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OIA-2024-5203

12th December 2024

[redacted]
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Dear [redacted]

I refer to your email of 15 November 2024 requesting the following information on Defence Health Directive 23/003, under the Official Information Act 1982 (OIA):

> *By way of OIA, could NZDF please provide a copy of the update and copies of all information considered by Colonel Tate in developing the update.*

A copy the Defence Health Directive 23/003 Medical Management Of Brain Health Hazards In Military Activity version 2.00 is enclosed. Information considered in developing this update was provided in the enclosure from the response provided to you on 18 November 2024.

Health Directives are reviewed annually. The Surgeon General considered her cumulative knowledge drawn from: extensive clinical experience in operational and non-operational environments; professional development; engagements with senior global health leaders from military and public-sector healthcare; and, constant clinical research targeting better patient outcomes when updating this Directive.

You have the right, under section 28(3) of the OIA, to askan Ombudsman to review this response to your request. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Please note that responses to official information requests are proactively released where possible. This response to your request will be published shortly on the NZDF website, with your personal information removed.

Yours sincerely

GA Motley
Brigadier
Chief of Staff HQNZDF

Enclosure:

1. Defence Health Directive: 23/003 – Medical Management of Brain Health Hazards in Military Activity: Version 02

Defence Health Directorate

04 September 2024

DEFENCE HEALTH DIRECTIVE: 23/003

MEDICAL MANAGEMENT OF BRAIN HEALTH HAZARDS IN MILITARY ACTIVITY, Version 2.00

References

A. DFO(A), Vol 7, Book 3, Chapter 04, Section 04, Annex D *Safety Guidelines – Blast Overpressure Exposure.*

Authority

1. This Health Directive is authorised by Colonel CM Tate, Surgeon General.

Purpose

2. The purpose of this Health Directive is to direct the medical management of brain health in military activity associated with military weapons system hazards.

Scope

3. This Health Directive applies to all New Zealand Defence Force (NZDF) personnel and to NZDF healthcare professionals (Defence Health and those under the technical control of the Surgeon General).

Context and overview

4. There are a number of military weapons system hazards that have been shown to potentially have a deleterious cognitive health effect on some people if exposure is not mitigated. Known brain health hazards include blast overpressure, whole body vibration/weapons recoil, noise and toxic muzzle gas. Exposure to these hazards can present symptoms similar to direct force concussion in some operators, particularly after repeated exposures to activities, such as firing high-calibre weapons and training with repeated low-level blasts such as that used in explosive methods of entry.

5. Regular calibre weapons systems (such as standard issue small arms) and explosives with significant stand-off, such as demolitions, claymores and grenade throws, do not trigger the same mechanism and, when conducted under standard training conditions, are not known to contribute to health hazards of this nature. However, any person presenting with cognitive symptoms with onset after specific military activities should be assessed for any link between symptom onset and activity hazards.

6. Frequent (cumulative) exposure to hazards can be expected to increase the risk of cognitive health effects. Safety guidelines and safety in training policy for military weapons systems are designed to minimise an individual's exposure to hazards in order to mitigate this risk. This includes both students and instructing staff, the latter being at risk of more frequent exposure (due to multiple serials during a training session and multiple training sessions annually).

7. Significant hazards to brain health can exist in non-weapons system duties and in non-military activities. These hazards, such as direct trauma from blunt force injuries in sports or other activities, can contribute to the cumulative effect if subsequent weapon system exposure without precautions occurs.

Mitigation of harmful exposure hazards

8. Safety standards for current military weapons systems should mitigate harmful exposure hazards through the use of military weapons system mitigations, such as—

   a. limiting the frequency of exposure;

   b. increasing stand off from blast effects;

   c. using effective personal protective equipment; and

   d. educating operators.

9. It is expected that cognitive effects on operators will not be common if these effective mitigations are in place.

Required restrictions for affected individuals

10. Given that the primary organ effected by military weapons systems hazards is the brain, safety standards dictate that there should be no additional 'insults' or toxic exposures to the brain during a period of weapons training. The following activities are to be avoided 24 hours prior to and 48 hours after high-calibre weapons training—

    a. Contact sports.

    b. Consumption of alcohol or other substances that have a detrimental effect on cognitive ability.

    c. Activities known to cause fatigue (eg sleep deprivation, intensive additional physical training sessions).

11. After a diagnosed concussion or traumatic brain injury (TBI) from any other activity (eg a sports injury), the affected individual is not to conduct weapons training with known cognitive hazards for a minimum of one week. They will then require medical clearance to continue training, as per the current 'return to play' sports concussion guidelines.

12. Cognitive stressors are often cumulative through life, and when individuals have had other brain insults, such as concussions from blunt force trauma with a period of persistent symptoms or vulnerabilities related to mood disorders, a lower threshold for restricting ongoing participation in military training or activities that may present further cognitive hazard should be considered.

Monitoring for and reporting of health problems

13. Defence Health are not aware of when an individual has been exposed to military weapons system hazards. As such, Single Service Safety Authorities, command/management of individuals, or individuals themselves (can also be in conjunction with the Directorate of Safety) are responsible for notifying Defence Health where an individual has been exposed to military weapons system hazards (ongoing or accidental exposures).

14. When informed, Defence Health elements are to conduct individual cognitive health monitoring of the relevant exposure to military weapons system hazards as set out in this Health Directive.

Medical boards

15. Personnel who regularly operate military weapons systems with high-calibre weapons, or participate in explosive breaching, are to notify NZDF health personnel of this trade occupation at their regular scheduled occupational medical board so that they can be routinely assessed for any health problems related to this activity.

