



Australian Government
Repatriation Medical Authority

Statement of Principles concerning

EPILEPTIC SEIZURE

No. 77 of 2013

for the purposes of the

Veterans' Entitlements Act 1986
and
Military Rehabilitation and Compensation Act 2004

Title

1. This Instrument may be cited as Statement of Principles concerning epileptic seizure No. 77 of 2013.

Determination

2. The Repatriation Medical Authority under subsection **196B(2)** and **(8)** of the *Veterans' Entitlements Act 1986* (the VEA):
 - (a) revokes Instrument No. 47 of 2005, as amended by Instrument No. 37 of 2009, concerning epileptic seizure; and
 - (b) determines in their place this Statement of Principles.

Kind of injury, disease or death

3.
 - (a) This Statement of Principles is about **epileptic seizure** and **death from epileptic seizure**.
 - (b) For the purposes of this Statement of Principles, "**epileptic seizure**" means a transient occurrence of signs or symptoms due to abnormal, excessive and uncontrolled hypersynchronous electrical discharge from an aggregate of neurons in the brain that interferes with normal brain function. These signs and symptoms consist of sudden and transitory abnormal phenomena that may include alterations of consciousness, motor, sensory, autonomic, or psychic events, perceived by the subject

or an observer. This definition may include an episode of status epilepticus.

This definition excludes:

- (i) convulsions associated with syncope, vertigo or migraine;
- (ii) febrile seizure;
- (iii) hysterical seizure;
- (iv) infantile seizure;
- (v) movement disorders associated with sleep, including restless legs syndrome or periodic limb movement disorder;
- (vi) myoclonic convulsions associated with G-force induced loss of consciousness (G-LOC);
- (vii) neonatal seizure;
- (viii) psychogenic seizure; or
- (ix) seizures due to epilepsy.

Basis for determining the factors

4. The Repatriation Medical Authority is of the view that there is sound medical-scientific evidence that indicates that **epileptic seizure** and **death from epileptic seizure** 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 *Military Rehabilitation and Compensation Act 2004* (the MRCA).

Factors that must be related to service

5. Subject to clause 7, at least one of the factors set out in clause 6 must be related to the relevant service rendered by the person.

Factors

6. The factor that must as a minimum exist before it can be said that a reasonable hypothesis has been raised connecting **epileptic seizure** or **death from epileptic seizure** with the circumstances of a person's relevant service is:
 - (a) having a moderate to severe traumatic brain injury within the 20 years before the clinical onset of an epileptic seizure; or
 - (b) having concussion within the six months before the clinical onset of an epileptic seizure; or
 - (c) having a surgical procedure which involves a craniotomy within the 20 years before the clinical onset of an epileptic seizure; or
 - (d) having a cerebrovascular accident or subarachnoid haemorrhage within the 20 years before the clinical onset of an epileptic seizure; or
 - (e) having an hypoxic cerebral insult within the two months before the clinical onset of an epileptic seizure; or
 - (f) having central nervous system systemic lupus erythematosus at the time of the clinical onset of an epileptic seizure; or

- (g) having an autoimmune disorder affecting the brain at the time of the clinical onset of an epileptic seizure; or
- (h) having carbon monoxide poisoning within the two months before the clinical onset of an epileptic seizure; or
- (i) having an intracranial space-occupying lesion within the 20 years before the clinical onset of an epileptic seizure; or
- (j) having an infection of the brain or meninges within the one year before the clinical onset of an epileptic seizure; or
- (k) being infected with human immunodeficiency virus at the time of the clinical onset of an epileptic seizure; or
- (l) using a drug from Specified List 1 within the 24 hours before the clinical onset of an epileptic seizure, and where multiple seizures occur, the first seizure occurred within the 24 hours of using the drug; or
- (m) having dementia at the time of the clinical onset of an epileptic seizure; or
- (n) experiencing a specified physical stimulus immediately before the clinical onset of an epileptic seizure; or
- (o) having alcohol intoxication, alcohol withdrawal or a moderate to severe alcohol use disorder, including alcohol dependence, at the time of the clinical onset of an epileptic seizure; or
- (p) having an electrolyte imbalance at the time of the clinical onset of an epileptic seizure; or
- (q) having hypoglycaemia at the time of the clinical onset of an epileptic seizure; or
- (r) having non-ketotic hyperglycaemia at the time of the clinical onset of an epileptic seizure; or
- (s) having acute liver failure at the time of the clinical onset of an epileptic seizure; or
- (t) having:
 - (i) acute renal failure; or
 - (ii) chronic renal disease requiring renal transplantation or dialysis; at the time of the clinical onset of an epileptic seizure; or
- (u) undergoing renal dialysis at the time of the clinical onset of an epileptic seizure; or
- (v) undergoing a solid organ or stem cell transplantation within the three months before the clinical onset of an epileptic seizure; or
- (w) being treated with a drug or a drug from a class of drugs from the specified list, within the 24 hours before the clinical onset of an epileptic seizure, and where multiple seizures occur, the first seizure occurred within the 24 hours of being treated with the drug or the drug from the class of drugs; or

