Slide 1
Brain Injury Overview: What You Need to Know
Presented by Jess Nesbitt
Brain Injury Association of Maryland

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Brain Injury Association Of Maryland
Jess Nesbitt
Support Services Case Manager
She/her/hers pronouns

Slide 3
TODAY’S DISCUSSION
TO COVER
• Welcome & Remember You have a body
• Q&A
• General Brain Injury Overview
• Screening Tool
• Current research/best practices
• Resources

Slide 4
QUESTIONS & ANSWERS
Feel free to raise your hand, nod your head, or call out the answer when the correct answer is read.

Slide 5
HOW MANY PEOPLE IN THE US ARE TREATED IN EMERGENCY DEPARTMENTS, HOSPITALIZED, OR DIE AS A RESULT OF A TRAUMATIC BRAIN INJURY EACH YEAR?
• 231,840
• 2.8 million
• 1.2 Million
CDC, 2013

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2.8 Million Traumatic Brain Injuries a year
• 56,000 Die
• 282,000 Hospitalized
• 2.5 Million Treated and Released From ER
Up to 15% of those diagnosed with a mild TBI may have long-term problems.

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HOW MUCH DOES THE ADULT BRAIN WEIGH?
• 1.5 lbs
• 3 lbs
• 5 lbs

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WHICH OF THESE CELEBRITIES HAS NOT HAD A TBI?
• Tracy Morgan
• Ben Roethlisberger
• Anne Hathaway
• George Clooney

Slide 9
WHAT IS A TRAUMATIC OR ACQUIRED BRAIN INJURY?
Slide 10
Definitions
TRAUMATIC BRAIN INJURY (TBI)
- A TBI is defined as an insult to the brain caused by an external, physical force.
- Examples include: falls, car crashes, sports injuries, assaults
ACQUIRED BRAIN INJURY (ABI)
- An ABI is defined as an insult to the brain that occurs after birth caused by internal factors.
- Examples include: stroke, aneurysm, lack of oxygen to the brain (hypoxia and anoxia), tumor, traumatic brain injuries (TBI)

BRAIN INJURY ASSOCIATION OF AMERICA

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Acquired Brain Injury
- Aneurysm
- Tumor
- Hypoxia
- TBI
- Stroke

Slide 12
COMMON CAUSES
- Falls 47%
- Struck by/against 15%
- Traffic incidents 14%
- Assault 9%
- Unknown 8%
- Other 7%

www.brainline.org

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LEVELS OF SEVERITY
MILD -80%
- Loss of consciousness (LOC) <30 minutes
- Post-traumatic amnesia (PTA) <1 hour
MODERATE 10-13%
- Loss of consciousness 30 min. to 24 hours
- Post-traumatic amnesia 1 to 24 hours
SEVERE 7-10%
- Loss of consciousness > 24 hours
- Post-traumatic amnesia > 24 hours

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RISK FACTORS
Some groups are more likely than others to sustain TBIs.
AGE:
- Young children and older adults are more likely to sustain TBIs from falls. Adolescents have higher rates due to car crashes and intentional injuries.
SOCIOECONOMIC STATUS:
- People with lower income have decreased access to preventative measures (baby gates), lack of a safe place to play
GENDER:
- Men are twice as likely to sustain TBIs.
GROUPS WHO HAVE MULTIPLE, MILD TBIS:
- Athletes
- People who use drugs
- People who are homeless
- People who are incarcerated
- People who have mental illnesses
- Victims of domestic violence or childhood abuse

John Corrigan, Ph.D. Ohio Valley Center 2014

Anatomy

The Brain Is Complex

THE FRONTAL LOBE
The frontal lobe is the area of the brain responsible for our "executive skills" or higher cognitive functions. These include:
- Problem solving
- Spontaneity
- Memory
- Language
- Motivation
- Judgement
- Impulse control
- Social and sexual behavior

Adapted from Dr. Mary Pepping of University Of Idaho's Presentation "The Human Brain: Anatomy, Functions & Injury."

Executive Functioning
- Self-monitoring
- Flexibility
- Inhibition
- Initiation
- Emotional Control
- Working memory
- Planning & organizing
- Organization of materials

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.

