



# **Filling the Knowledge Gap: Brain Injury Training for Educators**

# Traumatic Brain Injury 101: An overview

PRESENTED BY  
DANIELLE M. PLOETZ, PHD  
PEDIATRIC NEUROPSYCHOLOGIST

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## Big Picture Outline

- I. Neuroanatomy and neurophysiology
- II. Defining Brain Injury
  - i. Acquired Brain Injury (ABI) versus Traumatic Brain Injury (TBI)
  - ii. Severity of injury classification
  - iii. Mechanism of injury
  - iv. Primary and secondary injuries
- III. Common Sequelae after TBI and trajectory
- IV. mTBI (Concussion) – myth versus fact

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## I. Neuroanatomy and Neurophysiology

THE BASICS

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## The Brain

- Your brain weighs about 3lbs, or just under 1.5kg
- Your brain is connected to your spinal cord by the brain stem
- Part of CNS
- It is divided into 3 primary regions:
  - Forebrain (Cerebrum)
  - Midbrain (Middle of brain)
  - Hindbrain
    - (Pons, Medulla oblongata, and cerebellum)
- The cerebral cortex is the largest part of your brain.
  - It contains 4 pairs of lobes: the frontal, the temporal, occipital, and parietal lobes

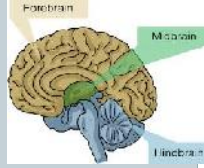


Image downloaded from [www.melbournechapter.net/explore/psychology-clipart-midbrain/](http://www.melbournechapter.net/explore/psychology-clipart-midbrain/)

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## The Brain

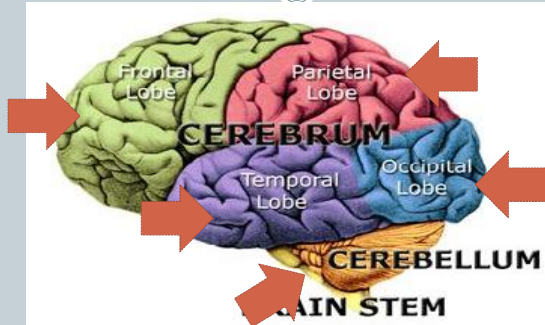


Image from <https://www.seattlecca.org/diseases/brain-spinal-cord-cancers/brain-spinal-cord-cancers-facts/anatomy-brain-and-spinal-cord> and credited to UW Department of Neurosurgery, Janet Schukar.

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## The Brain

- The skull protects the brain from penetrating injuries
- The meninges contain 3 membranous envelopes that surround the brain and spinal cord
  - Primary function to protect CNS
    - Pia, Arachnoid, and Dura
  - Each have own function
- Cerebrospinal fluid fills ventricles and the spaces between the Pia and Arachnoid

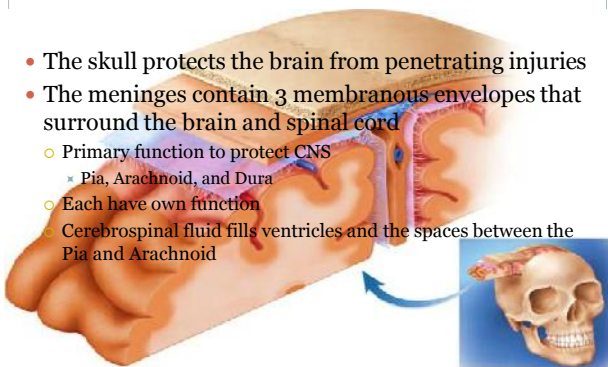


Image downloaded from <http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/duramater-dura-mater-sinuses/>

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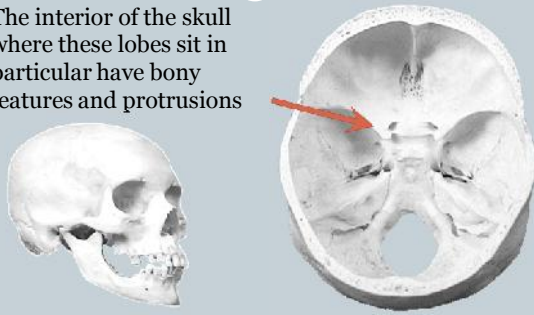
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## Skull interior anatomy

- The interior of the skull where these lobes sit in particular have bony features and protrusions



A product of the Behavioral Health Administration, The Mental Health Management Agency of Frederick County & The Howard County Mental Health Authority. Updated 2016.

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## The Brain

- The brain is made up of around 100 billion nerve cells and even more support cells, which provide nourishment to the nerve cells
- Axons are part of the nerve cell
  - Carries information quickly
  - Myelin are akin to insulation
  - Can be very long

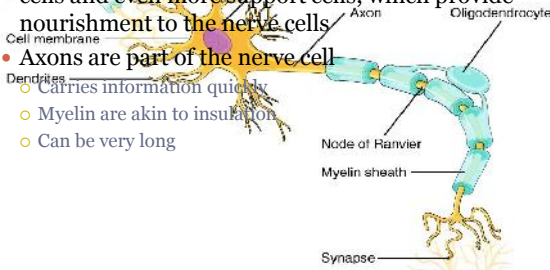


Image modified from "Neurons and glial cells: Figure 2a," by OpenStax College, Biology (CC BY 3.0).

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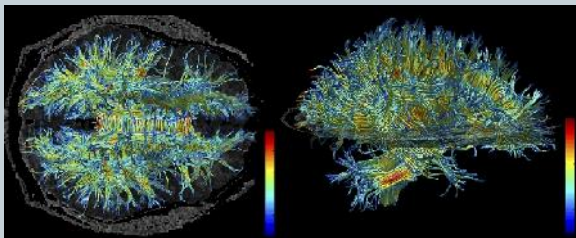
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## White matter tracts



By Wenples - Kubicki M., McCarley R.W., Westin C-F., Park H-J., Maier S.E., Kikinis R., Jolesz F.A., Shenton M.E. A review of diffusion tensor imaging studies in schizophrenia. J Psychiatr Res. 2007 Jan-Feb;41(1-2):15-30. PMID: 16023676. PMCID: PMC2768134. CC BY-SA 3.0. <https://commons.wikimedia.org/w/index.php?curid=10267934>

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- ✓ Attention
- ✓ Language
- ✓ Motivation
- ✓ Judgment
- ✓ Social behavior
- ✓ Emotion Regulation
- ✓ Conscious Movement
- ✓ Executive Functioning
  - ✓ Problem solving
  - ✓ Impulse Control
  - ✓ Working memory



**Frontal Lobes**

Image downloaded from <https://www.picswe.com/find/frontal-lobe-pics-o8.html>

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- ✓ Memory
- ✓ Language
- ✓ Smell
- ✓ Auditory processing
- ✓ Aggression
- ✓ Sexual behavior
- ✓ Emotions

**Potential Deficits**

- ✓ Difficulty understanding Verbal Problem solving
- ✓ Recognition of faces and objects
- ✓ Difficulty understanding tone
- ✓ Difficulty learning new information
- ✓ Aphasia
- ✓ Difficulty with emotional regulation



**Temporal Lobes**

Image downloaded from <https://www.picswe.com/pics/temporal-lobe-74.html>

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- ✓ Spatial Awareness
- ✓ Perception
- ✓ Body awareness with objects and interacting with space

**Potential Deficits**

- ✓ Reading
- ✓ Neglect
- ✓ Right/Left Confusion
- ✓ Impaired navigation of environments
- ✓ Impaired sense of touch
- ✓ Difficulty with visual attention



**Parietal Lobes**

Image downloaded from <http://podemosmadridchamartin.info/parietal#>

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✓ Visual processing

✓ Vision

Potential Deficits

- ✓ Visual field cuts
- ✓ Word blindness
- ✓ Hallucinations
- ✓ Inability to recognize movement
- ✓ Difficulty reading and writing
- ✓ Difficulty identifying colors and locating objects



**Occipital Lobes**

Image downloaded from <https://www.medicalnewstoday.com/articles/322136.php>

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✓ Balance

✓ Coordination

✓ Skilled motor activity

✓ A little bit of everything

- ✓ Language
- ✓ Executive Functioning
- ✓ Visual-Spatial processing



**Cerebellum**

[https://news-media.stanford.edu/wp-content/uploads/2017/03/15145109/cerebellum\\_feature.jpg](https://news-media.stanford.edu/wp-content/uploads/2017/03/15145109/cerebellum_feature.jpg)

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✓ Breathing

✓ Heart rate

✓ Arousal/ consciousness

✓ Sleep/wake functions

✓ Attention/ Concentration



**Brain Stem**

<https://gomerblog.com/2014/12/fearless-neurologist/>

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## Big Picture Outline

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## II. Defining Brain Injury

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## Definitions – TBI and ABI

- Traumatic Brain Injury (TBI) is caused by a bump, blow, or jolt to the head or penetrating head injury that disrupts the normal function of the brain
- An acquired brain injury (ABI) is an injury to the brain, which is not hereditary, congenital, degenerative, or induced by birth trauma. The injury results in a change in neuronal activity, which affects the physical integrity, the metabolic activity, or the functional ability of nerve cells in the brain. It can be considered the umbrella definition for TBI but also includes:
  - Stroke
  - Tumor
  - Anoxia/Hypoxia
  - Infection

