

TRAUMATIC BRAIN INJURY

IMPACT on MIND, BODY and SPIRIT

Implications for Returning Service Members



A Week Away From Homelessness....one soldier's story

- MP at Fort Sill- 1993 assaulted off base, frontal lobe injury resulting in a subdural hematoma, seizures.
- On the field at Fort Bragg 1995, when a fellow soldier opened fire, killing one, injuring 18.
- Left Army-1996
- 1996- 2009, attempted college, multiple jobs, polysubstance abuse, incarceration, worsening PTSD symptoms.....

Critical Supports

- Family-from a distance
- Vet to Vet assistance that informed of benefits and provided assistance filling out VA paperwork
- **Approved for VA benefits**
- Family provided background information to VA physicians regarding personal impact of TBI/PTSD

*“A few years following the shooting at Fort Bragg, he chose not to reenlist and left the Army, he felt returning to civilian life would open up a variety of educational and career opportunities not available to him in the service. However, **the army provided something that was critical to his successful functioning day to day following his injuries, and that is structure. While in the military the expectations were laid out for him, literally day to day he knew exactly what to do.***

In the civilian world, we are expected to impose structure on our lives, make decisions that are in our best interest and follow through with our responsibilities. The ability to multitask and make thoughtful, measured decisions are high level cognitive skills that most of us take for granted. For individuals who receive a blow or blows to the temporal/frontal regions of their brain, this skill can be compromised.

Although it is related to organic brain damage, the behavioral manifestations of the damage often looks to the casual observer as if the person is unmotivated, lazy, self-centered, disorganized and impulsive”.

**Things are not perfect, but he
is housed and receiving
appropriate medical treatment**

***Thank you Atlanta
VA Medical Center!!***

Processing Exercise

What it might feel like

**Traumatic Brain Injury-
what it might look like:
a few minutes from the
documentary
*“Beyond the Invisible”***

WHO HAS...

Incidence of TBI

CDC 2010

In the United States, *at least*
1.7 million Civilians
sustain a TBI each year
(That we know about)



TBI and Service Members

- According to the Defense and Veterans Brain Injury Center's website, the Department of Defense reports the world wide incident of TBI among service members from 2000-2010 was 266,810
- Over 80% of TBI's occur in non-deployed settings
- Cause of TBI among service members include vehicle crashes, falls, sports, recreation, and military training related
- The majority of injuries are considered mild (concussion, same as in the civilian world)

As with civilian concussion, the damage.....

- May be microscopic, therefore it will not show up on a standard imaging/diagnostic tests
- Can cause a metabolic “cascade” of damage and death to neurons
- Might not have resulted in a loss of consciousness, more predictive of damage is length of post traumatic amnesia (PTA)
- **For service members, like athletes, brain damage can be cumulative, the result of multiple concussive events**

According to the Defense and Veterans Brain Injury Center, 26,561 service members world wide incurred a TBI in 2013, the majority of these injuries are considered “mild”.

dvbic.doe.mil/dod-worldwide-numbers-tbi

Correlation between TBI & Homelessness

Hwang et.al 10.7.08 Canadian Medical Journal

- 904 homeless individuals surveyed
- Lifetime Prevalence of TBI-**53%**, more common among men than women surveyed
- Rates 5 or more times greater than the 8.5% lifetime prevalence in general population and consistent w/ **prison studies**

