



Australian Government
Repatriation Medical Authority

Statement of Principles
concerning
PULMONARY BAROTRAUMA
(Reasonable Hypothesis)
(No. 64 of 2023)

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

Dated 23 June 2023.

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 *pulmonary barotrauma (Reasonable Hypothesis)* (No. 64 of 2023).

2 Commencement

This instrument commences on 25 July 2023.

3 Authority

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

4 Repeal

The Statement of Principles concerning pulmonary barotrauma No.15 of 2015 (Federal Register of Legislation No. F2014L01836) made under subsection 196B(2) of the VEA is repealed.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 pulmonary barotrauma and death from pulmonary barotrauma.

Meaning of pulmonary barotrauma

- (2) For the purposes of this Statement of Principles, pulmonary barotrauma:
- (a) means an acute lung injury arising from an abnormal pressure gradient across pulmonary tissues resulting in pulmonary haemorrhage from pulmonary compression, or air leakage into the pleural space (pneumothorax), the pericardial space (pneumopericardium), the peritoneal space (pneumoperitoneum), under the skin (subcutaneous emphysema) or into the blood (arterial gas embolism); and
 - (b) includes:
 - (i) iatrogenic pulmonary barotrauma;

- (ii) explosive blast injury;
 - (iii) pulmonary barotrauma due to forceful coughing, vomiting, forceful Valsalva or Muller manoeuvres;
 - (iv) pulmonary barotrauma of ascent;
 - (v) pulmonary barotrauma of descent also known as lung or thoracic squeeze; and
 - (vi) pulmonary barotrauma to abnormal pulmonary conditions such as bulla, blebs and cysts; and
- (c) excludes:
- (i) decompression sickness;
 - (ii) arterial gas embolism due to decompression sickness; and
 - (iii) pneumothorax, pneumopericardium, pneumoperitoneum, and arterial gas embolism due to non-pressure causes such as lung disease, and penetrating trauma including surgery.

Note: The Valsalva manoeuvre is exhaling against a closed glottis and the Muller manoeuvre is inhaling against a closed glottis. Examples of uses of the Valsalva manoeuvre include anti g straining manoeuvres, and straining during childbirth.

Death from pulmonary barotrauma

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

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 pulmonary barotrauma and death from pulmonary barotrauma 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 pulmonary barotrauma or death from pulmonary barotrauma with the circumstances of a person's relevant service:

- (1) experiencing an episode of rapid change in the ambient pressure exerted by an envelope of gas or water surrounding the person whilst:
 - (a) descending in an underwater dive;
 - (b) surfacing from an underwater dive;
 - (c) increasing in altitude whilst flying in an aircraft;

- (d) suffering loss of cabin pressure in an aircraft at altitude;
- (e) decompressing in a hypobaric chamber;
- (f) returning to surface air pressure after being in a hyperbaric chamber including hyperbaric oxygen therapy chambers;

within 24 hours before the clinical onset of pulmonary barotrauma;

- (2) receiving artificial ventilation at the time of the clinical onset of pulmonary barotrauma;

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

- (3) sustaining a blast injury involving the chest at the time of the clinical onset of pulmonary barotrauma;

- (4) smoking or inhaling cocaine or cannabis within 24 hours before the clinical onset of pulmonary barotrauma;

- (5) undertaking a Valsalva manoeuvre whilst:

- (a) forcefully vomiting;
- (b) forcefully coughing;
- (c) giving birth;
- (d) performing positive anti-g straining manoeuvre;
- (e) suffering intractable hiccups; or
- (f) weight lifting at a gym;

within 24 hours of the clinical onset of pulmonary barotrauma;

Note: The Valsalva manoeuvre is exhaling air against a closed glottis (airway).

- (6) inability to obtain appropriate clinical management for pulmonary barotrauma before the clinical worsening of pulmonary barotrauma.

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 factor set out in subsection 9(6) applies only to material contribution to, or aggravation of, pulmonary barotrauma where the person's pulmonary barotrauma 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:

artificial ventilation means a method to assist or replace spontaneous breathing, including mechanically-controlled ventilation, manually-assisted bag ventilation, expired air resuscitation, and CPAP therapy.

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

pulmonary barotrauma—see subsection 7(2).

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*.