



Australian Government
Repatriation Medical Authority

Statement of Principles
concerning
PARKINSON'S DISEASE AND SECONDARY
PARKINSONISM
(Balance of Probabilities)
(No. 56 of 2016)

The Repatriation Medical Authority determines the following Statement of Principles under subsection 196B(3) of the *Veterans' Entitlements Act 1986*.

Dated 22 April 2016

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 *Parkinson's disease and secondary parkinsonism (Balance of Probabilities)* (No. 56 of 2016).

2 Commencement

This instrument commences on 23 May 2016.

3 Authority

This instrument is made under subsection 196B(3) of the *Veterans' Entitlements Act 1986*.

4 Revocation

The Statement of Principles concerning Parkinson's disease and parkinsonism No. 66 of 2007 made under subsection 196B(3) of the VEA is revoked.

5 Application

This instrument applies to a claim to which section 120B of the VEA or section 339 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 Parkinson's disease and secondary parkinsonism and death from Parkinson's disease and secondary parkinsonism.

Meaning of Parkinson's disease

- (2) For the purposes of this Statement of Principles, Parkinson's disease means a neurodegenerative disease involving the progressive failure of dopaminergic transmission in the nigrostriatal system of the basal ganglia, which:
 - (a) is characterised clinically by:
 - (i) the presence of bradykinesia, muscular rigidity, a resting tremor and postural instability;
 - (ii) symptoms which may gradually progress;
 - (iii) a sustained response to therapy with levodopa; and

- (iv) non-motor symptoms including sleep, mood and autonomic disturbances; and
- (b) is characterised pathologically by the degeneration of dopaminergic neurons in the substantia nigra pars compacta and the presence of alpha-synuclein-associated Lewy bodies or Lewy neurite intracellular inclusions at widespread locations in the central and peripheral nervous system; and
- (c) excludes secondary parkinsonism, parkinsonism in other primary neurodegenerative diseases and Parkinson plus diseases including dementia with Lewy bodies, multiple system atrophy, progressive supranuclear palsy, frontotemporal dementia and corticobasal degeneration.

Meaning of secondary parkinsonism

- (3) For the purposes of this Statement of Principles, secondary parkinsonism means an acquired movement disorder caused by exogenous factors that interfere with dopaminergic transmission in the nigrostriatal system of the basal ganglia, which:
 - (a) is characterised clinically by the presence of bradykinesia, muscular rigidity, a resting tremor and postural instability; and
 - (b) excludes Parkinson's disease, dementia pugilistica, non-parkinsonian tremors such as benign essential tremor, psychogenic parkinsonism, parkinsonism in primary neurodegenerative diseases and Parkinson plus diseases including dementia with Lewy bodies, multiple system atrophy, progressive supranuclear palsy, frontotemporal dementia and corticobasal degeneration.

Death from Parkinson's disease and secondary parkinsonism

- (4) For the purposes of this Statement of Principles, Parkinson's disease or secondary parkinsonism, in relation to a person, includes death from a terminal event or condition that was contributed to by the person's Parkinson's disease or secondary parkinsonism.

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

8 Basis for determining the factors

On the sound medical-scientific evidence available, the Repatriation Medical Authority is of the view that it is more probable than not that Parkinson's disease or secondary parkinsonism and death from Parkinson's disease or secondary parkinsonism can be related to relevant service rendered by veterans or members of the Forces under the VEA, or members under the MRCA.

Note: *relevant service* is defined in the Schedule 1 – Dictionary.

9 Factors that must exist

At least one of the following factors must exist before it can be said that, on the balance of probabilities, Parkinson's disease or secondary parkinsonism or death from Parkinson's disease or secondary parkinsonism is connected with the circumstances of a person's relevant service:

- (1) for Parkinson's disease only, in a person with a history of a regular smoking habit as specified, having not smoked for at least the five years before the clinical onset of Parkinson's disease;

Note: *regular smoking habit as specified* is defined in the Schedule 1 - Dictionary.

- (2) for secondary parkinsonism only:

- (a) having an episode of acute cholinergic poisoning from exposure to an organophosphorus ester within the six weeks before the clinical onset of secondary parkinsonism;

Note: *acute cholinergic poisoning* and *organophosphorus ester* are defined in the Schedule 1 - Dictionary.