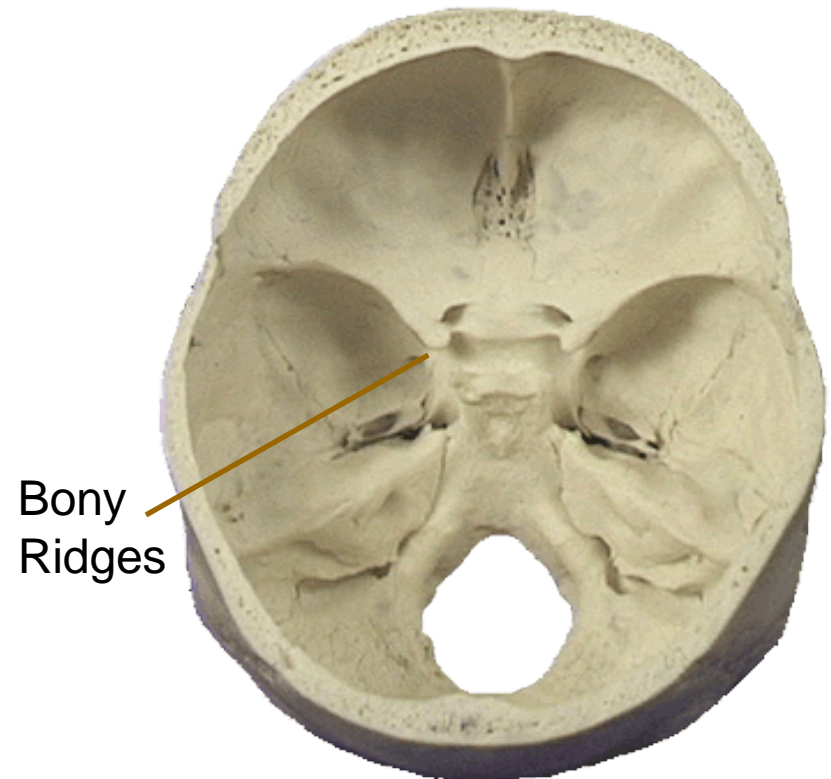
Skull Anatomy

The skull is a rounded layer of bone designed to protect the brain from penetrating injuries.

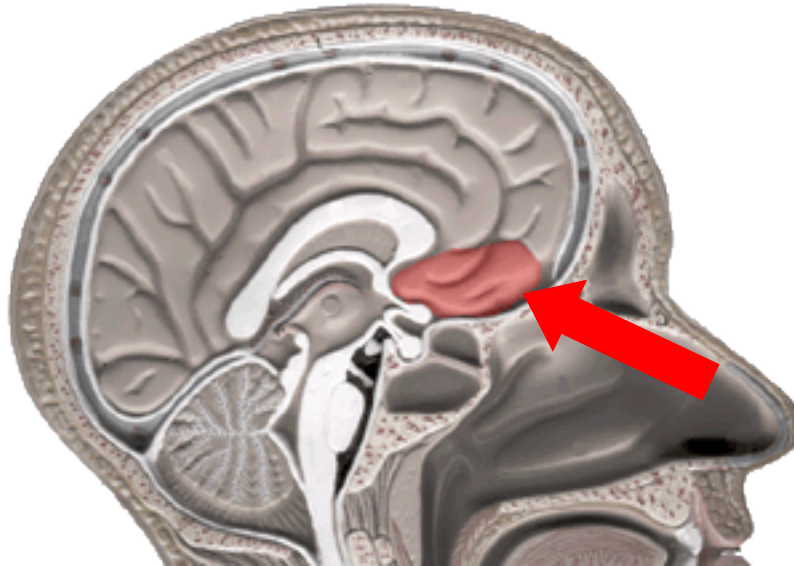


The base of the skull is rough, with many bony protuberances.

