



Australian Government
Repatriation Medical Authority

Statement of Principles
concerning
HEART BLOCK
(Reasonable Hypothesis)
(No. 23 of 2022)

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

Dated 4 March 2022

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

Professor Terence Campbell AM
Chairperson

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1 Name

This is the Statement of Principles concerning *heart block (Reasonable Hypothesis)* (No. 23 of 2022).

2 Commencement

This instrument commences on 4 April 2022.

3 Authority

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

4 Repeal

The Statement of Principles concerning heart block No. 1 of 2014 (Federal Register of Legislation No. F2014L00007) made under subsections 196B(2) and (8) of the VEA is repealed.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 heart block and death from heart block.

Meaning of heart block

- (2) For the purposes of this Statement of Principles, heart block:
- (a) means a cardiac disorder in which there is a delay or interruption to the conduction of electrical impulse from the atria to the ventricles through the atrioventricular node, bundle of His or the bundle branches due to an anatomical or functional impairment in the conduction system; and
 - (b) includes atrioventricular block and bundle branch block; and
 - (c) excludes congenital heart block, long QT syndrome and transient physiological heart block.

Note 1: Heart block includes right and left bundle branch block, bifascicular and trifascicular block, and first, second and third degree atrioventricular block.

Note 2: Second degree heart block includes Mobitz type I (Wenckebach) and Mobitz type II atrioventricular block.

Note 3: Heart block may be asymptomatic in some cases. Symptoms of heart block typically include fatigue, shortness of breath or chest pain on exertion, dizziness and fainting (syncope).

- (3) While heart block attracts ICD-10-AM code I44, I45.0, I45.1, I45.2, I45.3, I45.4 or I45.9, in applying this Statement of Principles the meaning of heart block 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 heart block

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

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 heart block and death from heart block 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 heart block or death from heart block with the circumstances of a person's relevant service:

- (1) having ischaemic heart disease at the time of the clinical onset of heart block;
- (2) having pulmonary thromboembolism within the 7 days before the clinical onset of heart block;
- (3) having infiltration of the myocardium due to an infiltrative disease from the specified list of infiltrative diseases at the time of the clinical onset of heart block;

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

- (4) having cardiomyopathy at the time of the clinical onset of heart block;
- (5) having a benign or malignant neoplasm involving the heart before the clinical onset of heart block;

Note: A neoplasm involving the heart can be primary or metastatic. An example of a primary neoplasm involving the heart is cardiac lymphoma.

- (6) having a lesion which compresses the atrioventricular node, bundle of His or the bundle branches of the heart at the time of the clinical onset of heart block;

Note: Examples of lesions which can compress the atrioventricular node, bundle of His or the bundle branches of the heart include a paraoesophageal hiatus hernia, a thoracic aortic aneurysm and a haematoma.

- (7) having non-infectious myocarditis at the time of the clinical onset of heart block;

Note 1: Non-infectious myocarditis can be acute or chronic.

Note 2: Non-infectious myocarditis can be of autoimmune, infiltrative or immunological origin. Examples of causes of non-infectious myocarditis include immune checkpoint inhibitor therapy and giant cell myocarditis.

- (8) having viral myocarditis at the time of the clinical onset of heart block;

Note 1: Viral myocarditis can be acute or chronic.

Note 2: Examples of viral causes of myocarditis include severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), human immunodeficiency virus, group B coxsackieviruses and dengue virus.

- (9) having a non-viral infection of the myocardium at the time of the clinical onset of heart block;

Note 1: A non-viral infection of the myocardium can be caused by bacteria, protozoa, fungi or parasites.

Note 2: Examples of non-viral infections of the myocardium include:

- (a) *Borrelia burgdorferi* (Lyme disease);
- (b) *Corynebacterium diphtheriae* (diphtheria);
- (c) *Cysticercus* species (cysticercosis);
- (d) *Echinococcus* species (hydatid disease);
- (e) *Treponema pallidum* (tertiary syphilis);
- (f) *Trypanosoma cruzi* (Chagas disease); and
- (g) *Toxoplasma gondii* (toxoplasmosis).

- (10) having infective endocarditis at the time of the clinical onset of heart block;

- (11) having a mineral or electrolyte abnormality from the specified list of mineral or electrolyte abnormalities at the time of the clinical onset of heart block;

Note: *specified list of mineral or electrolyte abnormalities* is defined in the Schedule 1 - Dictionary.

