least 0.5 sievert of ionising radiation to the affected artery before the clinical onset of carotid artery disease;
- Note: *cumulative equivalent dose* is defined in the Schedule 1 - Dictionary.
- (14) an inability to consume an average of at least 100 grams per day of any combination of fruit and vegetables, for at least five consecutive years within the 20 years before the clinical onset of carotid artery disease;

- (15) having infection with human immunodeficiency virus or hepatitis C virus before the clinical onset of carotid artery disease;
- (16) having periodontitis for at least the two years before the clinical onset of carotid artery disease;
- (17) having infection of the affected artery with a bacterial or fungal organism before the clinical onset of carotid artery disease;
- (18) having an autoimmune disease of the affected artery before the clinical onset of carotid artery disease;

Note: Examples of autoimmune diseases that may cause carotid artery disease are ankylosing spondylitis, antiphospholipid syndrome, Behcet disease, inflammatory bowel disease, psoriatic arthropathy, rheumatoid arthritis, systemic lupus erythematosus and systemic sclerosis.

- (19) having a neoplasm infiltrating the affected segment of the artery at the time of the clinical onset of carotid artery disease;
- (20) being exposed to arsenic as specified before the clinical onset of carotid artery disease;

Note: *being exposed to arsenic as specified* is defined in the Schedule 1 - Dictionary.

- (21) having obstructive sleep apnoea for at least the one year before the clinical onset of carotid artery disease;
- (22) for dissection of the internal carotid artery only, being within the 30 days postpartum at the time of the clinical onset of carotid artery disease;
- (23) for aneurysm, dissection or arteriovenous fistula only, having trauma to the affected segment of the artery before the clinical onset of carotid artery disease;

Note: *trauma to the affected segment of the artery* is defined in the Schedule 1 - Dictionary.

- (24) for dissection only:

- (a) having trauma to the neck or the base of the skull within the six months before the clinical onset of carotid artery disease;

Note: *trauma to the neck or the base of the skull* is defined in the Schedule 1 - Dictionary.

- (b) taking a fluoroquinolone antibiotic within the 30 days before the clinical onset of carotid artery disease;

- (25) for aneurysm or dissection of the common or internal carotid artery only, taking a drug from the specified list of drugs within the four days before the clinical onset of carotid artery disease;

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

- (26) having hypertension before the clinical worsening of carotid artery disease;
- (27) having diabetes mellitus before the clinical worsening of carotid artery disease;
- (28) being obese for at least five years within the 20 years before the clinical worsening of carotid artery disease;
Note: *being obese* is defined in the Schedule 1 - Dictionary.
- (29) having dyslipidaemia before the clinical worsening of carotid artery disease;
Note: *dyslipidaemia* is defined in the Schedule 1 - Dictionary.
- (30) where smoking has not permanently ceased, having smoked at least one pack-year of tobacco products before the clinical worsening of carotid artery disease;
Note: *pack-year of tobacco products* is defined in the Schedule 1 - Dictionary.
- (31) where smoking has permanently ceased before the clinical worsening of carotid artery disease:
- (a) having smoked at least five pack-years of tobacco products; or
 - (b) having smoked at least one pack-year but less than five pack-years of tobacco products, and the clinical worsening of carotid artery disease has occurred within 20 years of smoking cessation;
Note: *pack-year of tobacco products* is defined in the Schedule 1 - Dictionary.
- (32) where exposure to second-hand smoke has not permanently ceased, being exposed to second-hand smoke for at least 1,000 hours before the clinical worsening of carotid artery disease;
Note: *being exposed to second-hand smoke* is defined in the Schedule 1 - Dictionary.
- (33) where exposure to second-hand smoke has permanently ceased before the clinical worsening of carotid artery disease:
- (a) being exposed to second-hand smoke for at least 5,000 hours; or
 - (b) being exposed to second-hand smoke for at least 1,000 hours but less than 5,000 hours, and the clinical worsening of carotid artery disease has occurred within five years of the last exposure to second-hand smoke;
Note: *being exposed to second-hand smoke* is defined in the Schedule 1 - Dictionary.
- (34) having hyperhomocysteinaemia before the clinical worsening of carotid artery disease;

- (35) an inability to undertake any physical activity greater than three METs for at least five years within the 20 years before the clinical worsening of carotid artery disease;

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

- (36) having chronic kidney disease before the clinical worsening of carotid artery disease;

Note: *chronic kidney disease* is defined in the Schedule 1 - Dictionary.

- (37) undergoing a course of therapeutic radiation for cancer, where the affected artery was in the field of radiation, before the clinical worsening of carotid artery disease;

- (38) having received a cumulative equivalent dose of at least 0.5 sievert of ionising radiation to the affected artery before the clinical worsening of carotid artery disease;

Note: *cumulative equivalent dose* is defined in the Schedule 1 - Dictionary.

