Repetitive Low-Level Blast Overpressure Exposure and Warfighter Brain Health Readiness in Australian Special Forces

Paul Scanlan, MBA, MStratStud[1] · [1]Vigil Australia. Independent, self-funded, no fee for service.

MHSRS-26-2332
Sustaining Brain Health Readiness against Emerging Threats in the Operational Environment
Gaylord Palms, Kissimmee FL · 3–6 August 2026

KEY FINDING

Only 7 of 182 reported loss of consciousness. They reported a mean of 12.4 symptoms each.

A model that relies on loss of consciousness will **miss most symptomatic personnel**. Median blast overpressure exposure ran **13.5 years**, across a broad range of weapon systems, many routinely used in training.

182
respondents, Australian SOF community

7 (3.8%)
reported ever losing consciousness

100%
reported at least one symptom

13.5 yr
median years of blast overpressure exposure

INTRODUCTION

Single-event concussion is well characterised. **Cumulative career blast load in allied cohorts outside the United States is poorly characterised.**

Concussion pathways are built around one event and a loss of consciousness. If that is the trigger for assessment, **repetitive exposure without an overt marker is invisible to the system.**

The Royal Commission into Defence and Veteran Suicide (Recommendation 61) directed Defence and DVA to establish a brain injury program for repetitive low-level blast.

METHODS

Design

Cross-sectional, anonymous, self-selected internet survey (BRIDGES). Collection May to December 2024. Self-report; no clinical validation.

Participants

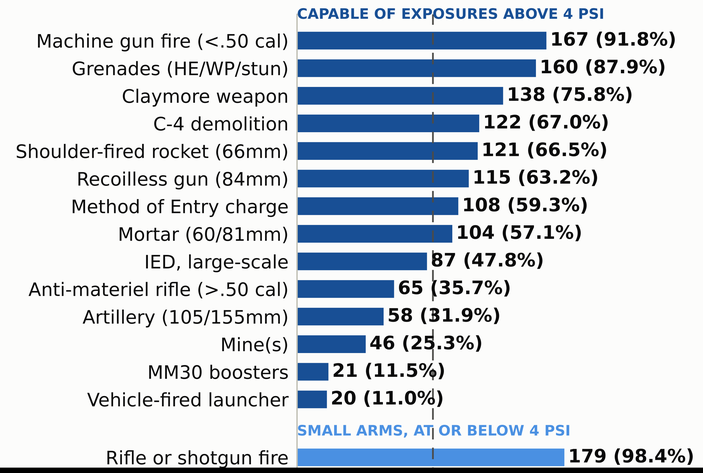
Adults in, or connected to, the Australian SOF community, recruited via SOF-affiliated networks.

Human participant protection

Conducted under the Emory University-approved SOF Care Quality Improvement Survey. Anonymous; no

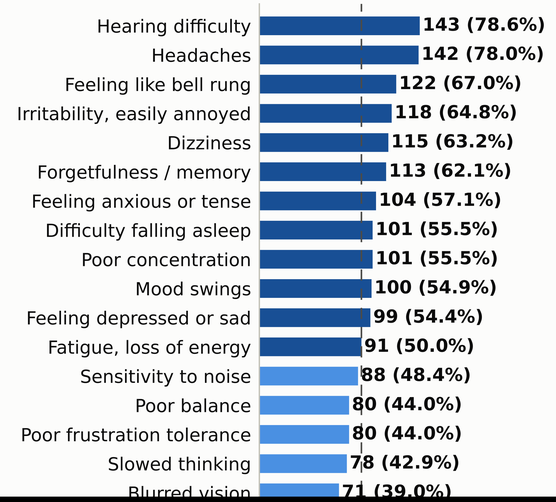
WHERE THE DOSE COMES FROM

It was never one blast. It was the ledger. The ledger is dominated by weapon systems routinely used in training, which makes the exposure potentially predictable and countable.



WHAT THEY'RE FEELING

Twelve of the 29 symptoms were reported by at least half the cohort, and 21 by at least a third. Loss of consciousness by seven.



BARRIERS TO CARE

The top three are about the clinician, not the injury.

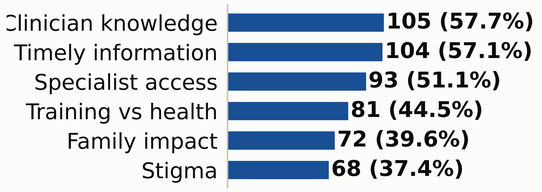


Figure 3. Count and % of 182 (select four). Full wording: medical knowledge deficits; timely blast/mTBI information; no access to clinicians who understand blast; balancing training and health; effects on family; stigma. Four further options not shown.

PRIORITIES

Asked which domains to address first, the community put **suicidality above every physical domain**: suicidal thoughts & behaviours **399**, depressed mood 364, chronic brain changes 353, attention / executive 328.

Weighted score, **not a count of people**: #1 = 4 points, #2 three, #3 two, #4 one; maximum 728. Suicidality was ranked #1 by 78 of the 118 who chose it.

CONCLUSIONS