- (b) having moderate to severe traumatic brain injury within the six months before the clinical onset of secondary parkinsonism;
- (c) having an intracranial space occupying lesion within the six weeks before the clinical onset of secondary parkinsonism;
- (d) having hydrocephalus, or draining of hydrocephalus, within the six weeks before the clinical onset of secondary parkinsonism;

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

- (e) having a cerebrovascular accident, excluding transient ischaemic attack, within the two years before the clinical onset of secondary parkinsonism;
- (f) having a disease from the specified list of diseases involving the cerebral vessels, in the presence of neuroimaging findings of brain stem or cerebral white matter lesions, haemorrhage or infarction, at the time of the clinical onset of secondary parkinsonism;

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

- (g) having a subarachnoid haemorrhage within the six weeks before the clinical onset of secondary parkinsonism;
- (h) having an acquired cerebrovascular malformation or dural arteriovenous fistula at the time of the clinical onset of secondary parkinsonism;

- (i) having an hypoxic cerebral insult within the one year before the clinical onset of secondary parkinsonism;

Note: *hypoxic cerebral insult* is defined in the Schedule 1 - Dictionary.

- (j) having encephalitis within the six weeks before the clinical onset of secondary parkinsonism;

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

- (k) being infected with the human immunodeficiency virus before the clinical onset of secondary parkinsonism;

- (l) having neurosyphilis at the time of the clinical onset of secondary parkinsonism;

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

- (m) having neurocysticercosis at the time of the clinical onset of secondary parkinsonism;

- (n) inhaling carbon disulphide vapour in an enclosed space, or having cutaneous contact with carbon disulphide, for a cumulative period of at least 500 hours, within the ten years before the clinical onset of secondary parkinsonism;

- (o) inhaling or ingesting methanol or ethylene glycol, and having clinical, haematological or biochemical evidence of methanol or ethylene glycol intoxication, within the six weeks before the clinical onset of secondary parkinsonism;

- (p) being exposed to manganese as specified for a cumulative period of at least 500 hours, within the ten years before the clinical onset of secondary parkinsonism;

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

- (q) having clinical or biochemical evidence of manganese intoxication while receiving total parenteral nutrition or maintenance haemodialysis, at the time of the clinical onset of secondary parkinsonism;

Note: *total parenteral nutrition* is defined in the Schedule 1 - Dictionary.

- (r) inhaling, ingesting or having cutaneous contact with cyanide, and having clinical, haematological or biochemical evidence of cyanide intoxication, within the six weeks before the clinical onset of secondary parkinsonism;

- (s) having an injection containing 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) within the six weeks before the clinical onset of secondary parkinsonism;

- (t) using the drug methcathinone (ephedrone) within the six weeks before the clinical onset of secondary parkinsonism;
- (u) taking a drug or a drug from a class of drugs from the specified list of drugs, for a continuous period of at least 14 days within the six weeks before the clinical onset of secondary parkinsonism;

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

- (v) having a disorder of calcium metabolism from the specified list of disorders of calcium metabolism at the time of the clinical onset of secondary parkinsonism;

Note: *specified list of disorders of calcium metabolism* is defined in the Schedule 1 - Dictionary.

- (w) having cirrhosis of the liver at the time of the clinical onset of secondary parkinsonism;
- (x) having chronic renal failure due to diabetes mellitus at the time of the clinical onset of secondary parkinsonism;

Note: *chronic renal failure* is defined in the Schedule 1 - Dictionary.

- (y) having a disease from the specified list of autoimmune diseases at the time of the clinical onset of secondary parkinsonism; or

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

- (z) having a paraneoplastic encephalomyelitis at the time of the clinical onset of secondary parkinsonism;

- (3) having an episode of acute cholinergic poisoning from exposure to an organophosphorus ester within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

Note: *acute cholinergic poisoning* and *organophosphorus ester* are defined in the Schedule 1 - Dictionary.