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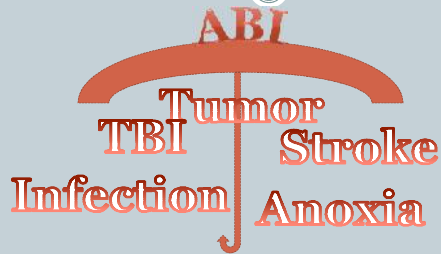
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## ABI is an umbrella term



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## TBI statistics across the lifespan – CDC 2013

- 2.8 million/yr injured
- 2.5 million/yr seek emergency care
- 282,000/yr are hospitalized
- 50,000/yr die with TBI
- 80,000/yr result in long-term disability
- 5.3 million Americans with TBI disability
- Up to 6.5 million Americans with TBI

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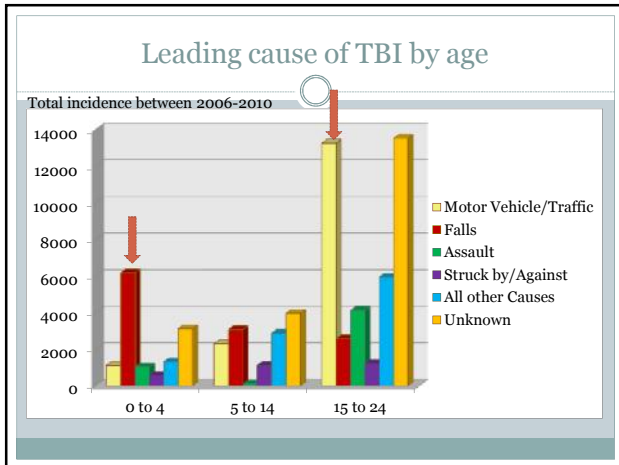
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### Mechanism of Injury

- Penetrating vs. Non-Penetrating “closed” injury
- Closed-head injury biomechanics:
  - A. Deformation – Direct impact can distort skull injuring underlying brain tissue
  - B. Contact – moving brain strikes inner surface of skull
  - C. Rotational – nonlinear & rotational forces cause acceleration or deceleration of brain tissue

Image obtained from <https://musculoskeletalkey.com/traumatic-brain-injuries/#9> Figure 20-9

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### Coup-Contrecoup injury

<https://www.injurylawyercanada.com/blog/suffering-from-a-whiplash-injury-you-may-have-a-brain-injury/>

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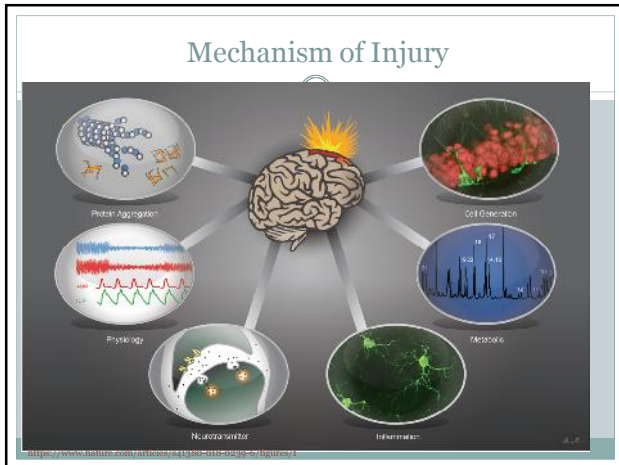
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### Pathological effects

- **Primary injury – Anatomic injuries**
  - Occur upon impact and include:
    - » Skull fractures
    - » Contusions
    - » Hematomas
    - » Hemorrhages
    - » Injury to Axons and blood vessels
- **Secondary injury – Metabolic injuries**
  - Occur following cascade of events after tissue damage or as result of the consequences of mass effect (e.g., hematomas)

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### Determining Severity

Glasgow Coma Scale		
Eye opening	Verbal Response	Basic Motor Response
Spontaneous...4 To speech...3 To pain...2 Not open...1	Conversation...5 Confused...4 Nonsense...3 Sounds...2 Silence...1	To command...6 To pain--- a. localizing...5 b. Generalizing...4 c. Arm flexion...3 d. Arm extension...2 e. No response...1
Total score = E+V+M		

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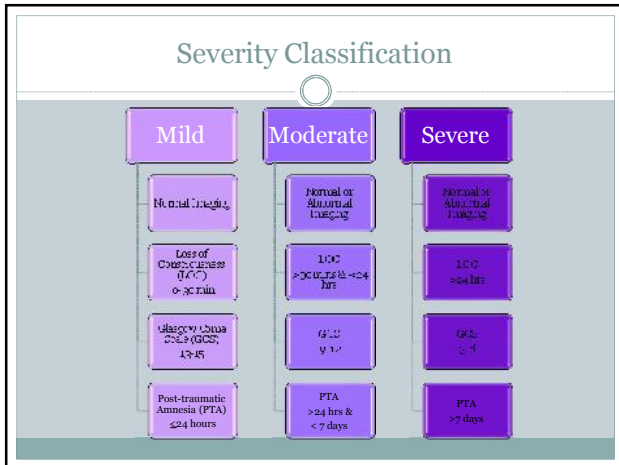
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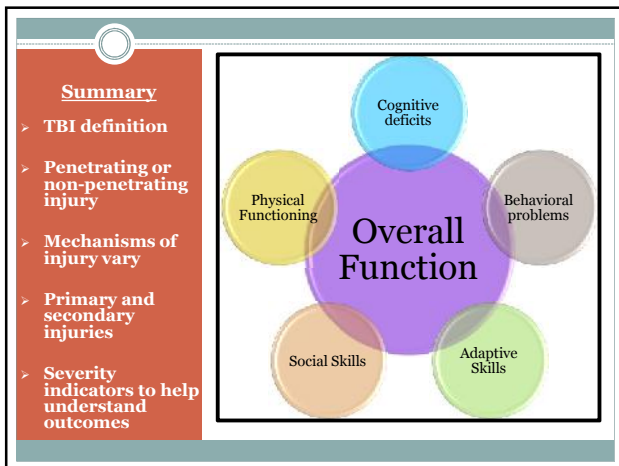
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## III. Common Sequelae after TBI and Trajectory

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## General Patterns of Dysfunction by Location of Injury

### Right Side of Brain

- Impairments in visual-spatial perception
- Left-neglect, or inattention to the left side of space or body
- Decreased awareness of deficits
- Altered creativity and music perception
- Loss of the gestalt, or "big picture"
- Visual memory deficits
- Decreased control over left-sided movements

### Left Side of Brain

- Difficulties in understanding language (receptive language)
- Difficulties in speaking or verbal output (expressive language)
- Catastrophic reactions (depression, anxiety)
- Verbal memory deficits
- Decreased control over right-sided movements
- Impaired logic
- Sequencing difficulties

### Diffuse Injury

- Reduced thinking speed
- Increased confusion
- Reduced attention and concentration
- Increased fatigue
- Impaired cognitive functions across all areas



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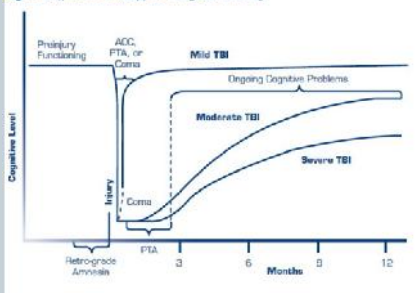
## No injury is the same

- Brain injuries are individual and diverse
  - There are some commonalities but each one is unique
- Fastest recovery occurs early (i.e., first 6 months) on during the injury
  - There is continued recovery but it is at a much slower pace

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## Hypothetical Cognitive Recovery Paths for TBI

Figure 3 Hypothetical recovery paths of cognitive functioning



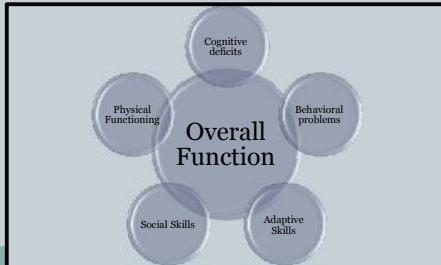
Hypothetical cognitive function recovery paths. Employee Education System. Traumatic Brain Injury: Independent Study Course. Department of Veterans Affairs, 2010; p. 17; AOC, alteration of consciousness; PTA, posttraumatic amnesia; TBI, traumatic brain injury.

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## TBI in children and adolescents

- **Functional Impact**

- Children are not little adults – the brain is continuing to develop



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## Example

- At age 5 or 6, supports put in place for all children (general education) may be enough



- In middle or high school, demands and expectations increase. Therefore the same supports may not be enough and struggles the child experiences may be more apparent to others



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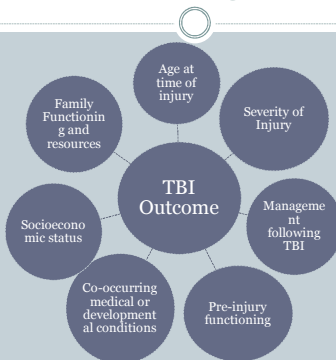
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## Factors affecting outcome



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## Sequelae of TBI

- Reminder every injury is unique
- Make sure to have information from a healthcare professional about the individuals strengths and weaknesses.



