



Veterans and Traumatic Brain Injury

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What is TBI?

Traumatic brain injury is usually caused by a blow or other traumatic injury to the head or body. The degree of damage can depend on several factors, including the nature of the injury and the force of impact.

Common events that cause TBI

- ▶ Falls, vehicle related collisions, violence, sports injuries, explosive blasts and other combat injuries
- ▶ Explosive blasts are a common cause of traumatic brain injury in active-duty military personnel. although how the damage occurs isn't yet well-understood, many researchers believe that the pressure wave passing through the brain significantly disrupts brain function.
- ▶ Traumatic brain injury also results from penetrating wounds, severe blows to the head with shrapnel or debris, and falls or bodily collisions with objects following a blast.

Reference: <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>

Risk of Traumatic Brain Injury

- ▶ Military service members are increasingly deployed to areas where they are at risk for experiencing blast exposures from improvised explosive devices (IEDs), suicide bombers, land mines, mortar rounds and rocket-propelled grenades. These and other combat related activities put our military service members at increased risk for sustaining a TBI.

Reference: <https://dvbic.dcoe.mil/tbi-military>

- ▶ Mild traumatic brain injury (mTBI) is one of the signature injuries of the Iraq and Afghanistan wars. More than 300,000 U.S. service members were diagnosed with mTBI between 2000 and 2014

Reference: <https://academic.oup.com/milmed/article/185/5-6/e597/5803040>

- ▶ 50 to 80 percent of people in the criminal justice system in the US have had a [traumatic brain injury](#). In the general public, that number is less than five percent.

Reference: <https://sciencebeta.com/brain-injury-criminals/>

TBI and Co-morbidities

- TBI, together with mental illness and substance abuse and trauma, makes it hard for people to think. They have cognitive impairments like poor judgment and poor impulse control, problems that make criminal justice a revolving door. People get arrested and booked into jail.

Reference: <https://sciencebeta.com/brain-injury-criminals/>

TBI and Co-morbidities (Cont.)

- Among veterans with positive TBI screens in Veterans Affairs (VA) facilities, 80% indicate comorbid psychiatric diagnoses. Up to half of all service members with combat-related mild TBI (mTBI) meet criteria for Posttraumatic Stress Disorder (PTSD). Over one-third with a history of mTBI have depression, with increased risk of suicidal ideation, suicide attempts, and suicide completion. Adjusting for psychiatric comorbidities, veterans with a history of TBI are 1.55 times more likely to die from suicide than those without TBI. Additional sequelae associated with mTBI in veterans include cognitive impairment, alcohol misuse and binge drinking, pain disorders, and unemployment. This corresponds to civilian research where TBI has been linked to suicide, lower quality of life, and mood and anxiety disorders

Reference: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5501743/>

Correlation between TBI and Legal Issues

- At best this study can be taken as further evidence that there is a casual link between traumatic brain injury and criminal behavior, but **cannot** go as far as say that traumatic injury is a cause of criminal behavior. There are clear relationships between the effects of a brain injury and how that can impact behavior. For example, a person recovering from a brain injury can experience changes in their personality, their thought patterns, and their cognition ability as the physical brain tries to recover.

Reference: <https://www.crimetraveller.org/2017/01/traumatic-brain-injury-criminal-behaviour/>

Phineas Gage

- Phineas Gage is probably the most famous person to have survived severe damage to the brain
- Also the first patient from whom we learned something about the relation between personality and the function of the front parts of the brain
- Before the accident he had been their most capable and efficient foreman, one with a well-balanced mind, and who was looked on as a shrewd smart business man
- After the accident he was said to be fitful, irreverent, and grossly profane, showing little deference for his fellows. He was also impatient and obstinate, yet capricious and vacillating, unable to settle on any of the plans he devised for future action

