

## What is Low-Level Blast?

Blast generated from firing heavy weapon systems or explosives in combat or training environments. Exposure to low-level blast does not typically result in a clinically diagnosable concussion/mild traumatic brain injury.



**PROVIDERS**

## LLB Exposure May Cause

- Concentration problems
- Irritability
- Memory problems
- Slowed thinking/slow reaction time
- Decreased hand-eye coordination
- Difficulty hearing
- Headaches
- Tinnitus

## What Should Medical Providers Do?



### Ask

When taking a patient's history, ask about LLB exposures and assignment to high-risk military occupation(s).



### Document

Document in the medical record:

- Military occupation(s)
- Estimate of total LLB exposures (e.g., weapon systems, duration of exposure, number of blasts)
- Experience as a military training instructor
- Years in high-risk occupation/unit (e.g., MOS/NEC/AFSC)



### Manage

Symptoms related to LLB exposure may resolve with rest. For persistent symptoms:

- Provide the patient with the [LLB fact sheet for service members](#)
- Consider traditional mTBI treatments such as [PRA](#)
- For additional resources, refer to [Health.mil/TBIProviders](https://www.health.mil/TBIProviders)

*Research is still emerging on the full impact of LLB exposure on brain health and performance outcomes.*

## Military Occupations and Heavy Weapon Systems That Can Increase Risk of LLB Exposure

Armor, Artillery,  
and Gunnery  
Combat Engineer



Breaching  
Charges



Explosive  
Ordnance Disposal  
Special Operations  
Forces



Shoulder  
Mounted  
Weapons



Infantry  
Military Training  
Instructor



.50 Caliber  
Weapons



Medical Assets Attached  
to Expeditionary Units



Indirect Fire  
Weapons



## Key Terms

**Acute Exposure:** Contact with a blast event from a single origin at a specific point in time (i.e., use of a blast-generating weapon during a training session)

**Blast Overpressure:** Positive change in ambient pressure generated by the blast shockwave created when a weapon is fired. The highest part of the wave is referred to as peak overpressure (measured in pounds per square inch)

**PRA:** [Progressive Return to Activity: Primary Care for Acute Concussion Management](#)

**Repetitive Exposure:** Contact with multiple blast events either in a single training session or over a period of time (i.e., use of a blast-generating weapon over the course of multiple days of training or multiple training exercises)

The research efforts focused on understanding the effects of low-level blast exposure were initiated following the National Defense Authorization Act of Fiscal Year 2018 Section 734, which required research on members of the armed services exposed to blast from heavy weapons use in combat or training.



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