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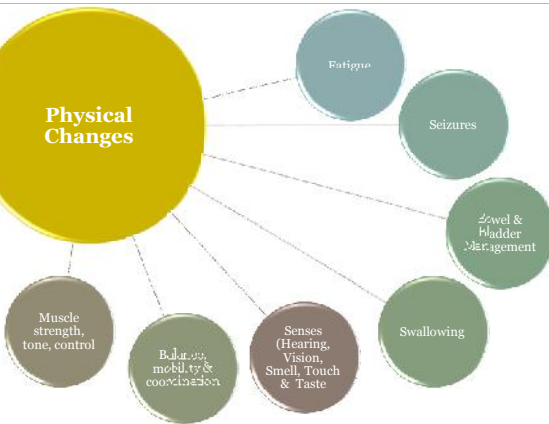
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### Physical Changes



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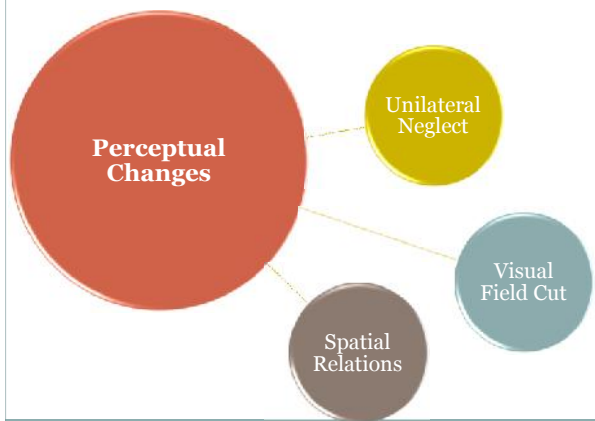
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### Perceptual Changes



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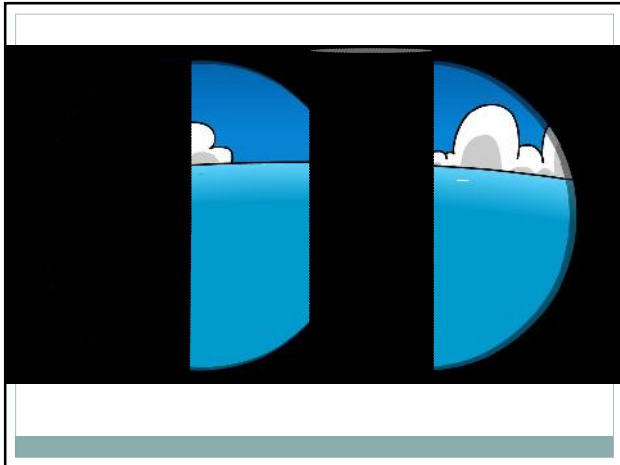
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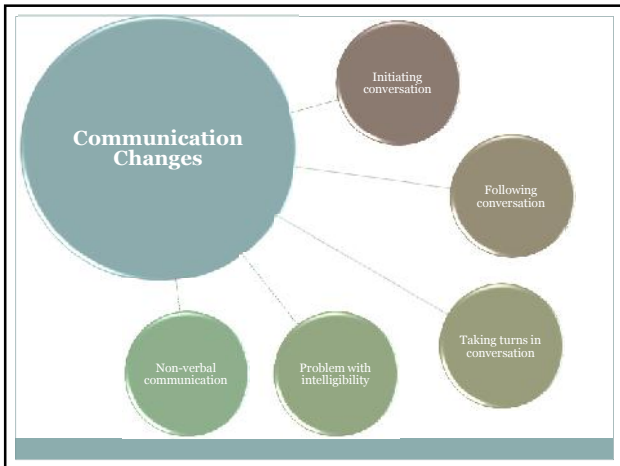
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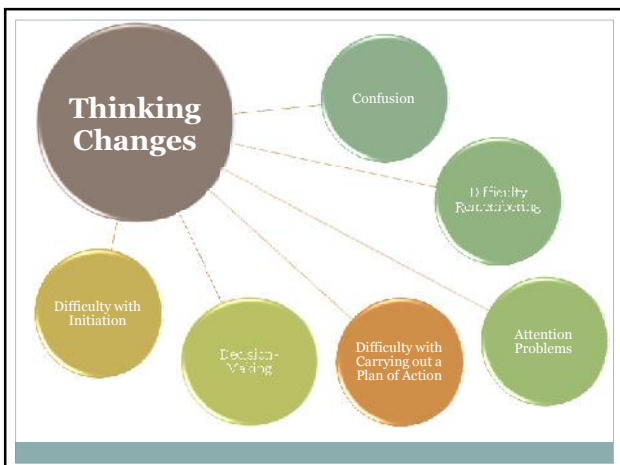
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## Attention Problems

- An attention deficit might look like trouble paying attention or it might look like ...

○ (Capuco & Freeman-Woolpert)



- He keeps changing the subject.
- She doesn't complete tasks.
- He has a million things going on and none of them ever gets completed (*for example...*).
- When she tries to do two things at once she gets confused and upset.

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## Memory Problems

- A memory deficit might look like trouble remembering or it might look like.....

○ (Capuco & Freeman-Woolpert)



- She frequently misses appointments-avoidance, irresponsibility.
- He says he'll do something but doesn't get around to it.
- She talks about the same thing or asks the same question over and over-annoying perseveration.
- He invents plausible sounding answers so you won't know he doesn't remember .

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## Executive Functioning

- A deficit in executive skills might look like the inability to plan and organize or it might look like...

○ (Capuco & Freeman-Woolpert)



- "Uncooperative"
- "Stubborn"
- "Lack of follow through"
- "Laziness"
- "Irresponsibility"

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## Emotional Regulation

- Emotional regulation difficulties might look like overreacting or they may look like...



- She cried for no apparent reason.
- He was disproportionately upset when he was told to put his paper away.
- “mismatch between context and emotional display”

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## In Summary

- A TBI of any severity can result in changes that affect the child's daily life
- TBI research is ongoing to help provide better information on recovery
  - Currently, research suggests most rapid recovery occurs early after injury
- Every injury is different, every individual is different
  - We need information to help us understand the unique pattern of strengths and difficulties

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## In Summary

- Finally, TBI in children has added complexity as it affects the brain as it is developing



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## IV. mTBI (Concussion) – Myth Versus Fact

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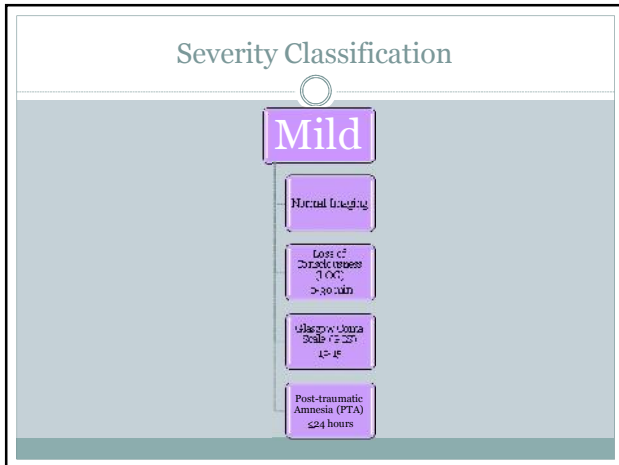
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### Myth Versus Fact 1

- mTBI only occurs when there is a loss of consciousness or you get “knocked out”
- mTBIs can occur with or without losing consciousness

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### Myth Versus Fact 2

- After a concussion you need to refrain from all activity.
- After a few days rest, there is actually research to suggest

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### Myth versus Fact 3

- Helmets make you concussion proof
- Helmets are designed to prevent skull fractures, not concussions.

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### Myth versus Fact 4

- Concussions all resolve in a week.
- Every concussion is different, and each child is different. Some improve in a day or two, but it's not uncommon for it to take weeks or months to recover from a concussion.

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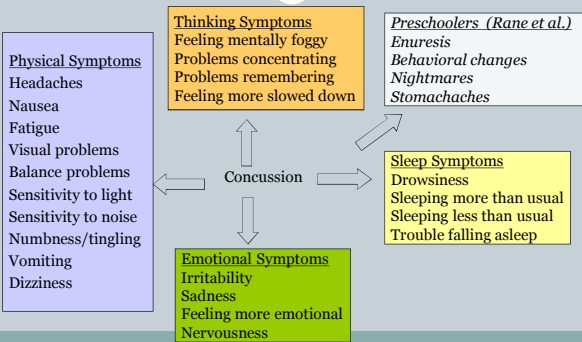
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### Common Symptoms of Concussion



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## Most reported symptoms

- **Headache – number 1 reported symptom**
- Nausea
- Dizziness
- Disorientation/Mental status changes
- LOC
- PTA
- Vomiting

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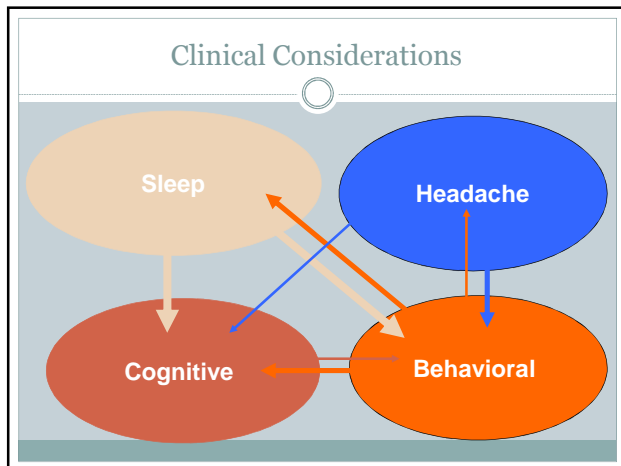
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## Clinical Considerations