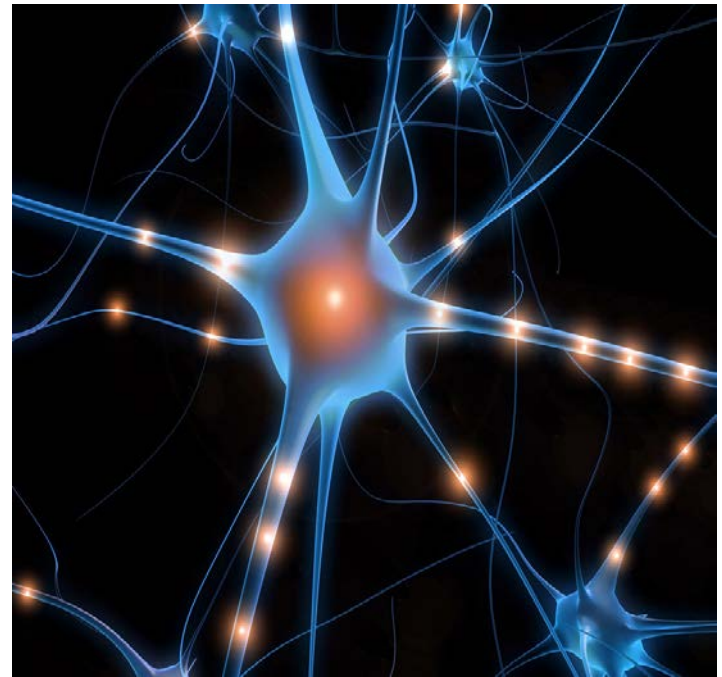
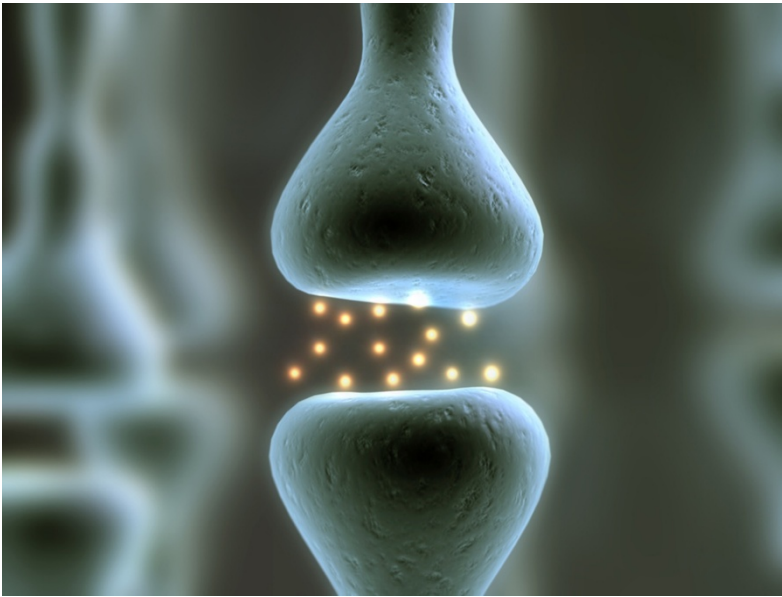
These ridges can result in [injury to the temporal and frontal lobes](#) of the brain during rapid acceleration.



Skull Anatomy



Injury to frontal lobe from contact with the skull



Brain Injury, whether “mild” aka concussion, moderate or severe can disrupt and destroy neurons, thus impacting function.

The Frontal Lobe

The frontal lobe is the area of the brain responsible for our “executive skills” - higher cognitive functions.

These include:

- Problem solving

- Spontaneity

- Memory

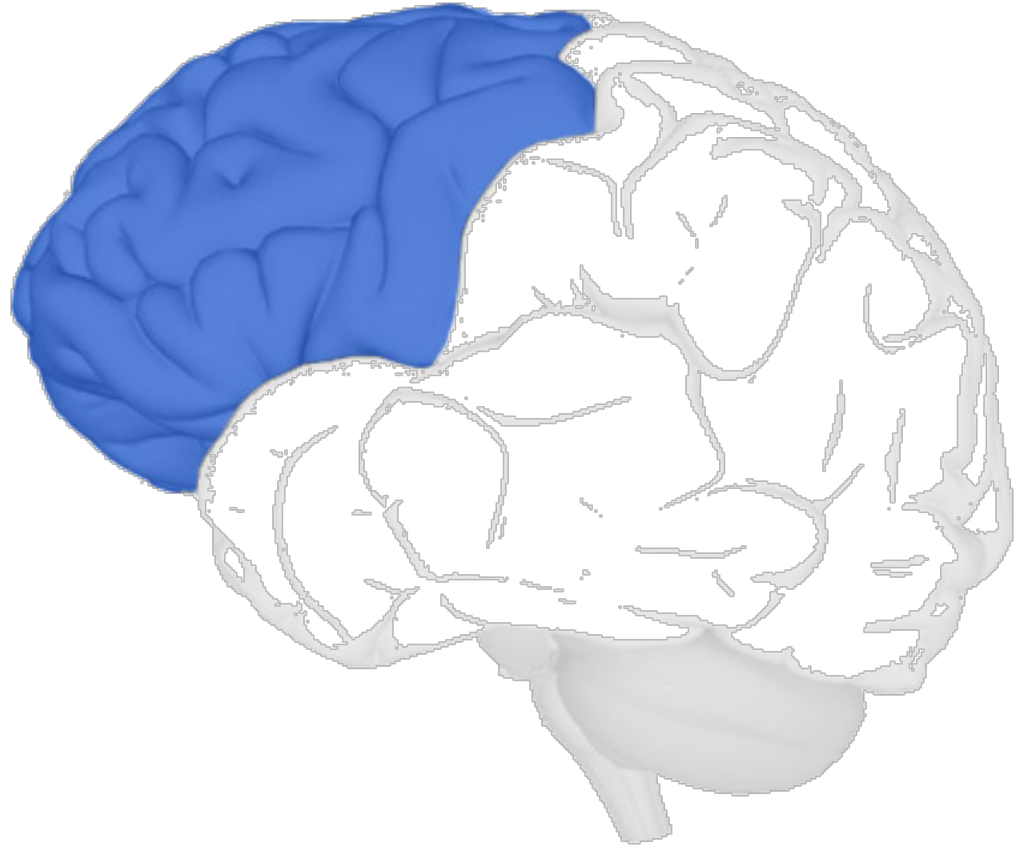
- Language

- Motivation

- Judgment

- Impulse control

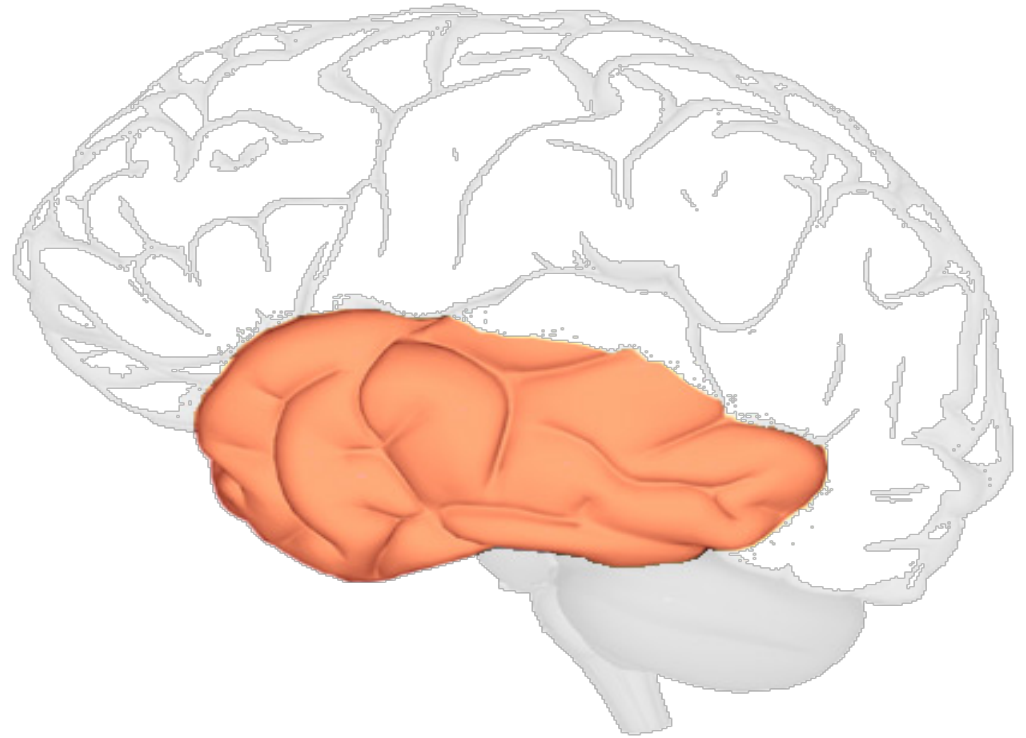
- Social and sexual behavior.



Temporal Lobe

The temporal lobe plays a role in emotions, and is also responsible for smelling, tasting, perception, memory, understanding music, **aggressiveness, and sexual behavior.**

The temporal lobe also contains the language area of the brain.



adapted from Dr. Mary Pepping of the University of Idaho's presentation *The Human Brain: Anatomy, Functions, and Injury*

Diffuse Axon Injury

is a very serious injury, as it directly impacts the major pathways of the brain.