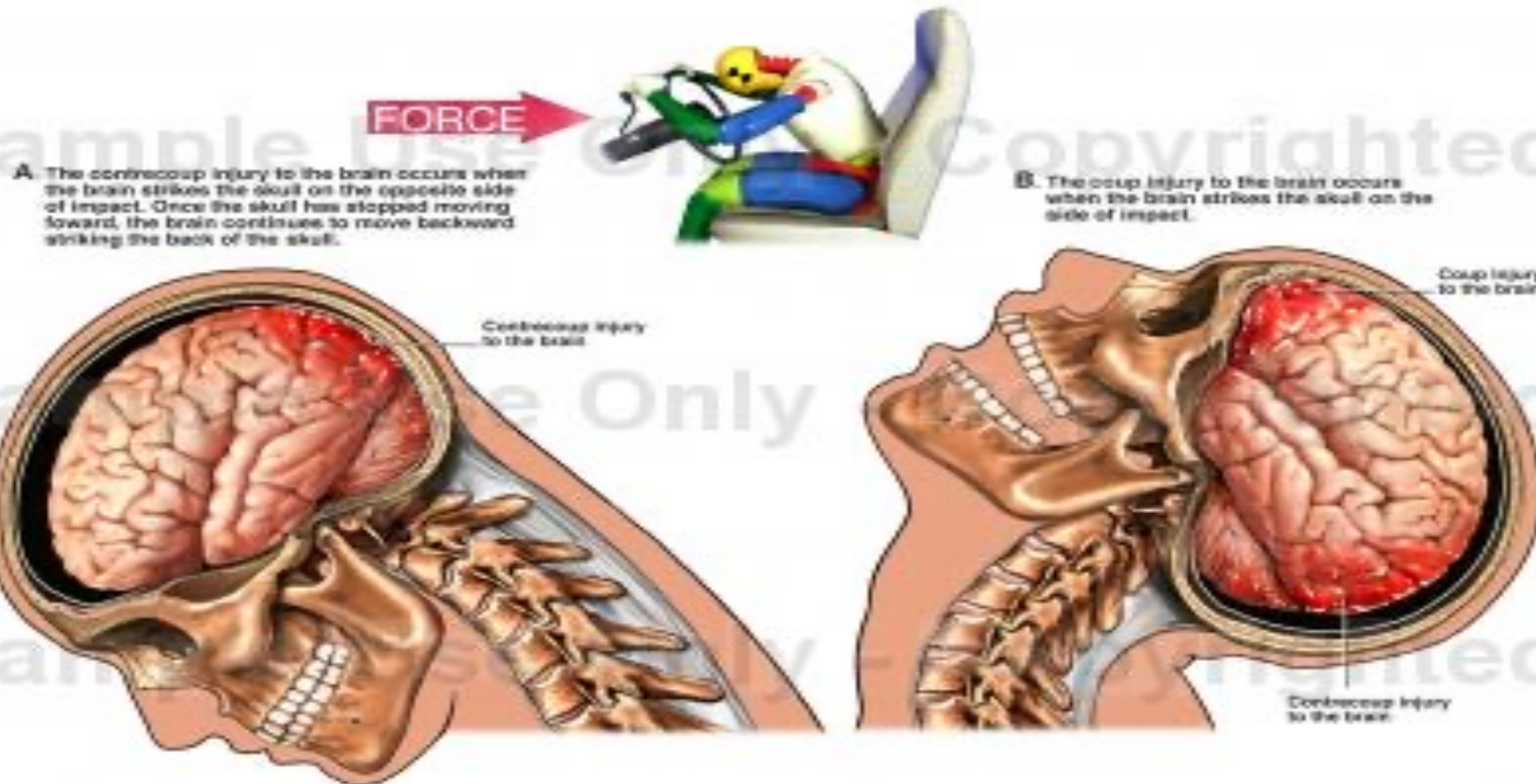
References: <https://www.uakron.edu/gage/story.dot>