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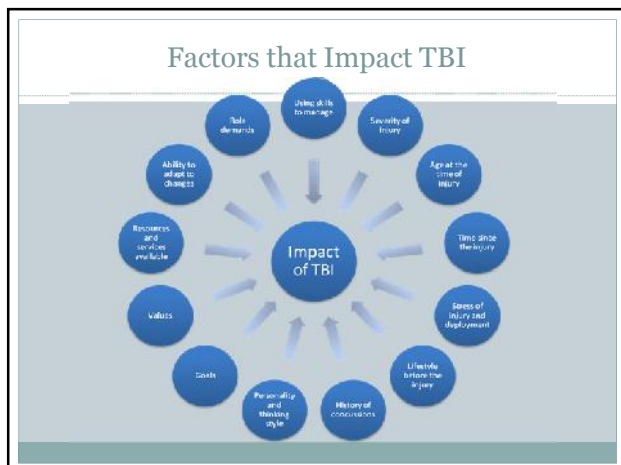
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## Factors that Impact TBI



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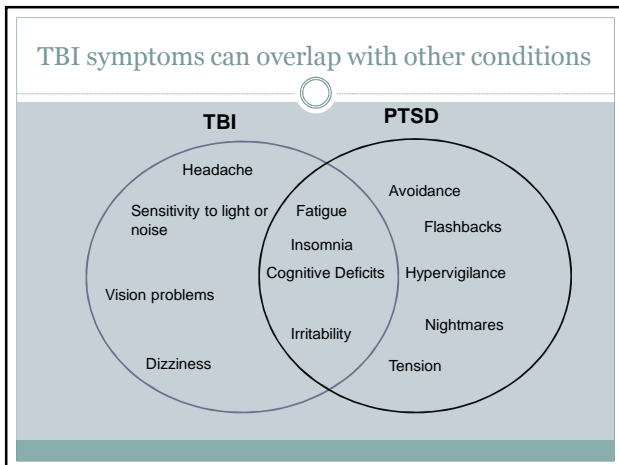
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### Guidelines for management of mTBI

- For mTBI there is a consensus statement (McCrory et al., 2016 and new CDC guidelines published in JAMA Pediatrics September 2018) that provide information on diagnosis and management

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### Management of mTBI

- Importance for health care professionals to monitor recovery and provide recommendations for:
  - Sleep
  - Return to physical activity
  - Return to cognitive activity
  - Return to school
  - Education about recovery process

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## Summary

- A concussion is a type of TBI and referred to as a mild TBI
- It is important to know that people experience a range of symptoms and timeline for recovery and return to activities
- Returning to cognitive and physical activity should be done gradually and if necessary under the guidance of professionals
  - Pacing is recommended as tolerated by symptoms
- **Research is ongoing**
  - To determine ideal duration and intensity of rest AND
  - For recommendations regarding timing of introducing cognitive and physical activity

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## Upcoming segments

- Educational management of students with TBI
- Things to consider about the special education process
- Best teaching practices

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# Emotion Regulation Strategies for Educators

Danielle Ploetz, PhD  
Pediatric Neuropsychologist  
Kennedy Krieger Institute

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## Strategies Video Series

- I. Attention
- II. Executive Functioning
- III. Emotion Regulation
- IV. Memory

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## Outline

- Define Emotion Regulation
- Strategies to prevent dysregulation
- Strategies to support the student in the moment
- Putting it together - Example
- Summary

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## Defining Emotion Regulation

- Emotion regulation can be defined as the ability to modulate and regulate your emotional responses
- Emotion regulation ability is interconnected to the broader domain of executive functioning
  - Inhibition/Impulse control
- Poor emotional control can be expressed in different ways.

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## Emotional Regulation

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- She cried for no apparent reason.
- He was disproportionately upset when he was told to put his paper away.
- "mismatch between context and emotional display"
- They can go from zero to 100 very quickly with any emotion



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## Translating Research to Practice



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## Disruption to life

- Emotion regulation can be helpful in day to day life
- Disruption to this function can make it difficult to engage in academic and social activities



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## Managing the triggers?

Using the ABC approach to challenging behavior, we can manage the antecedents, or triggers, to reduce the chances of a behavior occurring.

- Develop a positive rapport
- Establish consistent routines
- Provide rules/education about appropriate ways to communicate
- Involve the person in discussing behavior issues
- Avoid or minimize known triggers
- Use distraction or redirection away from the trigger
- Discuss these triggers with the person
- Know what they are using as possible coping strategies (deep breathing, mindful activity, switching to a preferred activity, etc.)
- Suggest and encourage these strategies when a trigger occurs.

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## Strategies

- These challenges do not typically occur in isolation
- May be helpful to utilize strategies for other areas that the child may be struggling with for example executive functioning or memory



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## How do I support my student?

1. Stay calm
2. Allow for time to regroup
3. Hear them out
4. Respond positively and provide feedback/support as warranted
5. Gently redirect them to another activity or topic.

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## Positive reinforcement

- This is generally the most effective strategy. An incentive is given immediately when a desired behavior occurs. For example, Kevin usually becomes quiet when anxious then suddenly starts shouting at everyone. He is learning to tell family members when he is getting anxious and do his deep breathing exercises. Every time he remembers to do this, his actions are praised.



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## Positive reinforcement con't

- Positive reinforcement is not bribery - reinforcement comes after a task is completed, bribery is offered before. Try to make sure the reinforcer is practical, ethical and valid for the behavior being targeted. Timing is critical - ensure the positive reinforcement happens immediately after the desired behavior.
- Keep in mind that lengthy "behavioral contracts" may not be appropriate if the individual has problems with working memory or awareness.

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## Giving feedback

- After a brain injury, a person may become unaware of what is appropriate and inappropriate behavior. They may also have trouble interpreting facial expressions or non-verbal language that others are upset. We need to provide immediate clear verbal feedback on inappropriate behaviors.



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## Redirection

- Redirection can involve distracting a person when a trigger for behavior occurs, or redirecting them when a behavior is occurring. It is often used for repetitive behaviors such as constantly talking about the same topic. It is often effective when combined with positive reinforcement as well.



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## Ignoring the behavior

- In some cases, behavior occurs to get attention, so the best strategy may be to ignore it. As with many of these techniques, tactical ignoring is best linked with positive reinforcement. For example, a child is ignored during an angry outburst, but is rewarded with praise, a treat or favorite activity once the outburst is over.



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## Putting it all together - Example

- Kevin – a 13 year old young man who sustained a severe TBI about a year ago.
- Kevin gets anxious and has a hard time communicating his concerns. He will sometimes yell or rip up assignments for seemingly no reason.
- What do we know about Kevin's triggers?
- What are strategies we learned Kevin was working on to cope?
- How can you support him in a moment of stress?

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## Case example

- What do we know about Kevin's triggers?
  - Well we know he can become overwhelmed easily with large assignments
  - We can ask him to do every other problem on the page, or to write one response at a time – maybe we chunk his assignments or help with prioritizing tasks
  - Maybe Kevin also gets frustrated more easily because things take longer to do – thinking and motor planning
    - So we give him extended time or an alternative way to complete the task that accommodates his motor challenges

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## Case example

- What are strategies we learned Kevin was working on to cope?
  - We know from talking with his parents that he is working on deep breathing, activity pacing, and learning to communicate his needs
    - We also know that Kevin struggles with communicating, especially when faced with a challenging task and doesn't always think about asking for help first

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## Case Example

- How can you support him in a moment of stress?
  - First, stay calm – speak in a neutral voice
  - For Kevin, we know that he has a chart to refer to – we know that he needs a verbal cue to look at the chart or he won't be able to independently choose how he can be helped – so we gently state “Kevin, I can see that you are getting frustrated. Let's take a look at your chart to help you.”
  - This visual cue can be helpful to allow the child to name their feelings, to take a mental break from whatever they are doing, and to allow them the opportunity to use some of their coping strategies or even ask for help if that is needed.
  - Finally providing feedback/reinforcement for engaging in these can be reassuring and increase the likelihood of them using strategies again

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## Emotion regulation sheet

### Strategies for feeling CHALLENGED

- STOP: Name your feelings. Calm down.
- More time/Take a break
- “Look Back” (self-reflect)
- Ask for help
  - Choices
  - Hint
  - Say it a different way
  - Repeat it
  - Write it down
  - See a picture
  - Show me



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## Circling Back - Summary



- Gather as much information as possible about the child – Neuropsychology evaluations, speech and language evaluations, medical documents, PT and OT evaluations
- These challenges are dynamic, multi-variate, and evolving
- Brain injuries are individual and diverse
  - There are some commonalities but each one is unique
- It is important to individualize and fade accommodations as necessary
- Teachers play a key role!