- (12) taking a drug from the specified list of drugs within the 3 weeks before the clinical onset of heart block;

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

- (13) taking chloroquine or hydroxychloroquine for at least 1 year before the clinical onset of heart block;

- (14) having ingested a plant containing cardiac glycosides within the 7 days before the clinical onset of heart block;

Note: Examples of plants containing cardiac glycosides include the pong-pong tree (*Cerbera odollam*) and foxglove (*Digitalis purpurea*).

- (15) having acute pyrethroid poisoning after inhaling, ingesting or having cutaneous contact with a pyrethroid insecticide within the 3 days before the clinical onset of heart block;

Note: Clinical features of acute pyrethroid poisoning may include dermal, neurological, gastrointestinal and respiratory symptoms. Cardiac involvement can lead to chest pain, tachycardia, hypertension, hypotension and arrhythmia.

- (16) experiencing penetrating trauma to the heart within the 1 year before the clinical onset of heart block;

- (17) having a thoracic surgical procedure or an invasive cardiac procedure within the 1 year before the clinical onset of heart block;

Note 1: Examples of thoracic surgical procedures include vascular, mediastinal, pulmonary and chest wall surgery.

Note 2: Examples of invasive cardiac procedures include:

- (a) alcohol septal ablation;
- (b) catheter ablation of arrhythmias;
- (c) open heart surgery; and
- (d) transcatheter aortic valve implantation.

- (18) experiencing a blunt chest injury within the 60 days before the clinical onset of heart block;

Note: *blunt chest injury* is defined in the Schedule 1 - Dictionary.

- (19) having a heart transplant before the clinical onset of heart block;

- (20) having a bone marrow transplant or stem cell transplant within the 24 hours before the clinical onset of heart block;

- (21) having graft versus host disease after a bone marrow transplant or stem cell transplant at the time of the clinical onset of heart block;

- (22) undergoing a course of therapeutic radiation for cancer, where the heart was in the field of radiation, before the clinical onset of heart block;

- (23) undertaking strenuous physical activity greater than 6 METs for an average of at least 10 hours per week for a continuous period of at least the 5 years before the clinical onset of heart block;

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

- (24) being envenomated by a scorpion or snake within the 24 hours before the clinical onset of heart block;
 - (25) having diabetes mellitus at the time of the clinical onset of heart block;
 - (26) having hypertension before the clinical onset of heart block;
 - (27) having obstructive sleep apnoea at the time of the clinical onset of heart block;
 - (28) having smoked cannabis products within the 7 days before the clinical onset of heart block;
 - (29) binge drinking within the 2 days before the clinical onset of heart block;
- Note: *binge drinking* is defined in the Schedule 1 - Dictionary.
- (30) having a thyroid condition from the specified list of thyroid conditions at the time of the clinical onset of heart block;
- Note: *specified list of thyroid conditions* is defined in the Schedule 1 - Dictionary.
- (31) having an autoimmune disease from the specified list of autoimmune diseases at the time of the clinical onset of heart block;
- Note: *specified list of autoimmune diseases* is defined in the Schedule 1 - Dictionary.
- (32) having acute rheumatic fever at the time of the clinical onset of heart block;
 - (33) having rheumatic heart disease at the time of the clinical onset of heart block;
 - (34) having ischaemic heart disease at the time of the clinical worsening of heart block;
 - (35) having pulmonary thromboembolism within the 7 days before the clinical worsening of heart block;
 - (36) having infiltration of the myocardium due to an infiltrative disease from the specified list of infiltrative diseases at the time of the clinical worsening of heart block;
- Note: *specified list of infiltrative diseases* is defined in the Schedule 1 - Dictionary.
- (37) having cardiomyopathy at the time of the clinical worsening of heart block;
 - (38) having a benign or malignant neoplasm involving the heart before the clinical worsening of heart block;

Note: A neoplasm involving the heart can be primary or metastatic. An example of a primary neoplasm involving the heart is cardiac lymphoma.

- (39) having a lesion which compresses the atrioventricular node, bundle of His or the bundle branches of the heart at the time of the clinical worsening of heart block;

Note: Examples of lesions which can compress the atrioventricular node, bundle of His or the bundle branches of the heart include a paraoesophageal hiatus hernia, a thoracic aortic aneurysm and a haematoma.