Traumatic Brain Injury

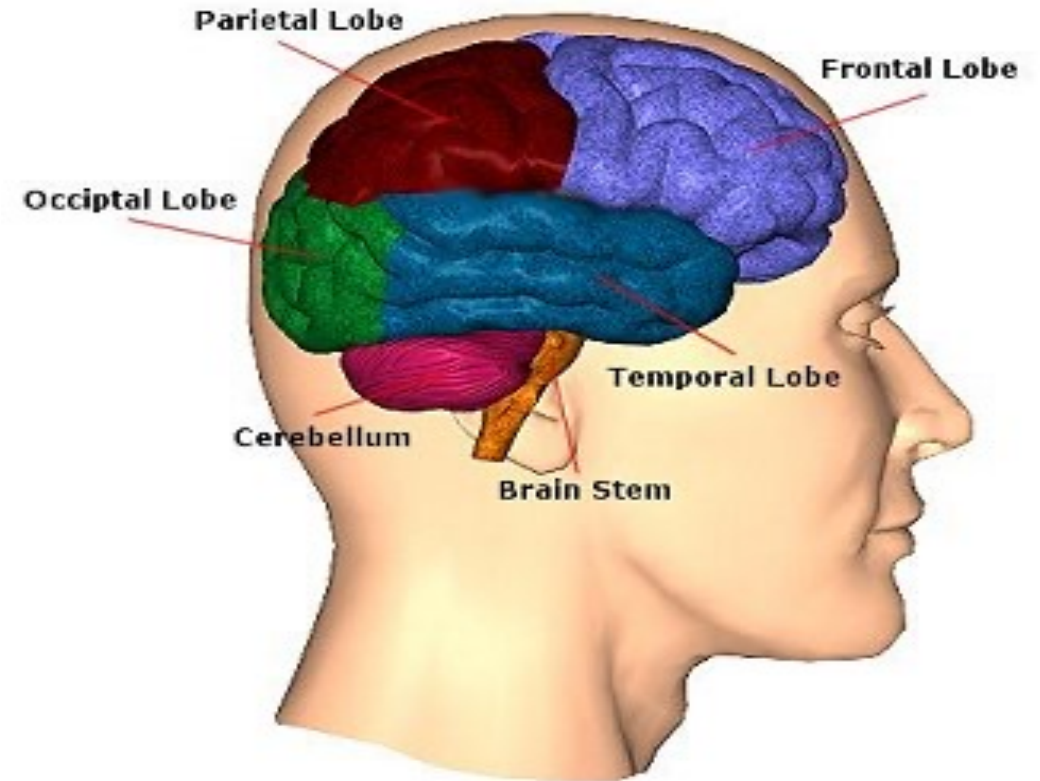
Closed Head Traumatic Brain Injury (TBI) - Coup and Contrecoup

Closed Head Injury - Coup and Contrecoup



Physical Signs Of TBI

Headache
Difficulty Sleeping
Sleeping More Than Usual
Dizziness
Balance Problems
Nausea/Vomiting
Fatigue/Drowsiness
Sensitivity To Light
Ringing In The Ears
Problems With Speech



References: <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>

Cognitive Signs Of TBI

The following are typically attributed to injuries to the frontal lobe (front of the head):

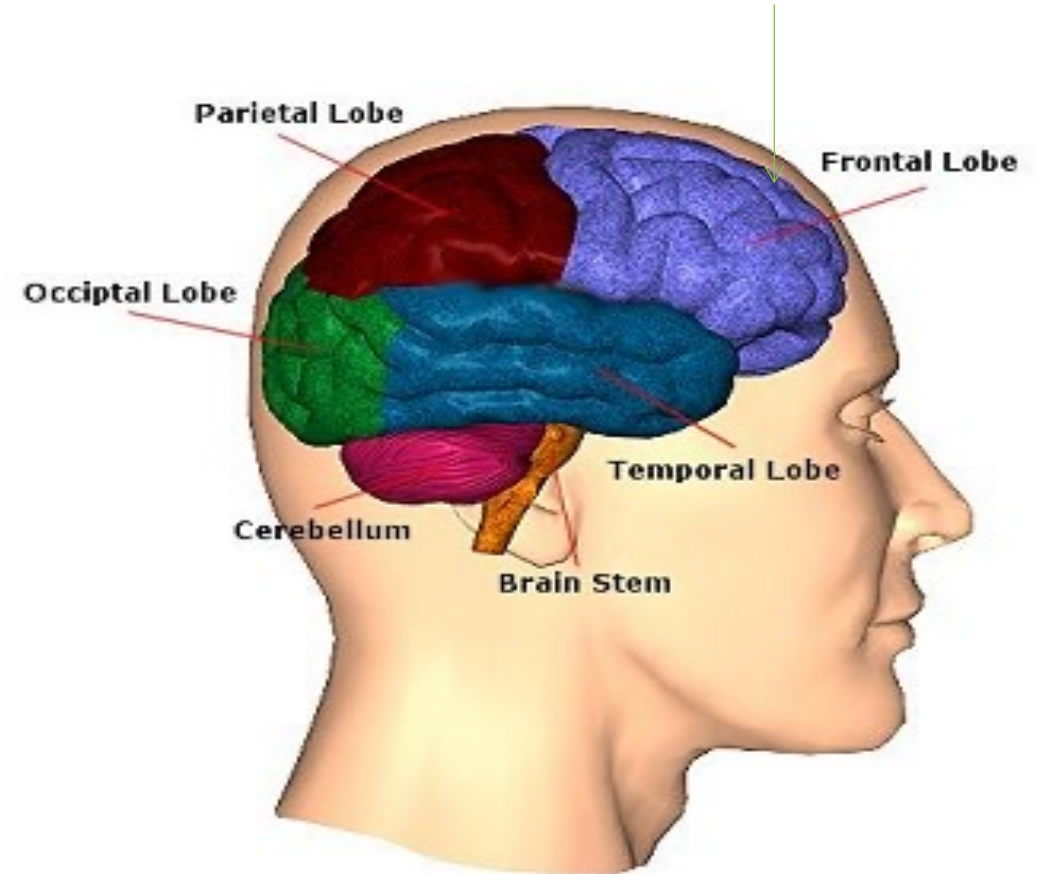
Concentration Problems

Memory Problems

Slurred Speech

Confusion

References: <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>



Emotional Signs Of TBI

These are typically associated with injuries to the temporal lobe (side of the head)

