



# Warfighter Personal Protective Equipment and Combat Wounds: Body Armor on Casualties at Role 1

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## Background

### Balance



### Modularity

Level	Configuration	Added Weight lbs/kg
BAPL 0	No body armor	0
BAPL 1	Vest or plate carrier with soft armor only	6 / 2.7 and 10.5 / 4.8
BAPL 2	Plate carrier with front and back plates	18 / 8.2
BAPL 3	Plate carrier with front, back, and side plates	23 / 10.4
BAPL 4	IOTV with front and back plates	28 / 12.7
BAPL 5	IOTV with front, back, and side plates	32 / 14.5

### Shifting Trauma Patterns

## Objective

Broad trends with injury patterns correlated with PPE use.

Little is known about what PPE is actually worn at point of injury

Determine what PPE is being worn at point of injury during combat operations

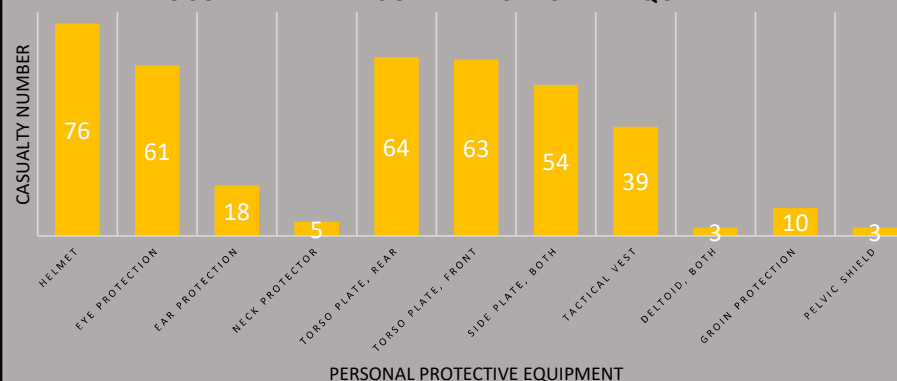
## Methods

- Prehospital Trauma Registry (PHTR): Data from TCCC data and after-action reviews
- Department of Defense Trauma Registry: Repository for trauma related injuries, from point of injury to final disposition.

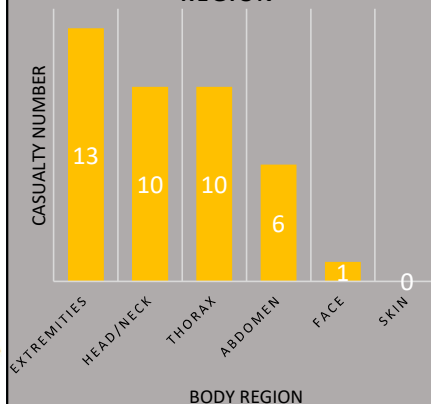


## Results

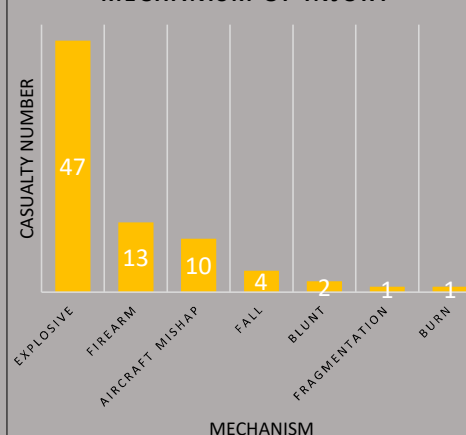
### DOCUMENTED PERSONAL PROTECTIVE EQUIPMENT



### SERIOUS INJURIES BY BODY REGION



### MECHANISM OF INJURY



## Discussion

### Trend

- Protect head/thorax
- Exposed neck, groin, extremities

### Reasons

- Perception armor not effective, no benefit
- Increased thermal burden
- Increased weight, reduced mobility

### Limits

- Small Sample size – external validity
- Granularity of data
- Poor documentation rates

### Future

- Improved armor design
- Improve data capture

## Conclusion



Balance in mobility and protection.  
Shift in trauma patterns.



Warfighters opt to protect head/thorax, less protection for extremities, neck, groin.



Need for improved armor design and point of injury data collection.