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## Summary

- It is important to individualize and fade accommodations as necessary
- As most are aware, the Universal Design for Learning (UDL) provides a framework
  - Under the engagement guideline you can find options related to supporting self-regulation
  - <http://udlguidelines.cast.org/engagement/self-regulation>
  - UDL Check point 9.1, 9.2, and 9.3
- Teachers play a key role!



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## Resources

- Book about emotion and instructional design: Engage the brain: How to design learning that taps into the power of emotion by Allison Posey
- Book about teaching mindfulness to young children: Planting seeds: Practicing mindfulness with children by Thich Nhat Hanh
- Book about Emotion Regulation tools for kids with ADHD: Learning to feel good and stay cool by Judith M. Glasser, PhD



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Thank you!



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## Attention Strategies for Educators

ALI ADLER, M.A.

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### Attention - Definition



The process of selecting the most relevant stimuli while filtering out less relevant information.

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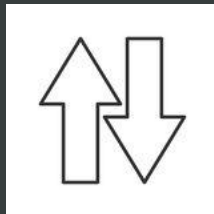
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### Conceptualizing Attention

Bottom-Up  
Stimulus Driven

Top-Down  
Goal Oriented



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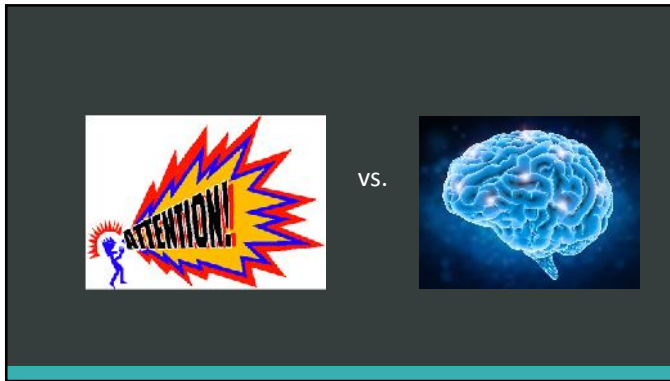
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### Types of Attention

- Selective attention
- Divided attention
- Alternating attention
- Sustained Attention

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### Selective Attention

The ability to choose one stimuli over another.

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## Divided Attention



The ability to attend to more than one environmental factor at the same time.

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## Alternating Attention

The ability to switch your focus from one stimuli or activity to another.

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## Sustained Attention



The ability to focus on a particular task for a continuous amount of time.

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## Attention

The basis for all higher level skills and cognition.



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## Attention post-TBI vs. ADHD

- Different anatomical framework
- Recovery/improvement differences

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## Attention Difficulties - Manifestation



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### Deficits in Selective Attention

- Easily distracted
- Difficulty remembering
- Off task and can't return independently
- Difficulty following rules

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### Deficits in Divided Attention

- May become easily confused
- May not start a task

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### Deficits in Alternating Attention

- May complete one task but not switch to another.
- Difficulty with change in schedule/routine.
- May demonstrate difficulty attending to a new task, may stay stuck on the previous task.
- May make off-topic comments.

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## Deficits in Sustained Attention

- Difficulty attending to task for more than a short period of time
- Difficulty with increased length and complexity of language
- May not complete the assignment
- Appear spacey and forgetful
- Presents with inconsistent performance
- Difficulty following conversation/lecture
- Difficulty working independently

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## Treatment for Deficits in Attention

- Pharmacological Treatment
- Cognitive Retraining
- Classroom-based Strategies



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## Strategies

ABC's of Addressing  
Attention in the Classroom  
Setting



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### Accommodations

- Explicit instruction, direct attention to task
- Reduce distractions
- Clear desk
- Automatization of skill
- Help with organization to provide framework for attention
- Break assignment into manageable parts in accordance with attention span
- Provide copy of notes and directions
- Teach one concept at a time

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### Accommodations

- Encourage self-talk
- Number steps/tasks
- Use pictures/use bottom-up attention as needed
- Actively engage the student
- Review/overlearning
- Reduce complexity
- Reduce amount of information

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### Behavioral Interventions

- Provide breaks
- Frequently check for on-task behavior
- Complete FBA and BIP

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## C Consistency

- Predictable routine
- Structure throughout day
- Consistency from all providers

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## D Direct Instruction

Teach "attention"

<http://www.understood.org/~media/5c05e59b4dc14a27bd0b1daf1a694359.pdf>

SLANT

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## E Environmental Cues



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## Functional Impairment/Functional Solutions

- Make instruction real and meaningful.
- Pair with overlearned skill.
- Make instruction motivating.
- Use Multi-sensory instruction.
- Make the material relevant.
- Use bottom-up attention.



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## Goals

- Ensure the student understands the task.
- Have the student retell the directions to ensure focused on what needs to be done.
- Ensure attention concerns are documented on the IEP in the form of a goal.

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## Help

- Teach the student to ask for help.
- You, as the teacher, seek help when needed. If strategies are not working, stop and revise.



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### Summary

- Implement “A,B,C’s” strategies
- Importance of Data collection
- Provide support when needed
- Role of teacher



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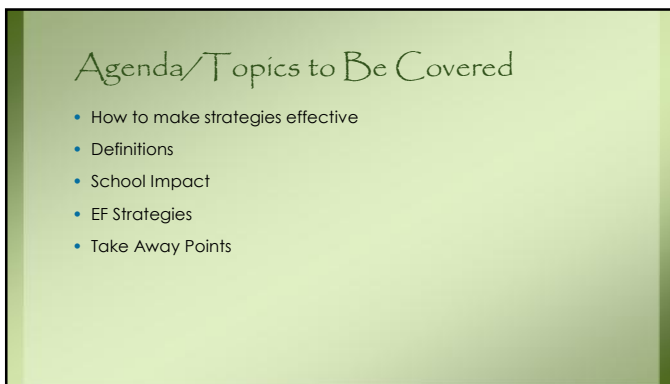
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## EF Strategies Caveat

- Minimal research on EF rehabilitation in children.
- Many strategies do not demonstrate scientifically validated effectiveness.
- Strategies covered in this presentation are based on informal clinical work with students with TBI.



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## Classroom Strategies

In order for our students to learn the strategies, most likely they will require the following (DREAMS):

- Direct Instruction
- Review
- Errorless Learning
- Always be Consistent
- Modeling
- Systematic intervention for activities to promote overlearning

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## Organization - Definition

To arrange by systematic planning and united effort  
Miriam Webster Dictionary



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## Organization ~ School Impact

### Process ~

- copying homework
- handing in homework
- keeping track of assignments
- organized binder

### Content ~

- written expression
- oral expression
- Multi-step math computations and word problems
- Sequencing, organizing story content

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## Organization ~ Strategies

Need: Task Analysis

How:

Plan Do Review

What Plan Do Review information

Need:

What do you need to accomplish? What is the goal?

Plan:

What steps will you take to accomplish the goal? List the steps.

Do:

Execute the plan.

Review:

What did you learn from the experience? What did you do well?

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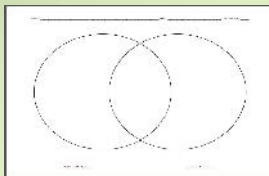
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## Organization ~ Strategies

Graphic organizers, apps such as Inspiration/Kidspiration



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## Organization - Strategies

Class agenda sheet, advance organizer



Today's  
Agenda

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## Organization - Strategies

Agenda book, phone calendar, organizational apps



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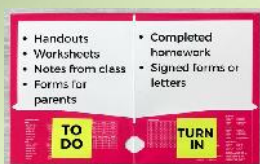
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## Organization - Strategies

Daily check-in



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## Organization - Strategies

Checklists, rubrics

Step	Description	Done
1	Description of step 1	<input type="checkbox"/>
2	Description of step 2	<input type="checkbox"/>
3	Description of step 3	<input type="checkbox"/>
4	Description of step 4	<input type="checkbox"/>
5	Description of step 5	<input type="checkbox"/>

Step	Description	1	2	3	4	5
1	Description of step 1					
2	Description of step 2					
3	Description of step 3					
4	Description of step 4					
5	Description of step 5					

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## Organization - Strategies

Structured classroom and concrete organized worksheets



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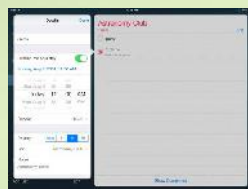
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## Organization - Strategies

• Timers/alerts



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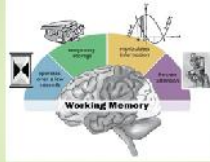
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## Working Memory - Definition

Ability to store and manipulate information in your mind for short-term use



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## Working Memory - School Impact

### Process

- Difficulty listening to lecture and taking notes
- Difficulty listening to instructions/directions and then carrying them out correctly.
- Difficulty with engaging in give and take conversation

### Content

- Reading (i.e., recalling information from selection)
- Math (i.e., holding onto the information in a word problem)
- Written expression (i.e., recalling all the parts of writing a paragraph/essay/report)

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## Working Memory - Strategies

Need: Reduce working memory load

How:

- Provide a copy of notes in advance of the class for the student to follow along lecture.
- Provide written directions
- Chunking - Reduce the reading demand when answering questions or sequencing events - stop and review and provide summary sentence
- Provide a checklist and rubric
- Use visualization, verbal rehearsal, melodic intonation, act it out
- Help make associations

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## Initiation - Definition

The action of beginning something

Oxford Dictionary



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## Initiation - School Impact

### Process

- Fails to get started on morning routine
- Fails to inform teacher when finished a task
- If distracted, has difficulty returning to complete the given task
- Fails to inform teacher that he needs clarification

### Content

- Fails to start a task
- Once started on a task, may not complete it if gets distracted or confused

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## Initiation - Strategies

Need: To start a task

How:

- Timer/alert



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## Initiation - Strategies

- Visual reminders, schedules



### Directions

- Place your name in the top right corner of the paper
- Draw your name in the upper right hand corner of the paper's date 11/8/10
- Draw the date in the upper right hand corner of the hour you are currently in.
- Label your paper on the left margin 1-1" leaving a line (or space) in between

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## Initiation - Strategies

- Verbal /gestural prompt
- Acronym for regular routines
- Monitoring



From Pinterest

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## Problem-solving - Definition

To find a solution to a difficult or complex question or situation  
Oxford Dictionary



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## Problem-solving - School Impact

Process -

Difficulty answering questions such as:

- How do you think you will do on the test?
- What was the hardest part of the assignment?
- What strategies will help you complete this assignment?