- (40) having non-infectious myocarditis at the time of the clinical worsening of heart block;

Note 1: Non-infectious myocarditis can be acute or chronic.

Note 2: Non-infectious myocarditis can be of autoimmune, infiltrative or immunological origin. Examples of causes of non-infectious myocarditis include immune checkpoint inhibitor therapy and giant cell myocarditis.

- (41) having viral myocarditis at the time of the clinical worsening of heart block;

Note 1: Viral myocarditis can be acute or chronic.

Note 2: Examples of viral causes of myocarditis include severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), human immunodeficiency virus, group B coxsackieviruses and dengue virus.

- (42) having a non-viral infection of the myocardium at the time of the clinical worsening of heart block;

Note 1: A non-viral infection of the myocardium can be caused by bacteria, protozoa, fungi or parasites.

Note 2: Examples of non-viral infections of the myocardium include:

- (a) *Borrelia burgdorferi* (Lyme disease);
- (b) *Corynebacterium diphtheriae* (diphtheria);
- (c) *Cysticercus* species (cysticercosis);
- (d) *Echinococcus* species (hydatid disease);
- (e) *Treponema pallidum* (tertiary syphilis);
- (f) *Trypanosoma cruzi* (Chagas disease); and
- (g) *Toxoplasma gondii* (toxoplasmosis).

- (43) having infective endocarditis at the time of the clinical worsening of heart block;

- (44) having a mineral or electrolyte abnormality from the specified list of mineral or electrolyte abnormalities at the time of the clinical worsening of heart block;

Note: *specified list of mineral or electrolyte abnormalities* is defined in the Schedule 1 - Dictionary.

- (45) taking a drug from the specified list of drugs within the 3 weeks before the clinical worsening of heart block;

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

- (46) taking chloroquine or hydroxychloroquine for at least 1 year before the clinical worsening of heart block;

- (47) having ingested a plant containing cardiac glycosides within the 7 days before the clinical worsening of heart block;

Note: Examples of plants containing cardiac glycosides include the pong-pong tree (*Cerbera odollam*) and foxglove (*Digitalis purpurea*).

- (48) having acute pyrethroid poisoning after inhaling, ingesting or having cutaneous contact with a pyrethroid insecticide within the 3 days before the clinical worsening of heart block;

Note: Clinical features of acute pyrethroid poisoning may include dermal, neurological, gastrointestinal and respiratory symptoms. Cardiac involvement can lead to chest pain, tachycardia, hypertension, hypotension and arrhythmia.

- (49) experiencing penetrating trauma to the heart within the 1 year before the clinical worsening of heart block;

- (50) having a thoracic surgical procedure or an invasive cardiac procedure within the 1 year before the clinical worsening of heart block;

Note 1: Examples of thoracic surgical procedures include vascular, mediastinal, pulmonary and chest wall surgery.

Note 2: Examples of invasive cardiac procedures include:

- (a) alcohol septal ablation;
- (b) catheter ablation of arrhythmias;
- (c) open heart surgery; and
- (d) transcatheter aortic valve implantation.

- (51) experiencing a blunt chest injury within the 60 days before the clinical worsening of heart block;

Note: **blunt chest injury** is defined in the Schedule 1 - Dictionary.

- (52) having a heart transplant before the clinical worsening of heart block;

- (53) having a bone marrow transplant or stem cell transplant within the 24 hours before the clinical worsening of heart block;

- (54) having graft versus host disease after a bone marrow transplant or stem cell transplant at the time of the clinical worsening of heart block;

- (55) undergoing a course of therapeutic radiation for cancer, where the heart was in the field of radiation, before the clinical worsening of heart block;

- (56) undertaking strenuous physical activity greater than 6 METs for an average of at least 10 hours per week for a continuous period of at least the 5 years before the clinical worsening of heart block;

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

- (57) being envenomated by a scorpion or snake within the 24 hours before the clinical worsening of heart block;

- (58) having diabetes mellitus at the time of the clinical worsening of heart block;