PARIETAL LOBE
The parietal lobe plays a role in our sensations of touch, smell, and taste. It also:
- processes sensory and spatial awareness
- is a key component of our eye-hand coordination
- contains Wernicke's area which is responsible for the comprehension of speech
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OCCIPITAL LOBE
• The occipital lobe is at the rear of the brain and control vision and recognition.

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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.
• The ridges can result in injury to the frontal and temporal lobe during rapid acceleration (like in a car crash).

Queensland Brain Institute & The Mayo Clinic

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MECHANISM OF INJURY
Contact/Impact
• Result from brain coming into contact with an object (skull, external object)
• Often results in contusions, lacerations, hematomas
Inertial
• Result from rapid acceleration or deceleration
• Produces more widespread injury (Diffuse Axonal Injury)
Most injuries result from a mixture of both forces

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WHAT EFFECT CAN A BRAIN INJURY HAVE ON SOMEONE?

Slide 26
What might it feel like to live with a condition that makes it hard to follow directions?

Slide 27
If you have met one person with a brain injury, you have met one person with a brain injury.

Slide 28
PHYSICAL CHANGES
• Change in or loss of vision
• Change in or loss of hearing
• Speech can be slowed or slurred
• Spasticity (muscle contraction) and tremors
• Seizures
• Motor skills and balance
• Fatigue and weakness
• Change in taste or smell

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COGNITIVE CHANGES
Effects of brain injury can look like a developmental disability or someone 'being difficult.'
• Memory
• Attention
• Concentration
• Processing
• Problem solving
• Confabulation
• Lack of self-awareness
• Organization
• Self-perception
• Aphasia (expressive and receptive)
- Persistence (perseveration)
- Executive skills

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**BEHAVIORAL CHANGES**

Effects of brain injury can look like a mental illness.
- Depression and anxiety
- Mood swings
- Difficulty controlling emotions
- Trouble recognizing social cues
- Difficulty with initiation
- Difficulty in relationships (forming new ones, maintaining old ones)

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**LACK OF AWARENESS**

Self-awareness deficits in brain injury have been reported as occurring in up to 97% of patients with Traumatic Brain Injury. - Sherer, M, et al, 1998.

**TRUST AND VERIFY**

**Slide 32**

Brain injury is often hidden or "invisible." Which is why we screen!

**Slide 33**

**SCREENING TOOLS**

**Slide 34**

**HELPS BRAIN INJURY SCREENING TOOL**


**Slide 35**

**HELPS AT A GLANCE**
- Brief - 5 questions
- Includes additional prompts or considerations for surveyor
- Accounts for ABI and TBI
- Created for professionals whose expertise is not TBI
- Not a diagnostic tool

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**HELPS AT A GLANCE**
- H - Have you ever hit your head or been hit on the head?
- E - Were you ever seen in the Emergency room, hospital, or by a doctor because of an injury to your head?
- L - Did you ever lose consciousness or experience a period of being dazed or confused because of an injury to your head?
- P - do you experience any of these problems in your daily life since you hit your head? (headaches, dizziness, anxiety, difficulty concentrating, etc)
- S - Any significant sicknesses? (This accounts for acquired injuries)

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**AT A GLANCE**

Screenshot: HELPS Brain Injury Screen Tool form.

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**HELPS AT A GLANCE**

Scoring the HELPS Screening Tool:

A HELPS screening is considered positive for a possible TBI when the following 3 items are identified:
1. An event that could have caused a brain injury (yes to H, E or S), and
2. A period of loss of consciousness or altered consciences after the injury or another indication that the injury was severe (yes to L or E), and
3. The presence of two or more chronic problems listed under P that were not present before the injury.