- (39) an inability to consume an average of at least 100 grams per day of any combination of fruit and vegetables, for at least five consecutive years within the 20 years before the clinical worsening of carotid artery disease;

- (40) having infection with human immunodeficiency virus or hepatitis C virus before the clinical worsening of carotid artery disease;

- (41) having periodontitis for at least the two years before the clinical worsening of carotid artery disease;

- (42) having infection of the affected artery with a bacterial or fungal organism before the clinical worsening of carotid artery disease;

- (43) having an autoimmune disease of the affected artery before the clinical worsening of carotid artery disease;

Note: Examples of autoimmune diseases that may cause carotid artery disease are ankylosing spondylitis, antiphospholipid syndrome, Behcet disease, inflammatory bowel disease, psoriatic arthropathy, rheumatoid arthritis, systemic lupus erythematosus and systemic sclerosis.

- (44) having a neoplasm infiltrating the affected segment of the artery at the time of the clinical worsening of carotid artery disease;

- (45) being exposed to arsenic as specified before the clinical worsening of carotid artery disease;

Note: *being exposed to arsenic as specified* is defined in the Schedule 1 - Dictionary.

- (46) having obstructive sleep apnoea for at least the one year before the clinical worsening of carotid artery disease;

- (47) for dissection of the internal carotid artery only, being within the 30 days postpartum at the time of the clinical worsening of carotid artery disease;
- (48) for aneurysm, dissection or arteriovenous fistula only, having trauma to the affected segment of the artery before the clinical worsening of carotid artery disease;

Note: *trauma to the affected segment of the artery* is defined in the Schedule 1 - Dictionary.

- (49) for dissection only:
- (a) having trauma to the neck or the base of the skull within the six months before the clinical worsening of carotid artery disease;
- Note: *trauma to the neck or the base of the skull* is defined in the Schedule 1 - Dictionary.
- (b) taking a fluoroquinolone antibiotic within the 30 days before the clinical worsening of carotid artery disease;
- (50) for aneurysm or dissection of the common or internal carotid artery only, taking a drug from the specified list of drugs within the four days before the clinical worsening of carotid artery disease;

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

- (51) inability to obtain appropriate clinical management for carotid artery 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(26) to 9(51) apply only to material contribution to, or aggravation of, carotid artery disease where the person's carotid artery 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:

abnormality of kidney structure or function means:

- (a) having a glomerular filtration rate of less than 60 mL/min/1.73 m²; or
- (b) having kidney damage, as evidenced by renal biopsy, imaging studies, albuminuria, urinary sediment abnormalities or other markers of abnormal renal function; or
- (c) having had a kidney transplant.

being exposed to arsenic as specified means:

- (a) consuming drinking water with an average arsenic concentration of at least 50 micrograms per litre for a cumulative period of at least ten years; or
- (b) consuming drinking water resulting in a cumulative total arsenic exposure equivalent to having consumed drinking water containing at least 50 micrograms per litre for at least ten years; or
- (c) having clinical evidence of chronic arsenic toxicity.

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.

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:

- (a) W is the person's weight in kilograms; and
- (b) H is the person's height in metres.

carotid artery disease—see subsection 7(2).

chronic kidney disease means an abnormality of kidney structure or function that has been present for at least three months.

Note: ***abnormality of kidney structure or function*** is also defined in the Schedule 1 - Dictionary.

cumulative equivalent dose means the total dose of ionising radiation received by the particular organ or tissue from external exposure, internal exposure or both, apart from normal background radiation exposure in Australia, calculated in accordance with the methodology set out in *Guide to calculation of 'cumulative equivalent dose' for the purpose of applying ionising radiation factors contained in Statements of Principles determined under Part XIA of the Veterans' Entitlements Act 1986 (Cth)*, Australian Radiation Protection and Nuclear Safety Agency, as in force on 2 August 2017.

Note 1: Examples of circumstances that might lead to exposure to ionising radiation include being present during or subsequent to the testing or use of nuclear weapons, undergoing diagnostic or therapeutic medical procedures involving ionising radiation, and being a member of an aircrew, leading to increased levels of exposure to cosmic radiation.

Note 2: For the purpose of dose reconstruction, dose is calculated as an average over the mass of a specific tissue or organ. If a tissue is exposed to multiple sources of ionising radiation, the various dose estimates for each type of radiation must be combined.

dyslipidaemia means persistently abnormal blood lipid levels, diagnosed by a medical practitioner and evidenced by:

- (a) a serum high density lipoprotein cholesterol level less than 1.0 mmol/L; or
- (b) a serum low density lipoprotein level greater than 4.0 mmol/L; or
- (c) a serum triglyceride level greater than or equal to 2.0 mmol/L; or
- (d) a total serum cholesterol level greater than 5.5 mmol/L; or
- (e) the regular administration of drug therapy to normalise blood lipid levels.

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.

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 drugs means:

- (a) 3,4-methylenedioxymethamphetamine (ecstasy);
- (b) amphetamine;
- (c) cocaine;
- (d) crystal methamphetamine (ice);
- (e) D-lysergic acid diethylamide (LSD);
- (f) ergot compounds including ergometrine and ergotamine; or
- (g) methamphetamine (speed).

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.

trauma to the affected segment of the artery means:

- (a) a blunt trauma resulting in soft tissue injury adjacent to the affected segment of the artery; or
- (b) a penetrating trauma, including surgery, to the affected segment of the artery.

trauma to the neck or the base of the skull means:

- (a) non-penetrating injury, involving extension, rotation, hyperflexion or compression of the neck; or
- (b) injury resulting in fracture or dislocation of the cervical spine.

VEA means the *Veterans' Entitlements Act 1986*.