Content -

- Checking work for accuracy
- Prioritizing assignments
- Figuring out what to do when don't understand what to do

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## Problem-Solving - Strategies

- Requires a lot of modeling and errorless learning
- Plan-Do-Review

Goal:  
What do I want to accomplish? What is the goal?

Plan:  
How am I going to accomplish the goal? List the steps.

Do:  
Follow the steps.

Review:  
How did I do? What went well? What did I learn?

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## Problem-Solving - Strategies

Prioritize

Task	Priority	Due Date	Status
Task 1	High	11/15/19	Not Started
Task 2	Medium	11/20/19	In Progress
Task 3	Low	12/01/19	Not Started
Task 4	High	11/25/19	Not Started
Task 5	Medium	12/05/19	In Progress
Task 6	Low	12/15/19	Not Started
Task 7	High	11/30/19	Not Started
Task 8	Medium	12/10/19	In Progress
Task 9	Low	12/20/19	Not Started
Task 10	High	11/28/19	Not Started

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## Problem-Solving - Strategies

PQRST method

- **Preview** – Look through topic
- **Question** – Make up questions
- **Read** – All material
- **Summary** – Summarize all info & ideas
- **Test** – quiz yourself, questions from step 2

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## Problem-Solving - Strategies

- Work on meta-cognitive questions and checklists
- Discuss: *what are our choices, which is a better choice, why*
- Discuss: *what do you we need to do, what should we do first, why*

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## Summary

- Have direct goals and accommodations
- Provide direct instruction and then work on fading out.
- Allocate time in the day for direct instruction and review of strategies
- Provide time to directly address remediation and identify what team players are responsible.
- As the content load increases in complexity, reduce the executive function demand

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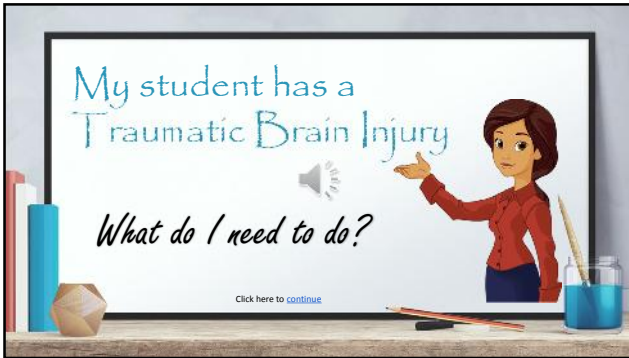
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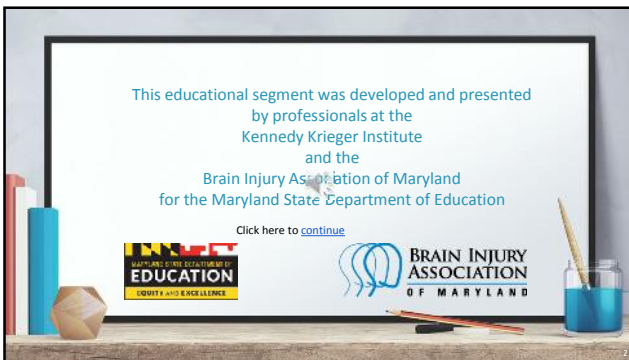
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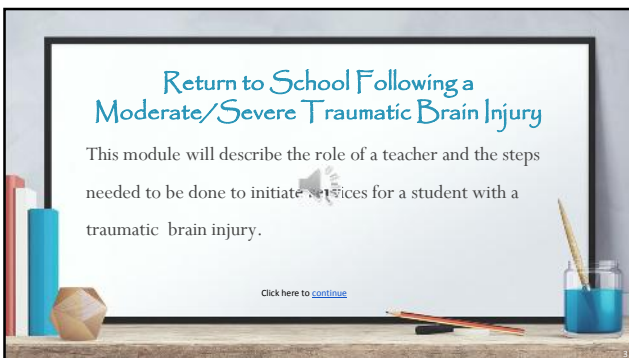
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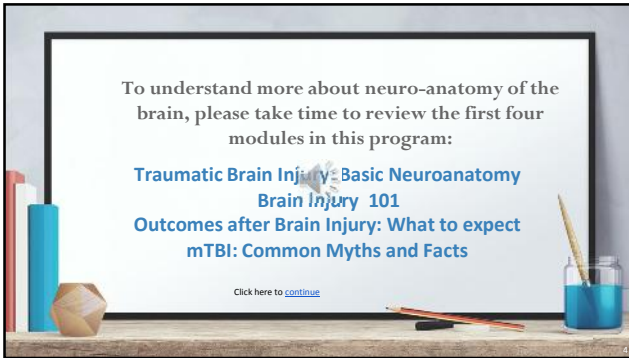
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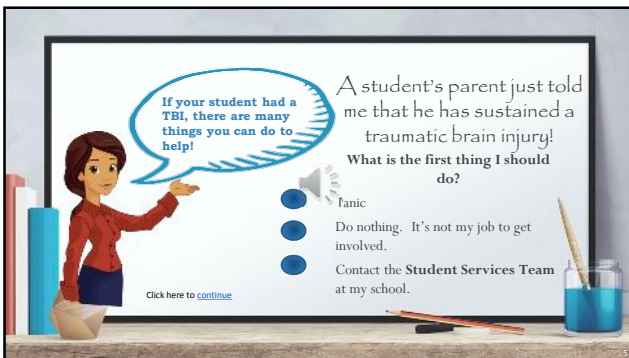
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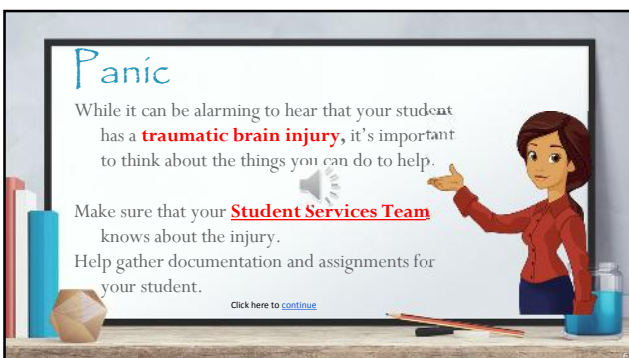
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**Do nothing**

It may be overwhelming to think about, but students with traumatic brain injury need to be evaluated in the school...and **quickly**!

It's important to **expedite** referrals and evaluations for students with TBI since they often need services and their needs can change very quickly!

Click here to [continue](#)

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**That's right!**

Contacting the **Student Services Team** is the right thing to do. They will be able to access medical records and determine whether additional information is needed.

Click here to [continue](#)

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**The Student Services Team**

Staff may include

- ✓ Administrator
- ✓ Social Worker
- ✓ 504 Plan Chair
- ✓ School Nurse
- ✓ Teacher

The Student Services Team should obtain a **Release of Information** signed by the parent to request medical records from the hospital or rehabilitation facilities where the student was admitted.