DAI often does not show up on a CAT scan, and can occur without LOC.

The impact and damage can be global with resulting impairment across multiple functions

The Scope of the Problem

- **Distribution of Severity:**
 - Mild injuries = 80%
Loss of Consciousness (LOC) < 30 min, Post Traumatic Amnesia (PTA) ,1 hour
 - Moderate = 10 - 13%
(LOC 30 min-24 hours, PTA 1-24 hours)
 - Severe = 7 - 10%
(LOC >24 hours, PTA >24 hours)

The Importance of Post Traumatic Amnesia

*PTA is the period of time
after injury when a
person is unable to lay
down new memories...*

***“Unidentified traumatic
brain injury is an
unrecognized major source
of social and vocational
failure”***

**Wayne Gordon, Ph.D of the Brain Injury Research
Center at Mount Sinai School of Medicine
Quoted in the Wall Street Journal 1.29.08**

Possible Changes-Physical

- Spasticity (jerky movements, or limbs frozen in place)
- Paralysis
- **Unsteady gait**
- Inability to walk a straight line
- Staring or poor eye contact
- **Visual problems (blurred or double vision, or blindness)**
- Tremors
- Slow or slurred speech (dysarthria)
- Poor eye hand coordination
- **Affected hearing**

Possible Changes-Physical

- **Dizziness, headaches, pain**
- **Sleep problems**
- Diminished sense of taste or smell
- Tremors
- Seizures
- Deaf or hearing impaired
- **Flat affect (difficult to read the individual's emotional state)**
- Altered eye movement (cannot follow object without moving their head)

Possible Changes-Thinking

- **Difficulty staying on topic in conversations**
- **Vague, unclear language**
- **Difficulty with planning and prioritizing**
- **Perservation (saying or doing the same thing over and over)**
- **Response time is slow (can be reduced verbally and/physically)**
- **Confusion (more apparent immediately after injury)**
- **Very concrete thinker, doesn't pick up on abstract information, (e.g. jokes)**
- **Poor short-term memory**
- **No first hand memory of the accident that caused the injury**
- **Short attention span/easily distracted**

Possible Changes-Thinking

- Trouble understanding what is said to them or what they are reading (receptive aphasia)
- Hard time expressing self verbally (expressive aphasia)
- Body language may not match verbalization
- Laughs, cries, or becomes agitated inappropriately or easily, and/or not in keeping with situation at hand
- **Difficulty accommodating views and opinions different from their own** (interpersonal rigidity)

Possible Changes-Personality and Behavioral

- Depression
- Social skills problems
- Mood swings
- Problems with emotional control
- Inappropriate behavior
- Inability to inhibit remarks
- Inability to recognize social cues
- Problems with initiation
- Reduced self-esteem
- Difficulty relating to others
- Difficulty maintaining relationships
- Difficulty forming new relationships
- Stress/anxiety/frustration and reduced frustration tolerance

Note: w/mTBI the above behaviors may be extremely subtle, yet off putting to those around the individual

After TBI, behavioral issues can be directly related to organic damage. The overlay of PTSD as in the case of many returning service members can magnify TBI symptoms

A Word About Substance Abuse & Traumatic Brain Injury

Substance Abuse and TBI are very closely related, frequently alcohol is on board at the time of injury (w/negative implications for healing & recovery) and is co-occurring for many individuals post injury

Substance Abuse after brain injury can magnify cognitive, behavioral and physical changes after TBI

For information this topic go to:

www.ohiovalley.org.

Sequela of TBI

- **What often underlies the challenges in return to work, school and major role are problems in:**
 - cognition (including memory and judgement)
 - impulse control
 - modulation of affect
 - regulation of mood. These areas are often referred to as the neurobehavioral cluster.

Strategies-Cognitive

- Decrease distractions (partitions at work, wear ear plugs, reduce noise e.g turn off TV while on the phone)
- Teach strategies to maintain/regain focus such as checklists, planners, use technology as appropriate
- Break down tasks into smaller steps
- Modify work load/expectations

Strategies-Cognitive

- Provide written and verbal instruction
- Model tasks whenever possible
- Encourage the individual to paraphrase instructions back to the speaker
- Enter instructions in log/smart phone/I pad etc.
- Use a digital recorder/smart phone app such as “Supernote” to enter reminders and instructions to review/reinforce later
- Have a template form available with frequently requested information (e.g. demographic, work history, etc.)