16. Medical practitioners should ask all personnel about any potential cognitive hazards of their occupation during routine medical boards in order to accurately assess and manage the health of NZDF personnel in the context of their trade, occupation and exposures to hazards.

Assessment and management of affected individuals

17. While the mechanism of weapons training stress on the brain is different to that of a blunt force concussion such as that seen in contact sports, the symptom reporting is similar, and hence assessment and management of weapons training-related brain injury should be aligned with current sports concussion guidelines. Notably, its symptoms are often more subtle, presenting at a level that does not reach a standard threshold for 'injury'. Evidence shows that symptoms resolve after a period of rest and a break from ongoing exposure to the weapons system. In personnel presenting with sub-clinical symptoms, ongoing monitoring should ensure that these symptoms resolve after rest and do not recur with ongoing training.

18. There is no single diagnostic test to prove that a cognitive injury has occurred, and a diagnosis of injury related to weapons training or military activities can be made only after careful assessment by a medical practitioner. Research is ongoing to find accurate objective measures of adverse clinical effects. Until such time as appropriate measures are identified, the key tools by which to assess and monitor an operator's health status will be subjective symptom questionnaires and clinical assessment in accordance with concussion guidelines.

19. Where Single Service Safety Authorities, Directorate of Safety, command/management of individuals, or individuals have identified a potential hazard associated with the use of a military weapons system, a symptom checklist, such as the example checklist in Table 1 (originally from DFO (A) Vol 7) may be utilised. Table 1 is a *Weapons System Post Activity Self Questionnaire* that is to be completed by individuals when they are exposed to unmitigated or frequent training activities or if they develop symptoms within 24 hours of an exposure activity. Any reported symptoms will prompt a medic assessment, and those with persisting symptoms or concerns need to be referred to a medical practitioner for assessment. Medics should use the 'Mild Traumatic Brain

Injury' clinical practice guideline (CPG) in the *Defence Medical Treatment Protocols* (DMTPs) as their assessment and management guidelines.

20. The general management of patients who present with cognitive symptoms following military activities should focus on careful assessment of cognition, exclusion of differential diagnoses (such as organic brain pathology, mood disorders, obstructive sleep apnoea or infectious causes), assessment and management of any persisting cognitive effects after rest from exposure, promoting recovery and avoiding further harm.

21. Loss of consciousness, severe headache, obvious disorientation or confusion while participating in military training requires prompt removal from the training and rapid professional medical assessment and management in accordance with clinical guidelines.

22. Personnel who have reported cognitive symptoms are not to return to military weapons system training until they are symptom free on exertion and medically cleared by a medical practitioner.

23. It is likely that some vulnerable individuals will experience symptoms at lower levels and rates of exposure. If an individual reports cognitive symptoms after two or more separate weapons training serials, they require a medical review and consideration of individual vulnerability and appropriateness of ongoing activity participation. Personnel with persistent deleterious cognitive effects that persist after 4 weeks of rest from exposure and/or whose symptoms are clearly either provoked or exacerbated by military activity will need to be assessed for appropriate grading and potential permanent restrictions on activities.

Patient record

24. Established cognitive health effects related to military weapons system activity are to be given the diagnostic code 'Concussion—military weapons system related' in Profile.

Quality assurance

25. An annual check is to be completed by the Defence Health Directorate on the above diagnostic code in order to look for occurrences of deleterious cognitive health effect related to military weapons system activity in the NZDF.

Cancellation and disposal instructions

26. The Content Owner for this Health Directive is the Surgeon General.

27. The withdrawal date for this Health Directive is 04 September 2025.

SIGNED ON ORIGINAL

CM TATE
Colonel
Surgeon General

Table 1: Weapons System Post Activity Self Questionnaire

Current Date _____ **Current Time** _____

Time of Training Serial _____ **Date of Training Serial** _____

Since your last exposure to weapons systems, are you experiencing any of the following symptoms?

Using the following scale, answer the questions below by circling the number that most closely represents your experience:

0 = not experienced at all

1 = no more of a problem then before training started

2 = a mild problem – present but I don't really notice, and it doesn't concern me

3 = a moderate problem – I can continue what I am doing, but I notice the problem*

4 = a severe problem – constantly present and feels like it could affect my performance

Headaches*	0	1	2	3	4
Feelings of dizziness*	0	1	2	3	4
Nausea and/or vomiting*	0	1	2	3	4
Noise sensitivity					
Easily upset by loud noise	0	1	2	3	4
Sleep disturbance	0	1	2	3	4
Fatigue, tiring more easily	0	1	2	3	4
Being irritable or easily angered	0	1	2	3	4
Feeling depressed or tearful/sad	0	1	2	3	4
Feeling frustrated or impatient	0	1	2	3	4
Feeling anxious or tense	0	1	2	3	4
Forgetfulness, poor memory	0	1	2	3	4
Poor concentration*	0	1	2	3	4
Taking longer to think*	0	1	2	3	4
Blurred vision	0	1	2	3	4
Light Sensitivity					
Easily upset by bright lights	0	1	2	3	4
Double vision	0	1	2	3	4
Restlessness	0	1	2	3	4
Are you experiencing any other difficulties?					
1. _____	0	1	2	3	4
2. _____	0	1	2	3	4

- If a person scores 3 or more on any single question on the questionnaire, they are to be assessed by medical personnel.
- Personnel who have reported more than two symptoms, at least one of which is headache, dizziness, nausea, poor concentration or taking longer to think (marked by bold text and an * in the questionnaire), are not to return to weapons training until symptom free on exertion and medically cleared by a doctor.