Click here to [continue](#)

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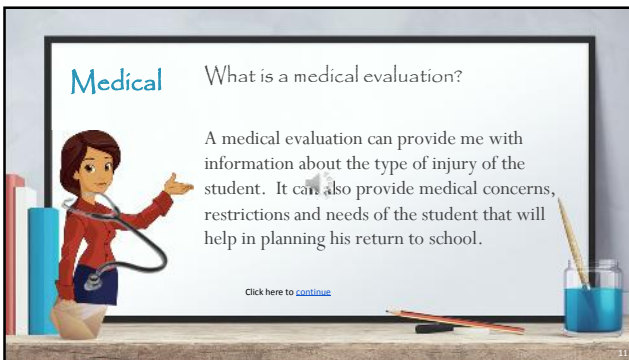
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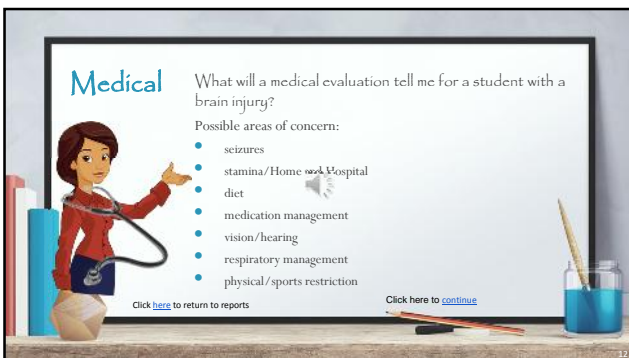
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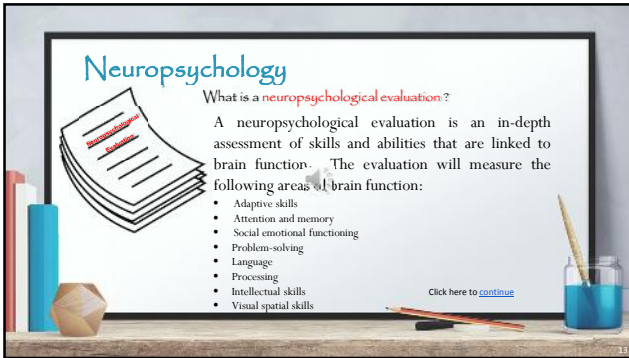
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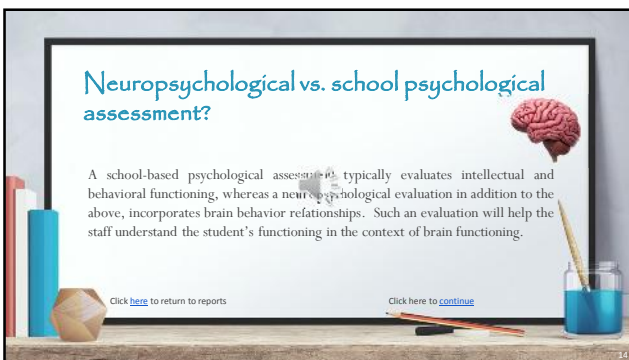
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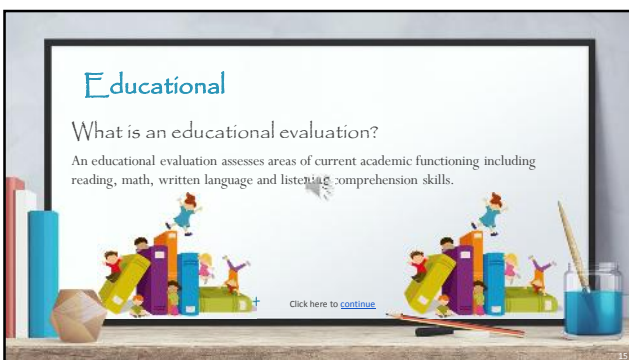
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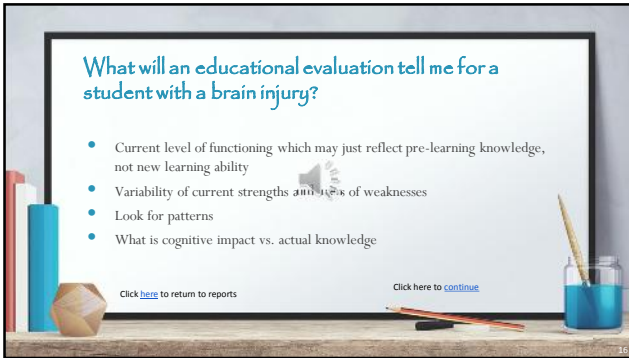
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**What will an educational evaluation tell me for a student with a brain injury?**

- Current level of functioning which may just reflect pre-learning knowledge, not new learning ability
- Variability of current strengths and areas of weaknesses
- Look for patterns
- What is cognitive impact vs. actual knowledge

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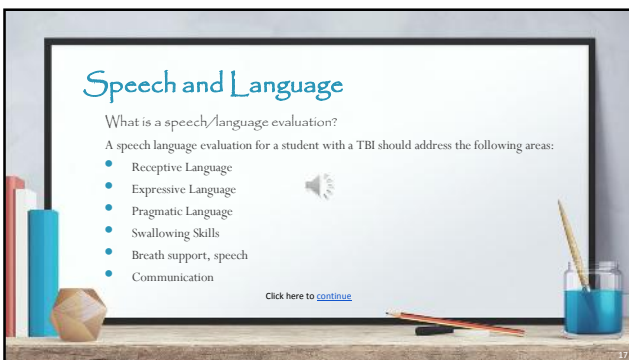
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**Speech and Language**

What is a speech/language evaluation?

A speech language evaluation for a student with a TBI should address the following areas:

- Receptive Language
- Expressive Language
- Pragmatic Language
- Swallowing Skills
- Breath support, speech
- Communication

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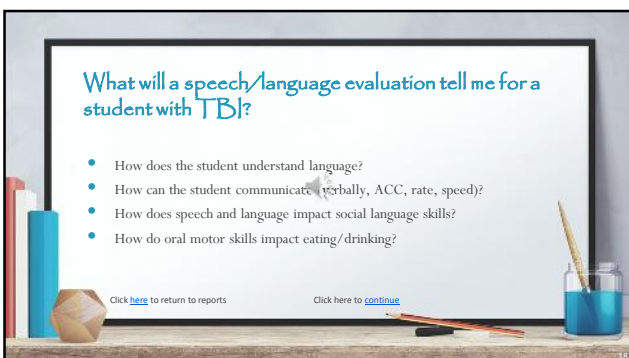
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**What will a speech/language evaluation tell me for a student with TBI?**

- How does the student understand language?
- How can the student communicate verbally, ACC, rate, speed)?
- How does speech and language impact social language skills?
- How do oral motor skills impact eating/drinking?

Click [here](#) to return to reports

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Occupational Therapy

What is an occupational therapy assessment?

An occupational therapy evaluation for a student with a brain injury, should assesses the following areas:

- Fine Motor Skills
- Visual-Perceptual Skills
- Visual-Motor Skills
- Activities of Daily Living Skills

Click here to [continue](#)

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What will an occupational therapy evaluation tell me for a student with a brain injury?

- What level of writing can the student do and what may impact written expression?
- What level of fine motor functioning and what may impact it?
- What is the level of independence for ADLs?
- Does the student require equipment?
- Does the material need to be modified or presented in a certain way visually?

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Physical Therapy

What is a physical therapy evaluation?

A physical therapy evaluation for a student with a brain injury should assesses the following areas:

- Endurance
- Speed
- Balance
- Coordination
- Mobility
- Motor Planning
- Equipment

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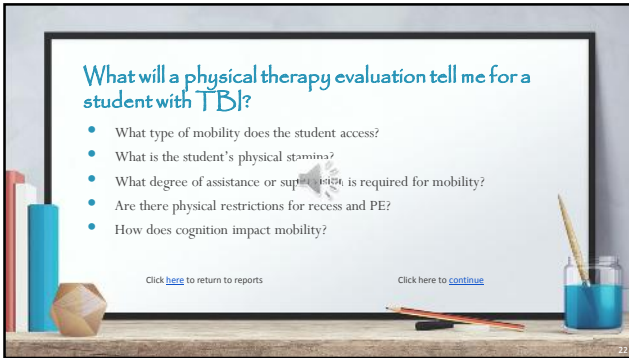
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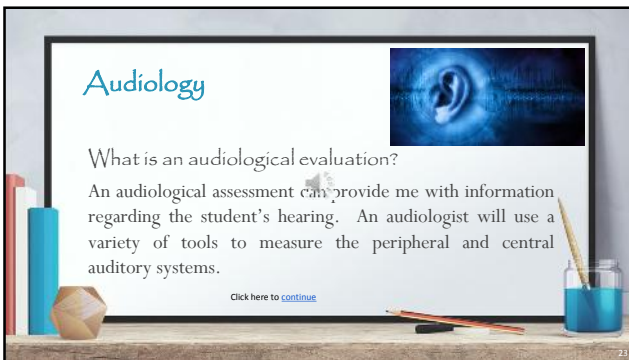
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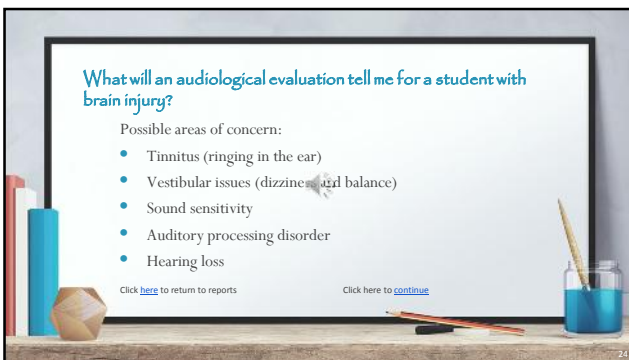
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**Vision - What is a vision assessment?**

A neuro-ophthalmology evaluation assesses the visual system as it relates to the nervous system. This includes vision disorders due to injury to the brain, the optic nerves, or the visual pathways which transmit visual signals from the eyes to the brain.

A functional vision assessment assesses how the student uses his vision in functional settings, such as the classroom and will tell me how to present information to the student.

Click here to [continue](#)

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**What will a neuro-ophthalmology evaluation tell me for a student with TBI?**

Diagnoses that may present following TBI:

- Cortical visual impairment
- Esotropia
- Diplopia
- Convergence insufficiency
- Visual Field cut

Click here to [continue](#)

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**What will a functional vision assessment tell me for a student with a brain injury?**

- How does the student's vision impact education?
- What material and instructional adaptations are needed?
- How does the eye/cortical condition translate to functional tasks?
- What environmental adaptations may be needed?