- (x) taking a drug which is associated in the individual with the development of an epileptic seizure within the 24 hours of first taking the drug, and the redevelopment of an epileptic seizure on rechallenge with the same drug; or
- (y) reducing the intake of, or withdrawing from, a chronically administered sedative drug within the two weeks before the clinical onset of an epileptic seizure; or
- (z) having malignant hypertension, hypertensive encephalopathy or eclampsia within the four weeks before the clinical onset of an epileptic seizure; or
- (aa) having a medical condition from the specified list affecting the brain at the time of the clinical onset of an epileptic seizure; or
- (bb) being exposed to partial pressures of oxygen above 1.2 atmospheres absolute (120 kPa) from:
 - (i) the use of closed or semi-closed rebreathing apparatus;
 - (ii) saturation diving;
 - (iii) receiving hyperbaric oxygen therapy; or
 - (iv) breathing oxygen enriched air during diving;
 within the 24 hours before the clinical onset of an epileptic seizure; or
- (cc) being exposed to an abrupt reduction in the pressure of the air surrounding the person, resulting in the development of pulmonary barotrauma, arterial gas embolism or decompression illness, within the 24 hours before the clinical onset of an epileptic seizure; or
- (dd) inhaling, ingesting or having cutaneous contact with a neurotoxic substance, or a food or compound containing a neurotoxic substance, within the 24 hours before the clinical onset of an epileptic seizure, and
 - (i) other signs and symptoms of poisoning are present; and
 - (ii) where multiple seizures occur, the first seizure occurred within the 24 hours of inhaling, ingesting or having cutaneous contact with the neurotoxic substance, or a food or compound containing the neurotoxic substance; or
- (ee) being poisoned with a specified metal, as demonstrated by clinical, haematological or biochemical evidence, at the time of the clinical onset of an epileptic seizure; or
- (ff) experiencing animal envenomation within the 24 hours before the clinical onset of an epileptic seizure; or
- (gg) inability to obtain appropriate clinical management for epileptic seizure.

Factors that apply only to material contribution or aggravation

7. Paragraph 6(gg) applies only to material contribution to, or aggravation of, epileptic seizure where the person's epileptic seizure was suffered or contracted before or during (but not arising out of) the person's relevant service.

Inclusion of Statements of Principles

8. In this Statement of Principles if a relevant factor applies and that factor includes an injury or disease in respect of which there is a Statement of Principles then the factors in that last mentioned Statement of Principles apply in accordance with the terms of that Statement of Principles as in force from time to time.

Other definitions

9. For the purposes of this Statement of Principles:

"a drug from Specified List 1" means:

- (a) an inhalant;
- (b) amphetamine and its derivatives, including methylenedioxymethamphetamine (MDMA);
- (c) cocaine;
- (d) ephedrine;
- (e) gamma hydroxybutyrate (GHB);
- (f) heroin;
- (g) methylphenidate;
- (h) phencyclidine; or
- (i) phenylpropanolamine;

"a drug or a drug from a class of drugs from the specified list" means:

- (a) anaesthetics (including ether, halothane, ketamine, methohexitone, propofol, althesin, cocaine, lignocaine, ropivacaine, tetracaine);
- (b) analgesics (including pethidine, dextropropoxyphene, meperidine, morphine, salicylate in overdose, tramadol, fentanyl opioids);
- (c) anti-arrhythmics (including disopyramide);
- (d) antibiotics (including penicillins, cephalosporins, carbapenems, quinolones, isoniazid);
- (e) anticonvulsants in overdose (including phenobarbitone, phenytoin, ethosuximide, carbamazepine, vigabatrin);
- (f) antidepressants (including imipramine, amitriptyline, clomipramine, maprotiline, mianserin, fluoxetine, venlafaxine, trimipramine, paroxetine, clozapine, bupropion, fluvoxamine, citalopram);
- (g) antifibrinolytic drug therapy (including tranexamic acid);
- (h) antihistamines;
- (i) antimalarials (including chloroquine, primaquine);
- (j) antineoplastic agents (including etoposide, ifosfamide, cisplatin, chlorambucil, busulfan);
- (k) antipsychotics (including chlorpromazine, lithium, clozapine, olanzapine, quetiapine);
- (l) anti-viral agents (including zidovudine, acyclovir);
- (m) bismuth in overdose;
- (n) cardiovascular agents (including beta blockers, mexiletine);
- (o) D-penicillamine;
- (p) immunomodulatory agents (including cyclosporin, interferon);
- (q) radiographic contrast media (including meglumine carbamate, meglumine iothalamate, metrizamide, iopamidol); or

- (r) smooth muscle relaxants (including theophylline and its derivatives, anti-cholinergic drugs);

"a medical condition from the specified list" means:

- (a) acute hepatic porphyria;
- (b) acute intermittent porphyria;
- (c) cerebral hyperperfusion syndrome;
- (d) Erdheim-Chester disease;
- (e) iron overload;
- (f) multiple sclerosis;
- (g) posterior reversible encephalopathy syndrome;
- (h) sarcoidosis;
- (i) sickle cell disease;
- (j) type 3 Gaucher disease;
- (k) Wegener's granulomatosis; or
- (l) Wilson's disease;

"a moderate to severe alcohol use disorder" means a psychiatric disorder characterised by a problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by at least four of the following criteria, occurring within a 12-month period:

- (a) alcohol is often taken in larger amounts or over a longer period than was intended;
- (b) there is a persistent desire or unsuccessful efforts to cut down or control alcohol use;
- (c) a great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects;
- (d) craving, or a strong desire or urge to use alcohol;
- (e) recurrent alcohol use resulting in a failure to fulfil major role obligations at work, school, or home;
- (f) continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol;
- (g) important social, occupational, or recreational activities are given up or reduced because of alcohol use;
- (h) recurrent alcohol use in situations in which it is physically hazardous;
- (i) alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol; or
- (j) tolerance, defined by either:
 - (i) a need for markedly increased amounts of alcohol to achieve intoxication or desired effect; or
 - (ii) a markedly diminished effect with continued use of the same amount of alcohol;

"a neurotoxic substance or a food or compound containing a neurotoxic substance" means:

- (a) camphor;
- (b) colloidal silver;
- (c) cyclotrimethylenetrinitramine (RDX);
- (d) domoic acid;

- (e) methylbromide;
- (f) N,N-diethyl-m-toluamide (DEET);
- (g) organochlorine insecticide;
- (h) organophosphates;
- (i) star fruit;
- (j) tetramine;
- (k) the traditional Chinese medicines: nux vomica, illicium henryi, betel nut and mulberry; or
- (l) any other epileptogenic neurotoxic compound;

"a specified metal" means:

- (a) lead;
- (b) nickel; or
- (c) tungsten;

"a specified physical stimulus" means a specified activity or physical process from the following list:

- (a) dehydration;
- (b) heat stroke;
- (c) sleep deprivation; or
- (d) strenuous exercise;

"acute renal failure" means a kidney disorder characterised by rapid decline of glomerular filtration rate and retention of nitrogenous waste products;

"alcohol intoxication" means recently consuming a quantity of alcohol such that the person exhibits the following behaviours and signs and symptoms:

- (a) clinically significant problematic behavioural or psychological changes (e.g., inappropriate sexual or aggressive behaviour, mood lability, impaired judgment) that developed during, or shortly after, alcohol ingestion;
- (b) one (or more) of the following signs or symptoms developing during, or shortly after, alcohol use:
 - (i) slurred speech;
 - (ii) incoordination;
 - (iii) unsteady gait;
 - (iv) nystagmus;
 - (v) impairment in attention or memory; or
 - (vi) stupor or coma; and
- (c) the signs or symptoms are not attributable to another medical condition and are not better explained by another mental disorder, including intoxication with another substance;

"alcohol withdrawal" means ceasing or reducing the intake of alcohol after a continuous period of at least two weeks of heavy alcohol use;

"an autoimmune disorder affecting the brain" means an autoimmune disorder with central nervous system involvement and includes paraneoplastic encephalitis, Hashimoto's encephalopathy and Behcet's disease;

"an electrolyte imbalance" means hyponatraemia, hypocalcaemia, hypercalcaemia, hypomagnesaemia or hypophosphataemia;

"an hypoxic cerebral insult" means an event which results in either a decreased rate of cerebral blood flow or decreased oxygen content of cerebral arterial blood for a sustained period;

"an inhalant" means a breathable chemical that produces psychoactive vapours and includes organic solvents, aerosols and some anaesthetics;

"an intracranial space-occupying lesion" means a pathological entity occupying a delineated area within the cranial cavity, including intracranial aneurysm, cerebral cyst, intracranial neoplasm or cerebral, subdural or extradural abscess;

"death from epileptic seizure" in relation to a person includes death from a terminal event or condition that was contributed to by the person's epileptic seizure;

"dementia" means:

- (a) Alzheimer-type dementia;
- (b) Creutzfeldt-Jakob disease;
- (c) dementia pugilistica;
- (d) dementia with Lewy bodies;
- (e) frontotemporal dementia;
- (f) Huntington's chorea;
- (g) Parkinson's disease with dementia;
- (h) vascular dementia; or
- (i) any other type of dementia;

"eclampsia" means a condition occurring in pregnant or puerperal women, characterised by hypertension, coma, convulsions, oedema or proteinuria;

"malignant hypertension" means a severe hypertensive state characterised by papilloedema of the ocular fundus, retinal haemorrhage and exudates, cardiac decompensation and declining renal function;

"RDX" means an explosive material, also known as cyclonite or hexogen, that is commonly a component of plastic explosives;

"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;

"sedative drug" means a psychoactive agent used therapeutically to suppress central nervous system activity, including barbiturates, benzodiazepines, anticonvulsants, sedatives and hypnotics;

"signs and symptoms of poisoning" means one of the following signs and symptoms which are not attributable to epileptic seizure:

- (a) behavioural impairments including loss of motor control and loss of consciousness;
- (b) blurred vision and eye irritation;

- (c) central nervous system excitation and depression, including agitation, lethargy and perceptual disturbances;
- (d) cough, acute lung injury and respiratory depression or failure;
- (e) dermatitis and skin irritation;
- (f) ear, nose and throat irritation and hypersalivation;
- (g) gastrointestinal symptoms, including nausea, diarrhoea and vomiting;
- or
- (h) neurocognitive deficits, including stupor, confusion and memory deficits;

"sleep deprivation" means having not slept within the 36 hours after the end of the last period of four hours or more of uninterrupted sleep, or having less than four hours sleep for three consecutive 24 hour periods;

"status epilepticus" means:

- (a) a single epileptic seizure of more than 30 minutes duration; or
- (b) a series of epileptic seizures occurring over a period of more than 30 minutes, without a return to consciousness between seizures;

"terminal event" means the proximate or ultimate cause of death and includes:

- (a) pneumonia;
- (b) respiratory failure;
- (c) cardiac arrest;
- (d) circulatory failure; or
- (e) cessation of brain function.

Application

- 10. This Instrument applies to all matters to which section 120A of the VEA or section 338 of the MRCA applies.

Date of effect

- 11. This Instrument takes effect from 13 November 2013.

Dated this *first* day of *November* 2013

The Common Seal of the)
 Repatriation Medical Authority)
 was affixed to this instrument)
 in the presence of:)

PROFESSOR NICHOLAS SAUNDERS AO
 CHAIRPERSON