- (4) having moderate to severe traumatic brain injury within the six months before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (5) having an intracranial space occupying lesion within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (6) having hydrocephalus, or draining of hydrocephalus, within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

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

- (7) having a cerebrovascular accident, excluding transient ischaemic attack, within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (8) having a disease from the specified list of diseases involving the cerebral vessels, in the presence of neuroimaging findings of brain stem or cerebral white matter lesions, haemorrhage or infarction, at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;
- Note: *specified list of diseases involving the cerebral vessels* is defined in the Schedule 1 - Dictionary.
- (9) having a subarachnoid haemorrhage within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (10) having an acquired cerebrovascular malformation or dural arteriovenous fistula at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (11) having an hypoxic cerebral insult within the one year before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- Note: *hypoxic cerebral insult* is defined in the Schedule 1 - Dictionary.
- (12) having encephalitis within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- Note: *encephalitis* is defined in the Schedule 1 - Dictionary.
- (13) being infected with the human immunodeficiency virus before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (14) having neurosyphilis at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;
- Note: *neurosyphilis* is defined in the Schedule 1 - Dictionary.
- (15) having neurocysticercosis at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (16) inhaling carbon disulphide vapour in an enclosed space, or having cutaneous contact with carbon disulphide, for a cumulative period of at least 500 hours, within the ten years before the clinical worsening of Parkinson's disease or secondary parkinsonism;
- (17) inhaling or ingesting methanol or ethylene glycol, and having clinical, haematological or biochemical evidence of methanol or ethylene glycol intoxication, within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

- (18) being exposed to manganese as specified for a cumulative period of at least 500 hours, within the ten years before the clinical worsening of Parkinson's disease or secondary parkinsonism;

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

- (19) having clinical or biochemical evidence of manganese intoxication while receiving total parenteral nutrition or maintenance haemodialysis, at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;

Note: *total parenteral nutrition* is defined in the Schedule 1 - Dictionary.

- (20) inhaling, ingesting or having cutaneous contact with cyanide, and having clinical, haematological or biochemical evidence of cyanide intoxication, within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

- (21) having an injection containing 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

- (22) using the drug methcathinone (ephedrone) within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

- (23) taking a drug or a drug from a class of drugs from the specified list of drugs, for a continuous period of at least 14 days within the six weeks before the clinical worsening of Parkinson's disease or secondary parkinsonism;

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

- (24) having a disorder of calcium metabolism from the specified list of disorders of calcium metabolism at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;

Note: *specified list of disorders of calcium metabolism* is defined in the Schedule 1 - Dictionary.

- (25) having cirrhosis of the liver at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;

- (26) having chronic renal failure due to diabetes mellitus at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;

Note: *chronic renal failure* is defined in the Schedule 1 - Dictionary.

- (27) having a disease from the specified list of autoimmune diseases at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;

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

- (28) having a paraneoplastic encephalomyelitis at the time of the clinical worsening of Parkinson's disease or secondary parkinsonism;
 - (29) in a person with a history of a regular smoking habit as specified, having not smoked within the ten years before the clinical worsening of Parkinson's disease and secondary parkinsonism;
- Note: *regular smoking habit as specified* is defined in the Schedule 1 - Dictionary.
- (30) inability to obtain appropriate clinical management for Parkinson's disease or secondary parkinsonism.

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(3) to 9(30) apply only to material contribution to, or aggravation of, Parkinson's disease and secondary parkinsonism where the person's Parkinson's disease and secondary parkinsonism 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(3) 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:

acute cholinergic poisoning means symptoms and signs due to the inhibition of acetylcholinesterase enzyme activity which occur within the 24 hours following exposure. These symptoms and signs are acute paralysis, overwhelming bronchial secretions, bradycardia, gastrointestinal distress, miosis, lacrimation or diarrhoea.

being exposed to manganese as specified means:

- (a) working in the mining or smelting of ores containing manganese; or
- (b) welding with rods containing manganese; or
- (c) inhaling dust containing manganese.

chronic renal failure means:

- (a) having a glomerular filtration rate of less than 15 mL/min/1.73 m² for a period of at least three months; or
- (b) a need for renal replacement therapy (dialysis or transplantation) for treatment of complications of decreased glomerular filtration rate which would otherwise increase the risk of morbidity and mortality; or
- (c) undergoing chronic dialysis.

encephalitis means a viral, bacterial or protozoal infection of the brain parenchyma, manifested clinically by acute febrile illness, confusion, behavioural abnormalities, altered level of consciousness, and focal or generalised epileptic seizures, or demonstrated by neuroimaging or laboratory studies.

hydrocephalus means a condition characterised by dilation of the cerebral ventricles and accompanied by accumulation of excess cerebrospinal fluid within the skull. This definition includes obstructive and non-obstructive hydrocephalus, idiopathic normal pressure hydrocephalus or traumatic hydrocephalus.

