

WHAT YOU SHOULD KNOW ABOUT BLAST OVERPRESSURE

Service Member Fact Sheet | Traumatic Brain Injury Center of Excellence

WHAT IS BLAST OVERPRESSURE?

Blast overpressure is [defined](#) as the sudden onset of a pressure wave, above normal atmospheric pressure, which occurs from blast, such as explosions and weapons firing events. The pressure wave is caused by the energy released during explosions and weapons firing.

WHAT ARE THE TYPES OF BLAST OVERPRESSURE?

High-Level Blast is overpressure generated by incoming munitions, such as improvised explosive devices or rocket-propelled grenades, primarily in combat environments. HLB exposure may result in acute injury, such as traumatic amputation, TBI, or auditory injury. If you have questions about HLB exposure, speak to your healthcare provider.

Low-Level Blast is overpressure generated by firing weapon systems or detonating explosives, such as 0.50 caliber weapons or breaching charges, in training or combat environments. LLB exposure does not typically result in [mild TBI](#).

WHAT MILITARY OCCUPATIONS* AND WEAPON SYSTEMS CAN EXPOSE SERVICE MEMBERS TO LOW-LEVEL BLAST?



Research is still emerging on the potential health effects of exposure to blast overpressure generated from firing weapon systems. This fact sheet is intended to raise awareness of low-level blast exposure and not meant to restrict mission-essential training.

WHAT SYMPTOMS HAVE BEEN REPORTED AFTER LOW-LEVEL BLAST EXPOSURE?

- Concentration problems
- Dizziness
- Irritability
- Memory problems
- Slowed thinking/slow reaction time
- Difficulty hearing
- Fatigue
- Headaches
- Sleep problems
- Tinnitus (ringing in the ears)

Symptoms from low-level blast exposure typically resolve with time. Physical symptoms may appear immediately or may only develop after multiple exposures occur.

WHAT SHOULD SERVICE MEMBERS DO WHEN EXPOSED TO LLB?



Recognize

- There are specific occupations at higher risk for exposure.
- Certain weapon systems have been identified as generating LLB.
- There are ammunition firing limits for the weapon systems that you use.*
- LLB exposure can vary depending upon your firing position and other environmental conditions such as enclosed spaces or reflective surfaces (e.g., walls, ground).
- A larger net explosive weight produces greater BOP.

*Current firing limits are lung- and hearing-specific but may also protect brain health.



Limit

- Limit exposure to as low as reasonably achievable (ALARA).
- Keep an appropriate distance from weapons being fired (i.e., step away if not directly firing or assisting).
- Turn in unused ammunition (i.e., avoid SPENDEX).
- Wear appropriate protective equipment (e.g., [hearing protection](#)).
- Adhere to weapon system firing limits.*
- Implement training substitution or adjustment methods (e.g., simulation, modeling, firing fewer rounds further apart).



Report

- If your symptoms persist and impact your daily function, inform your command and medical provider.
- Report to medical provider should include:
 - Duration of exposure
 - Number of blasts
 - Years in higher-risk occupation/unit (e.g., MOS/NEC/AFSC)
 - Symptom details and duration
- Refer to [health.mil/TBIfactsheets](#) for additional resources.



Scan the QR code to download the [DOD Blast Overpressure Reference and Information Guide \(D-BOP RIG\)](#).

Do you have questions about this fact sheet? Feedback? Email dha.TBICoInfo@health.mil.