## Outcome Domain:

Military Studies

### Domain Description and Relevance in TBI:

Additional measures specifically designed for and/or in widespread use in military populations are included in this domain. If an instrument/measure is already categorized using another outcome domain it is NOT included in this domain to prevent listing instruments/measures multiple times within the same population.

Table CDE Classification by Type of TBI Study and Relevant Population for Recommended Military Studies Outcome Measures.

| Outcome Measure Name | Relevant TBI Population | Acute Hospitalized | Moderate/ Severe Rehabilitation | Concussion/ Mild TBI | Epidemiology |
| --- | --- | --- | --- | --- | --- |
| Combat Exposure Scale (CES) | Adult | Supplemental | Supplemental | Supplemental | Supplemental |
| Military Acute Concussion Evaluation | Adult | Supplemental | Supplemental | Supplemental | Supplemental |
| Veterans Rand 36 Item Health Survey (VR-36) | Adult | Supplemental | Supplemental | Supplemental | Supplemental |

## Combat Exposure Scale (CES)

### DESCRIPTION:

The Combat Exposure Scale is used in military populations to assess level of exposure to wartime stressors. It is a 7-item self-report measure, with questions scored on a 5-point frequency scale. Scores are weighted and summed to a total score between 0 and 41, where scores closer to zero represent light combat, and scores closer to 41 represent heavy combat.

### PERMISSIBLE VALUES:

Total score ranges from 0-41

### PROCEDURE:

The scale is self-report and takes 5 minutes to administer.

### COMMENTS:

For use in military populations.

### RATIONALE:

TheCombat Exposure Scale is easy to use and score. It has acceptable psychometric properties, including internal stability and test–retest reliability.

### REFERENCES:

Keane, T., Fairbank, J., Caddell, J., Zimering, R., Taylor, K., & Mora, C. (1989). *Clinical evaluation of a measure to assess combat exposure*. Psychological Assessment, 1, 53-55.

## Military Acute Concussion Evaluation

### DESCRIPTION:

The Military Acute Concussion Evaluation (MACE) is the most widely used screening evaluation for acute concussion in military personnel. The MACE is conducted up to 72 hours following an injury and only if alteration of consciousness or loss of consciousness is present. The evaluation consists of a history section, neurological evaluation, and a scored cognitive screen of orientation, immediate and delayed recall, and concentration. Alternate forms can be used to monitor recovery and aid in decisions about returning to duty. It is currently undergoing additional validation.

### PERMISSIBLE VALUES:

Total score on the cognitive section is 30 points

### PROCEDURE:

The MACE should be administered by a medical professional following a possible concussive event when alteration or loss of consciousness is observed.

### COMMENTS:

For use in military populations.

### RATIONALE:

Widely used in the military and contains alternate forms

### REFERENCES:

Schwab KA, Ivins B, Cramer G et al. (2007). Screening for traumatic brain injury in troops returning from deployment in Afghanistan and Iraq: Initial investigation of the usefulness of a short screening tool for traumatic brain injury. Journal of Head Trauma Rehabilitation, 22(6):377-389.

Terrio H, Brenner LA, Ivins BJ, Cho JM, Helmick K, Schwab K, Scally K, Bretthauer R & Warden D. (2009). Traumatic brain injury screening: Preliminary findings in a US Army brigade combat team. J Head Trauma Rehabil; 24(1): 14-23.

## Veterans Rand 36 Item Health Survey (VR-36)

### DESCRIPTION:

The Veterans Rand-36 (VR-36) Health Survey is a 36-item evaluation developed from the RAND 36-Item Health Survey for research with veterans. Likert-style questions assess physical functioning, role limitations due to physical problems, role limitations due to emotional problems, bodily pain, general health, vitality, social function, and mental health. Two items addressing change in physical and emotional health over the last year are included. Separate physical and mental summary scores can be computed. The VR-36 is widely used by the U.S. Veterans Health Administration.

### PERMISSIBLE VALUES:

T-scores (mean=50, SD=10), where higher scores indication better health

### PROCEDURE:

The questionnaire is self-administered by paper/pencil.

### COMMENTS:

Developed for use with veterans.

### RATIONALE:

The VR-36 is widely used by the U.S. Veterans Health Administration and is free for use.

### REFERENCES:

Kazis LE, Miller DR, Clark JA, et al. Improving the response choices on the veterans SF-36 health survey role functioning scales: Results from the Veterans Health Study. J Ambul Care Manage 2004;27(3):263–80.

Perlin J, Kazis LE, Skinner K, et al. Health status of veterans: Physical and mental component summary scores (SF-36V). 1999 National Survey of Ambulatory Care patients, Executive Report, Office of performance and Quality, Health Assessment Project HSR&D Field Program, Washington, DC and Bedford, MA, May 2000.