- (59) having hypertension before the clinical worsening of heart block;
 - (60) having obstructive sleep apnoea at the time of the clinical worsening of heart block;
 - (61) having smoked cannabis products within the 7 days before the clinical worsening of heart block;
 - (62) binge drinking within the 2 days before the clinical worsening of heart block;
- Note: *binge drinking* is defined in the Schedule 1 - Dictionary.
- (63) having a thyroid condition from the specified list of thyroid conditions at the time of the clinical worsening of heart block;
- Note: *specified list of thyroid conditions* is defined in the Schedule 1 - Dictionary.
- (64) having an autoimmune disease from the specified list of autoimmune diseases at the time of the clinical worsening of heart block;
- Note: *specified list of autoimmune diseases* is defined in the Schedule 1 - Dictionary.
- (65) having acute rheumatic fever at the time of the clinical worsening of heart block;
 - (66) having rheumatic heart disease at the time of the clinical worsening of heart block;
 - (67) inability to obtain appropriate clinical management for heart block.

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(34) to 9(67) apply only to material contribution to, or aggravation of, heart block where the person's heart block 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:

binge drinking means consumption of large amounts of alcohol in a short space of time resulting in acute alcohol intoxication.

Note 1: Acute alcohol intoxication typically occurs when there is consumption of:

- (a) 4 or more standard alcoholic drinks by an adult female within a 2 hour time period; or
- (b) 5 or more standard alcoholic drinks by an adult male within a 2 hour time period; or
- (c) sufficient alcohol as would result in a blood alcohol concentration greater than 0.1 gram of alcohol per 100 millilitres of blood.

Note 2: Alcohol consumption is calculated utilising the Australian Standard of 10 grams of alcohol per standard alcoholic drink.

blunt chest injury means a non-penetrating blow to the chest.

Note: Examples of causes of blunt chest injury include a motor vehicle accident, a direct blow to the chest wall by airbag deployment, impact in contact sports, a fall from a height, a crush injury and being struck by a projectile.

heart block—see subsection 7(2).

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, or 1.0 kcal/kg of body weight per hour, or resting metabolic rate.

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

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 autoimmune diseases means:

- (a) ankylosing spondylitis;
- (b) Behcet disease;
- (c) granulomatosis with polyangiitis (Wegener granulomatosis);
- (d) inflammatory myopathy (polymyositis and dermatomyositis);
- (e) rheumatoid arthritis;
- (f) Sjögren syndrome;
- (g) spondyloarthritis;
- (h) systemic lupus erythematosus; or
- (i) systemic sclerosis (scleroderma).

Note: Spondyloarthritis includes reactive arthritis, psoriatic arthritis and inflammatory bowel disease-related spondyloarthritis.

specified list of drugs means:

- (a) acetylcholinesterase inhibitors including donepezil, galantamine, neostigmine and rivastigmine;
- (b) anthracycline chemotherapeutic agents including doxorubicin and daunorubicin;
- (c) antimony;
- (d) beta blockers;
- (e) carbamazepine;
- (f) cardiac glycosides including digoxin;
- (g) chloroquine or hydroxychloroquine;
- (h) class 1A, class 1C or class III anti-arrhythmic agents including procainamide, flecainide and amiodarone;
- (i) cough linctus containing squill;
- (j) dextropropoxyphene;
- (k) fingolimod;
- (l) immune checkpoint inhibitors;
- (m) infliximab;
- (n) interferons;
- (o) lacosamide;
- (p) lithium;
- (q) mefloquine;
- (r) non-dihydropyridine calcium channel blockers including diltiazem and verapamil;
- (s) opioids;
- (t) paliperidone;
- (u) paclitaxel;
- (v) quinine;
- (w) risperidone;
- (x) trastuzumab; or
- (y) trazodone.

specified list of infiltrative diseases means:

- (a) amyloidosis;
- (b) hereditary haemochromatosis; or
- (c) sarcoidosis.

specified list of mineral or electrolyte abnormalities means:

- (a) hypercalcaemia;
- (b) hyperkalaemia;
- (c) hypermagnesaemia;
- (d) hypokalaemia;
- (e) hypomagnesaemia; or
- (f) hyponatraemia.

specified list of thyroid conditions means:

- (a) hyperthyroidism, including goitre or Graves disease that has resulted in hyperthyroidism;
- (b) hypothyroidism, including Hashimoto thyroiditis that has resulted in hypothyroidism; or

(c) thyrotoxicosis.

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*.