



Australian Government
Repatriation Medical Authority

Statement of Principles
concerning
EXERTIONAL HEAT ILLNESS
(Reasonable Hypothesis)
(No. 31 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 *exertional heat illness (Reasonable Hypothesis)* (No. 31 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 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.

5 Definitions

The terms defined in the Schedule 1 - Dictionary have the meaning given when used in this instrument.

6 Kind of injury, disease or death to which this Statement of Principles relates

- (1) This Statement of Principles is about exertional heat illness and death from exertional heat illness.

Meaning of exertional heat illness

- (2) For the purposes of this Statement of Principles, exertional heat illness:
- (a) means an illness caused by an increase in body temperature that exceeds the body's ability to lose heat, due to exposure to physical activity in a setting of high environmental temperatures; and
 - (b) includes:
 - (i) heat exhaustion (also known as heat fatigue, heat intolerance and heat stress);
 - (ii) heat injury;
 - (iii) heat stroke; and
 - (iv) heat syncope; and
 - (c) excludes:
 - (i) drug hypersensitivity reactions;
 - (ii) exertional hyponatraemia;

- (iii) isolated exertional rhabdomyolysis (without evidence of heat-related illness);
- (iv) malignant hyperthermia associated with anaesthetic agents;
- (v) neuroleptic malignant syndrome;
- (vi) pyrogenic hyperthermia; and
- (vii) serotonin syndrome.

Note 1: Pyrogenic hyperthermia is an adaptive, physiologic response in which the hypothalamus increases the core body temperature set point. Common causes include infection, inflammation, trauma and cancer.

Note 2: *heat exhaustion*, *heat injury*, *heat stroke* and *heat syncope* are defined in the Schedule 1 - Dictionary.

- (3) While exertional heat illness attracts ICD-10-AM codes T67.0, T67.1, T67.2, T67.3, T67.4 or T67.5, in applying this Statement of Principles the meaning of exertional heat illness 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 exertional heat illness

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

Note: *terminal event* is defined in the Schedule 1 – Dictionary.

7 Basis for determining the factors

The Repatriation Medical Authority is of the view that there is sound medical-scientific evidence that indicates that exertional heat illness and death from exertional heat illness 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.

8 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 exertional heat illness or death from exertional heat illness with the circumstances of a person's relevant service:

- (1) undertaking physical activity at a minimum intensity of at least 3 METs in a hot environment at the time of the clinical onset of exertional heat illness;

Note 1: Exertional heat illness generally occurs at higher levels of physical activity and environmental heat. The likelihood of developing exertional heat illness can be increased in milder environmental temperatures in the presence of other contributing factors. These include prolonged activity, high humidity, lack of breezes, wearing heavy protective clothing or combat clothing, carrying heavy loads, poor physical fitness, lack of acclimatisation, being overweight or obese, and taking drugs which affect thermoregulation.

Note 2: *MET* is defined in the Schedule 1 - Dictionary.

- (2) inability to obtain appropriate clinical management for exertional heat illness.

9 Relationship to service

- (1) The existence in a person of any factor referred to in section 8, must be related to the relevant service rendered by the person.
- (2) The factor set out in subsection 8(2) applies only to material contribution to, or aggravation of, exertional heat illness where the person's exertional heat illness was suffered or contracted before or during (but did not arise out of) the person's relevant service.

10 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 8 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 5

1 Definitions

In this instrument:

exertional heat illness—see subsection 6(2).

heat exhaustion means tiredness or weakness due to an inability to maintain adequate cardiac output in a situation of strenuous physical activity in a hot environment.

Note: Typical symptoms and signs of heat exhaustion include an inability to continue activities, core body temperature elevation around 38.3 to 40.0°C, and mild neurologic and gastrointestinal symptoms.

heat injury means a multisystem, life-threatening illness characterised by end organ damage and a core body temperature that is usually above 40°C, but without any significant neurological manifestations.

Note: Typical clinical and laboratory signs of heat injury include metabolic acidosis, rhabdomyolysis, acute kidney injury and liver failure.

heat stroke means a multisystem, life-threatening illness characterised by central nervous system dysfunction and a core body temperature that is usually above 40°C.

Note: Typical symptoms and signs of heat stroke include disorientation, headache, irritability, emotional instability, confusion, altered consciousness, coma and seizure.

heat syncope means fainting after prolonged exposure to heat or exertion in a hot environment, where fainting is not better accounted for by cardiovascular, neurologic, metabolic or other causes.

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.

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*.