Build breaks into the day, an injured brain can become overwhelmed and easily overstimulated leading to increased risk of depression, irritability, **strategic napping** can be very restorative

Strategies-Behavioral

- Encourage individual to ask for time to organize thoughts
- Teach individual active listening techniques, such as repeating what they heard from the other person
- Promote questioning by individual in work/home/community situations when they are unsure of what to do

If at all Possible Screen for a History of Brain Injury

Two excellent screening tools:

The HELPS

&

The Ohio State University TBI Identification Method (go to <http://ohiovalley.org/tbi-id-method/> for information and a tutorial on the use of the OSU TBI ID)

In your handouts

References and Resources

- Slides 8,9,11-13 adapted from Dr. Mary Pepping of the University of Idaho's presentation *The Human Brain: Anatomy, Functions, and Injury*
- Brain Injury Association of America 703-236-6000, www.biausa.org
- Brain Injury Association of Maryland 410-448-2924, www.biamd.org
- Ohio Valley Center For Brain Injury Prevention and Rehabilitation, 614-293-3802, www.ohiovalley.org. Excellent SA TX resource & information
- www.headinjury.com. Good resource for memory aides and tips

Resources

For Returning Service Members

- Brainline, www.brainline.org Website funded through the Defense and Veterans Brain Injury Center offers civilians, returning service members with brain injury, families and professionals a variety of information and resources regarding life after brain injury.
- Americas Heroes at Work <http://www.americasheroesatwork.gov/> .This website is created to assist veterans with TBI and PTSD. The site has information about brain injury that can be applied to civilians. It is geared towards potential employers and can be used when educating an employer or potential employers about brain injury. The page dealing with employment supports is very comprehensive and can be found at <http://www.americasheroesatwork.gov/resources/factsheets/accommodatingTBI/>
- Traumatic Brain Injury: The Journey Home. <http://www.traumaticbraininjuryatoz.org/Program-Introduction.aspx> This site, of the Defense and Veterans Brain Injury Center and is an interactive video with accessibility features (e.g. option to enlarge the print) for families, professionals and individuals with TBI. Offers detailed pictures of the brain with descriptions of each part of the brain's function.

References and Resources

Rehabilitation Research and Training
Center on Traumatic Brain Injury
Interventions & New York Traumatic
Brain Injury Model System at the
Mount Sinai School of Medicine and
the Mount Sinai Rehabilitation
Research and Training Center
www.mssm.edu/tbinet

References and Resources

www.jan.wvu.edu/media/BrainInjury.html.

(V) 1-800-526-7234

(TTY) 1-877-781-9403

The Job Accommodation Network offers useful articles about working with individuals with brain injury on the job, and simple accommodations that can be used to maximize success on the job

Recommended Reading

- *I am the Central Park Jogger: A Story of Hope and Possibility* by Trisha Meili, 2003
- *Every Good Boy Does Fine: A Novel* by Tim Laskowski, 2003
- *Over My Head: A Doctor's Own Story of Head Injury from the Inside Looking Out* by Claudia Osborn, 2000

Recommended Viewing:

Beyond the Invisible: Living With Brain Injury

**A production of The Brain Injury
Association of New York State**

**This DVD is a production of the Brain
Injury Association of New York State**

contact them for a free copy at

518-459-7911

info@bianys.org

Recommended Viewing

Film released by Miramax in 2007

The Lookout

Starring Joseph Gordon-Levitt, Jeff Daniels,
Matthew Goode and Isla Fisher

Aside from being a great bank heist movie, this movie realistically depicts the struggles of a young man living with the aftermath of a traumatic brain injury at home, in the community and on the job.

Suggested use: Watch this movie and discuss the many uses of compensatory strategies throughout the film with individuals living w/TBI, their families and the professionals working with them

Contact:
Anastasia Edmonston
410-402-8478
anastasia.edmonston@maryland.gov

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Thank you!