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.

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

neurosyphilis means infection of the central nervous system with *Treponema pallidum*.

organophosphorus ester means an agent used to inhibit acetylcholinesterase, and includes the organophosphate pesticides chlorpyrifos, dichlorvos, EPN, leptophos, methamidophos, mipafox

(diisopropyl phosphorofluoridate), omethoate, parathion, TOCP (tri-ortho-cresyl phosphate), trichlorfon and trichlornat.

Parkinson's disease—see subsection 7(2).

regular smoking habit as specified means having smoked at least three pack-years of cigarettes or the equivalent thereof in other tobacco products.

relevant service means:

- (a) eligible war service (other than operational service) under the VEA;
- (b) defence service (other than hazardous service and British nuclear test defence service) under the VEA; or
- (c) peacetime service under the MRCA.

secondary parkinsonism—see subsection 7(3).

specified list of autoimmune diseases means:

- (a) antiphospholipid syndrome;
- (b) Behçet's disease;
- (c) Sjogren's syndrome; or
- (d) systemic lupus erythematosus.

specified list of diseases involving the cerebral vessels means:

- (a) Binswanger's disease;
- (b) cerebral amyloidosis;
- (c) cerebral arteriolosclerosis (fibrinoid necrosis, lipohyalinosis, microatheroma microaneurysms, segmental arterial disorganisation);
- (d) cerebral venous thrombosis;
- (e) hippocampal sclerosis;
- (f) inflammatory or immunologically mediated vasculitis;
- (g) intravascular lymphomatosis;
- (h) laminar cortical necrosis; or
- (i) Moyamoya disease.

specified list of disorders of calcium metabolism means:

- (a) Fahr's disease;
- (b) hyperparathyroidism;
- (c) hypoparathyroidism; or
- (d) pseudohypoparathyroidism.

specified list of drugs means:

- (a) 5-fluorouracil;
- (b) alizapride;
- (c) alpha-methyldopa;
- (d) amiodarone;
- (e) amlodipine;
- (f) amoxapine;
- (g) amphotericin B;
- (h) antipsychotic drug;
- (i) aprindine;

- (j) bethanechol (intraspinal or intracranial);
- (k) bupropion;
- (l) buspirone;
- (m) butyrophenones;
- (n) captopril;
- (o) chloroquine;
- (p) cimetidine;
- (q) cinnarizine;
- (r) cisapride;
- (s) clebopride;
- (t) clopamide-pindolol combination;
- (u) cyclophosphamide;
- (v) cyclosporine;
- (w) cytosine arabinoside;
- (x) diltiazem;
- (y) disulfiram;
- (z) domperidone;
- (aa) doxorubicin;
- (bb) droperidol;
- (cc) flunarizine;
- (dd) indeloxazine;
- (ee) itopride;
- (ff) lithium;
- (gg) lorazepam;
- (hh) methotrexate;
- (ii) metoclopramide;
- (jj) metopimazine;
- (kk) molindone;
- (ll) naproxen;
- (mm) phenothiazine;
- (nn) phenylamine;
- (oo) phenytoin;
- (pp) pimozide;
- (qq) propiverine;
- (rr) pyridostigmine;
- (ss) reserpine;
- (tt) sodium valproate (valproic acid);
- (uu) tacrolimus;
- (vv) tetrabenazine;
- (ww) thiethylperazine;
- (xx) thioxanthenes;
- (yy) tiapride;
- (zz) trimetazidine;
- (aaa) veralipride;
- (bbb) verapamil; or
- (ccc) vincristine plus Adriamycin.

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.

total parenteral nutrition means continuous intravenous drip feeding with no feeding via mouth or gut.

VEA means the *Veterans' Entitlements Act 1986*.