Irritability

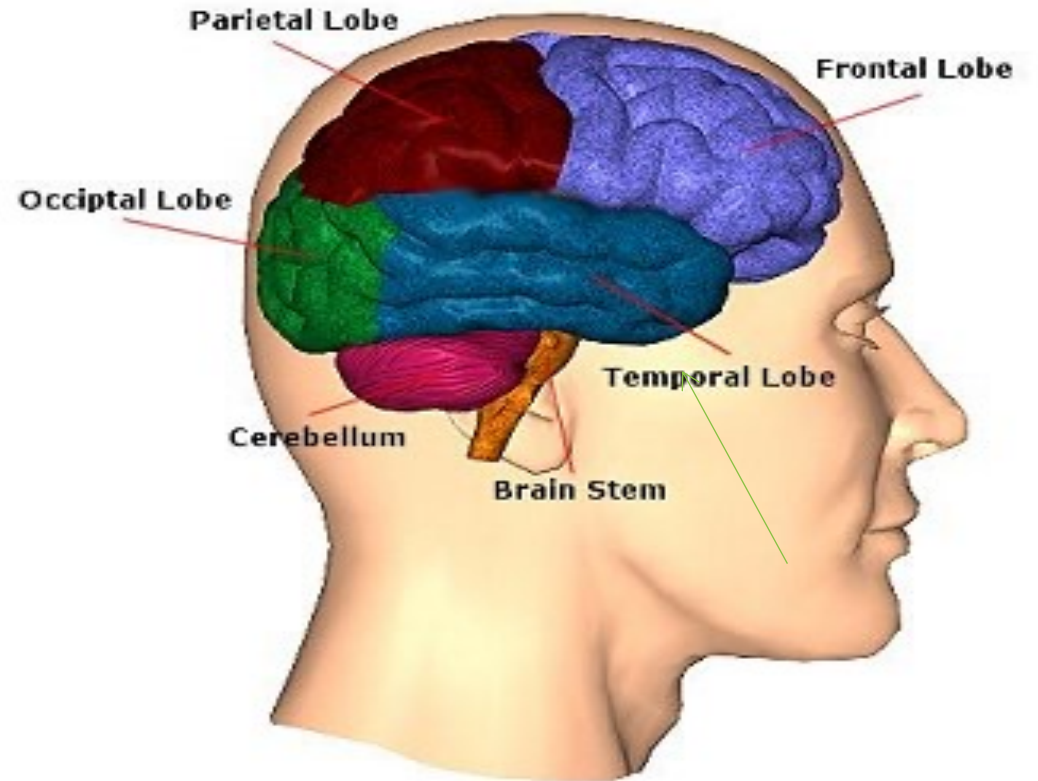
Anxiety

Depression

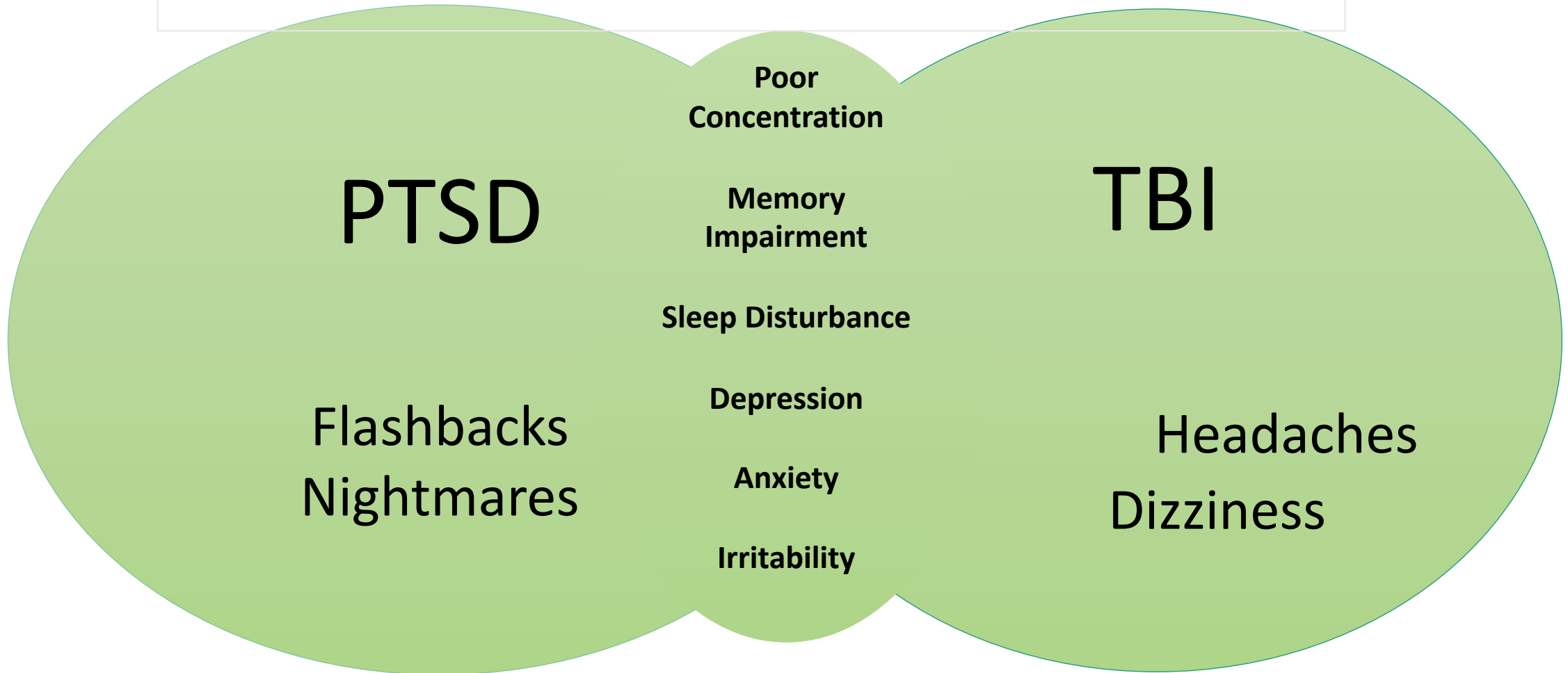
Mood swings

Anger

References: <https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>



Clinical Presentation Overlapping Symptoms



Polytrauma/TBI System of Care

- VA's [Polytrauma System of Care](https://www.polytrauma.va.gov/) (PSC) is an integrated network of specialized rehabilitation programs dedicated to serving Veterans and Service Members with both combat and civilian related Traumatic Brain Injury (TBI) and polytrauma. Services available through PCS include: interdisciplinary evaluation and treatment, development of a comprehensive plan of care, case management, patient and family education and training, psychosocial support, and application of advanced rehabilitation treatments and prosthetic technologies.
- Reference: <https://www.polytrauma.va.gov/>

Resources for Veterans and Court Professionals

- The Veteran Justice Outreach Initiative (VJO) is to avoid the unnecessary criminalization of mental illness and extended incarceration among Veterans by ensuring that eligible justice-involved Veterans have timely access to VHA mental health and substance abuse services when clinically indicated, and other VA services and benefits as appropriate.

