

# The long-term health impact of blast exposure in 9/11 Veterans

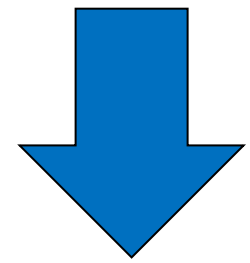
(Scoping Review in Progress)

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## INTRODUCTION

The post 9/11 military conflicts were characterized by heavy use of explosive warfare that put service members at high risk for blast exposure.

- 78% of wounds caused by blast (2001-2005)
- 73% of US casualties related to blasts (2010)
- Daily occurrence of blasts
- Experiencing multiple blasts was not unusual
- Lack of documentation of blast exposure



### Blast - Hallmark exposure of 9/11 conflicts

*What are the long-term health impacts of being exposed to blasts while serving during the post 9/11 conflicts?*

## OBJECTIVES

The purpose of this scoping review is to describe:

- blast exposure injuries and complications
- the connection between blast exposure and metabolic complications
- methods of blast exposure assessment
- ongoing research initiatives

## METHODS

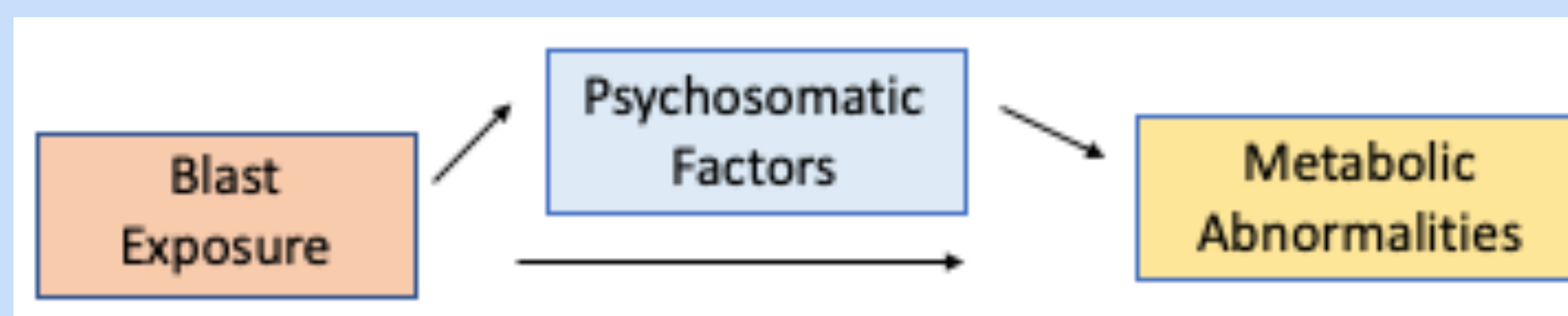
- Search Ovid MEDLINE, PsychINFO, EMBASE
- Nursing Librarian support received – Special THANKS to Janene Batten, MLS @ YSN

## Blast Exposure Injuries and Complications

<b>PHYSICAL</b>	<ul style="list-style-type: none"> <li>• Limb loss</li> <li>• Physical disability</li> <li>• Vision loss</li> <li>• Hearing loss</li> <li>• Lung damage</li> <li>• Post-concussion syndrome</li> </ul>
<b>COGNITIVE</b>	<ul style="list-style-type: none"> <li>• Memory loss</li> <li>• Attention deficits</li> </ul>
<b>PSYCHOLOGICAL</b>	<ul style="list-style-type: none"> <li>• PTSD</li> <li>• Mood disorders</li> <li>• Substance Use Disorders</li> </ul>
<b>BEHAVIORAL</b>	<ul style="list-style-type: none"> <li>• Insomnias/sleep disorders</li> <li>• Irritability</li> </ul>

## Possible Metabolic Complications

- Animal models – impacting glucose dysregulation and insulin resistance
- Possible pathway between brain injury and glucose dysregulation and insulin resistance
- Veterans with TBI - greater weight gain trajectories
- Blast exposure may be a risk factor for obesity
- Possible mediation through psychosomatic factors (PTSD, Mood disorders, SUD, pain and sleep disturbance)



## Blast Measurement

Two methods:

1. Real-time blast measurement (Blast Gauge©)
2. Recall data - questionnaire

Validated Questionnaires Used:

- Brief Traumatic Brain Injury Screen (BTBIS)
- Warrior-Administered Retrospective Casualty Assessment Tool (WARCAT)
- VA TBI Screening Tool (VATBIST)
- Structured Interview for TBI Diagnosis (SITBI)
- Boston Assessment of Traumatic Brain Injury-Lifetime (BAT-L)

## Important Clinical Assessment

- Assess blast exposure in veterans who served during the 9/11 conflicts
- Assess for physical, cognitive, psychological, and behavioral injuries/complications of blast exposure
- Refer to specialty care as needed

## ONGOING RESEARCH

- Active-Duty military – INVICTA study (measuring blast exposure as an occupational hazard)
- Long term health impact of blast exposure – TRACTS (Translational Research for TBI and Stress Disorders @ the Boston & Houston VHA)