Note:
- A positive screening is not sufficient to diagnose TBI as the reason for current symptoms and difficulties- other possible causes may need to be ruled out.
- Some individuals could present exceptions to the screening results, such as people who do have TBI-related problems but answered “no” to some questions
- Consider positive responses within the context of the person’s self-report and documentation of altered behavioral and/or cognitive functioning

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OSU-TBI AT A GLANCE
- Elicits more details than HELPS
- Identifies possible undiagnosed TBI
- Brief - 3-5 minutes; 3 steps with multiple questions
- Does not account for ABI (yet)

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OSU-TBI
Screenshot: OHIO State University TBI Identification Method-Interview Form

**Slide 41**
OSU-TBI
Step 1
- Ask all five questions before eliciting further detail and note the cause in the box.
- If someone answers no to all five questions, conclude the interview.

**Slide 42**
OSU-TBI
Step 2
- Now you can ask questions about the details of the injuries.
- You'll be asking about loss of consciousness and age of injury

**Slide 43**
OSU-TBI
Step 3
- This will determine if someone has had a repeated injury.
- Ask about the most severe injury recalled and effect (loss of consciousness or dazed/memory gap).

**Slide 44**
OSU-TBI Interpretations
- WORST: loss of consciousness longer than 30 minutes = a moderate TBI. Longer than 24 hours is severe. The longer the loss of consciousness the more cognitive and emotional problems you may see.
- FIRST: If someone has a TBI early on in life, it can have long term consequences

**Slide 45**
OSU-TBI Interpretations
- MULTIPLE: Multiple moderate injuries or concussions can result in symptoms similar to a severe injury
- RECENT: Recent injuries can cause headaches, reduced emotional control, poor concentration, memory lapses

**Slide 46**
Next Steps After Screening
- Learn more about TBI or ABI
• Consider simple accommodations you can employ
• Learn about best practices for vocational rehab and brain injury

Slide 47
Best Practices & Current Research

Slide 48
EVIDENCE-BASED SUGGESTIONS FOR EMPLOYMENT SUCCESS
• Providing VR services early in the rehabilitation process
• Creating supportive work environment
• Providing cognitive skills training
• Supplying assistive technology and training in its use
VR Research in Brief (2012)

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GENERAL RECOMMENDATIONS that may not be possible:
• Neuropsychologists can provide support by:
  o assessing current cognitive and emotional functioning
• Other supports in a person’s life could...
  o provide education to the individual about common effects of injury
  o teach stress management
  o work on other skills training: communication, goal setting, problem solving, controlling emotions
Center on Knowledge Translation for Disability Research (2015). Employment after Traumatic Brain Injury

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GENERAL RECOMMENDATIONS that may not be possible:
• Employment specialists can provide support by:
  o trying compensatory strategies
  o being open to trying new strategies if others are unsuccessful
  o support an individual through problem solving, providing positive feedback
  o phasing out with mastery of task
  o finding long term supports that can be available as changes or problems arise

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PERSON-CENTERED PLANNING
• all strategies must be tailored to the individual
• plans should be informed by a person’s strengths

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CONSIDERATIONS
Questions to consider:
1. What limitations is the employee with a TBI experiencing?
2. How do these limitations affect the employee and the employee’s job performance?
3. What specific job tasks are problematic as a result to these limitations?
4. What accommodations are available to reduce or eliminate these problems? Are all possible resources being used to determine possible accommodations?
5. Has the employee with a TBI been consulted regarding possible accommodations?
6. Once accommodations are in place, would it be useful to meet with the employee with a TBI to evaluate the effectiveness of the accommodations and to determine whether additional accommodations are needed?
7. Do supervisory personnel and employees need training regarding TBI’s?

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FOR MORE STRATEGIES, BE SURE TO ATTEND DEB COTTRILL’S PRESENTATION!
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RESOURCES
Understanding Brain Injury
- How to Help Someone Who has a Brain Injury bit.ly/helpsomeonewithbi

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RESOURCES - EMPLOYMENT
- Job Accommodation Network, Brain Injury: askjan.org/disabilities/Brain-Injury.cfm
- Supported Employment for Individuals with Traumatic Brain Injury: vcurrtc.org/training/webcourses/tbi.cfm

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RESOURCES
Brainline: All about brain injury and PTSD
- Brain Injury Survival Kit, Cheryle Sullivan, MD, 365 Tips, Tools, &Tricks to Deal with Cognitive Function Loss.

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THANK YOU!
Feel free to reach me at nesbitt@biamd.org or 410-400-6550