Reference: <https://vaww.ogc.vaco.portal.va.gov/law/VJO/SitePages/Home.aspx>

- Justice For Vets is a division of the National Association of Drug Court Professionals, a 501(c)(3) nonprofit dedicated to educating and offering technical assistance to drug court, DWI court, and veterans treatment court professionals.

Reference: <https://justiceforvets.org/veterans-and-families/>

Additional Resources

Domestic Violence, PTSD, and Brain Injury: Military and Civilian Challenges by Deborah Tucker
Part 1:

http://www.ncdsv.org/images/MFLJ_Domestic%20Violence%20and%20PTSD_Tucker_Pt%2014-2009.pdf

Part 2:

http://www.ncdsv.org/images/MFLJ_Domestic%20Violence%20and%20PTSD_Tucker_Pt%202_May%202009.pdf

The Brain Defense by Kevin Davis

https://www.abajournal.com/magazine/article/brain_defense_parson_trial_head_trauma

The Surprising Connection Between Brain Injuries and Crime by Neuropsychologist Kim Gorgens

<https://sciencebeta.com/brain-injury-criminals/>

Researchers Disorder Neuroprotective Treatment for Chronic Traumatic Brain Injury By University Hospitals Cleveland Medical Center

<https://medicalxpress.com/news/2020-10-neuroprotective-treatment-chronic-traumatic-brain.html>

Questions?