Click [here](#) to return to reports

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## Assistive Technology

### What is an assistive technology evaluation?

An assistive technology evaluation is completed by an assistive technologist or sometimes by a team of specialists to determine what technology will help improve the student's performance, participation and independence.

Click here to [continue](#)

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## What will an AT assessment tell me for someone following brain injury?

What technology can help my student with a TBI? Technology can compensate for deficits in the following areas:

- Motor
- Cognitive
- Communication

Click here to [continue](#)

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## Key take away points to remember as we embark on the special education time-line.

- Provide frequent monitoring of goals and ensure progress is being made.
- Initially, have quarterly team meetings to ensure services are appropriate.
- Keep in mind process, not only content and develop IEP goals as needed in these areas
- Keep in mind behaviors that may interfere with learning, even if not aggressive (attention, impulse control, following directions, decreased frustration tolerance, etc.) and develop goals in these areas.

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# Memory Strategies for Educators

Danielle Ploetz, PhD

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## Outline

- Defining memory and brief neuroanatomy primer
- Strategies to consider for helping your students

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## Defining Memory

- Memory is the most common and persistent deficit following acquired brain injuries
- Memory is a complex process
  - It can impact past and future recall

Attention

Encoding

Storage

Retrieval

- Disruption to ANY of these can lead to memory deficits

Haskins, Cicerone, Dams-O'Connor, Eberle, Langenbahn, and Shapiro-Rosenbaum (2012). Cognitive Rehabilitation manual: Translating Evidenced-Based Recommendations into practice. Reston, VA: American Congress of Rehabilitation Medicine.

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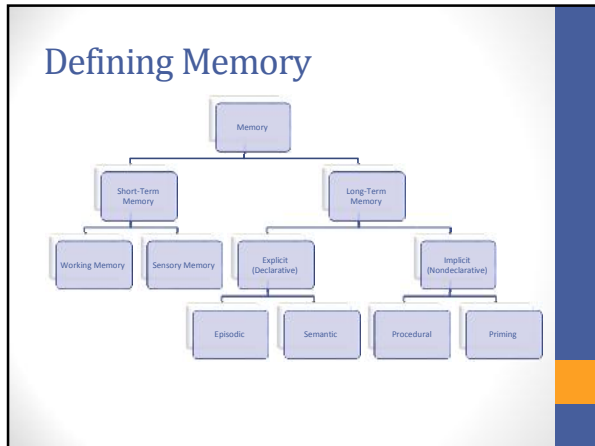
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## Neuroanatomy of memory

**Frontal Lobes**

- Short-term memory (working memory) and Retrieval

**Subcortical region (e.g., hippocampus, amygdala, striatum)**

- Learning, declarative memory (facts, events)

**Cerebellum, basal ganglia (also subcortical)**

- Procedural memory for motor learning

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## Memory Problems

- A memory deficit might look like trouble remembering or it might look like.....
- (Capuco & Freeman-Woolpert)

- She frequently misses appointments-avoidance, irresponsibility.
- He says he'll do something but doesn't get around to it.
- She talks about the same thing or asks the same question over and over-annoying perseveration.
- He invents plausible sounding answers so you won't know he doesn't remember .

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## Translating Research to Practice

The diagram illustrates the components of Evidence-Based Practice (EBP) as three overlapping circles: Best Research Evidence (top), Patient Values (right), and Clinical Expertise (bottom). A hand with a pen points to the central intersection where all three overlap. Below the diagram, wooden blocks are arranged to spell out the word 'EVIDENCE'.

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## Considerations

- Severity of impairment
- What needs to be remembered?  
Appointment? Facts?
- Preferences, meaning
- Trial and error from clinician

A photograph showing a pair of feet standing on a path. The path is marked with white arrows pointing in different directions (up, down, left, right), symbolizing choices or considerations.

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## Strategies

- Orientation/External Aides
- Errorless learning
- Spaced Retrieval
- Chaining
- Association/Keyword retrieval
- Mnemonics

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## Orientation and Memory

- External Aides

- Memory Notebook with Calendar
  - Pictures of Staff
  - Memory Log/Individualized Daily Schedule
  - Behavior reward chart/tokens earned



- Tablets & phones



Year 2013						
DATE	TIME	WEEK	TEMP	RAIN	WIND	ADVIS
1	8	1	15	0	10	1
2	9	2	16	0	12	2
3	10	3	17	0	15	3
4	11	4	18	0	18	4
5	12	5	19	0	20	5
6	13	6	20	0	22	6
7	14	7	21	0	25	7
8	15	8	22	0	28	8
9	16	9	23	0	30	9
10	17	10	24	0	32	10
11	18	11	25	0	35	11
12	19	12	26	0	38	12
13	20	13	27	0	40	13
14	21	14	28	0	42	14
15	22	15	29	0	45	15
16	23	16	30	0	48	16
17	24	17	31	0	50	17
18	25	18	32	0	52	18
19	26	19	33	0	55	19
20	27	20	34	0	58	20
21	28	21	35	0	60	21
22	29	22	36	0	62	22
23	30	23	37	0	65	23
24	31	24	38	0	68	24
25	32	25	39	0	70	25
26	33	26	40	0	72	26
27	34	27	41	0	75	27
28	35	28	42	0	78	28
29	36	29	43	0	80	29
30	37	30	44	0	82	30
31	38	31	45	0	85	31

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## Memory Log/Daily Schedule

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## Daily Tasks/Homework

<b>Monday date:</b>	<b>Thursday date:</b>
<b>Tuesday date:</b>	<b>Friday date:</b>
<b>Wednesday date:</b>	<b>Saturday date:</b>
	<b>Sunday date:</b>

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## Errorless Learning

- Cue freely as needed
- Frequent repetition
- Present information in actual context/setting
- Avoid quizzing
- Do not allow guessing or trial-and-error

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## Errorless Learning

- Most basic: make statement & ask student to recall statement without delay
  - My name is Dr. D. What is my name? OR Did I say my name was Sally or Dr. D?
  - You live in Baltimore. Where do you live?
  - This place is called STP. What is it called?



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## Severely Impaired Memory

### Orientation

1. Your name is \_\_\_\_\_. What is your name?
2. You are \_\_\_\_\_ years old. How old are you?
3. You were born on \_\_\_\_\_. When were you born?
4. Your phone number is \_\_\_\_\_. What is your phone number?

### Place

1. We are in Baltimore. Which city are we in?
2. You are at STP right now. Where are you?

### Injury

1. The date of your injury was \_\_\_\_\_. When was your injury?
2. You have a \_\_\_\_\_. What kind of injury do you have?

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## Errorless Learning

- More complex: simple command with conditional clause attached, indicating when command should be executed
  - When you pick up the phone, say, "Hello, my name is Kevin." What should you say when you pick up the phone?
  - Before you sit down, feel for the back of the chair. What should you do before you sit down?



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## Spaced Retrieval

- Identical to errorless learning except student is asked to retain information for progressively longer periods of time
  - Give name and ask to repeat after increasing intervals
    - E.g., 15 sec, 30 sec, 45 sec
  - Duration only increases based on performance and until each prior level is mastered

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## Chaining

- Used to retrain students to perform sequence of steps by procedural memory
- Each item learned automatically, as an isolated unit
- Then mechanically linked with items before and after
- Completion of 1 step in sequence serves to reinforce step that came before it

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## Chaining

- Verbal or visual; helpful to also incorporate motor movements
- Forward
  - Teacher provides 1st step; guides student
  - Once able, 2nd step introduced; student guided to perform both together
  - Once successful, 3rd step introduced; student guided to perform all 3 together
  - Continues until all steps are complete
- Backward
  - Identical, cueing for steps reversed last to first
  - Vanishing cues
    - process for teaching new information in which prompts are provided and then gradually removed

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## Association

- Paired Associate (PA) learning
  - 2 items (a Stimulus and Response item) paired as stimuli (e.g., CALENDAR-SHOE)
  - When items pairs are committed to memory, presentation of first word (the stimulus word) should evoke the second word (the response word)
    - Presenting CALENDAR should elicit a response of SHOE

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## Keyword Method

- Paired-associate learning
  - mediating word ("key" word) is used to associate two items
  - Often used to learn foreign language
  - English word that sounds like some part of foreign
    - Spanish *carta* sounds like the English *cart*
    - *cart* is the **keyword**
    - link keyword with English meaning of foreign word by forming an interactive image
    - *carta* means *letter*, so visualize a letter inside a cart



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## Mnemonics

- Acronym-list of initial letters of critical words
  - representing the Great Lakes as HOMES
- Narrative Story Method
  - create story that contains all words in a to-be-remembered list
- Rhymes and Alliterations
- Chunking (phone numbers are great examples of chunking)
- Method of Loci

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## Mnemonics

- Imagery Mnemonic: The Method of Loci
  - Ascertain student recalls a familiar place
    - house
  - Think of different landmarks
    - bathroom, kitchen, hall
  - Train students to "go around" landmarks in particular order
    - Best for simple words lists, like vocab
    - Imagine items in certain places of house

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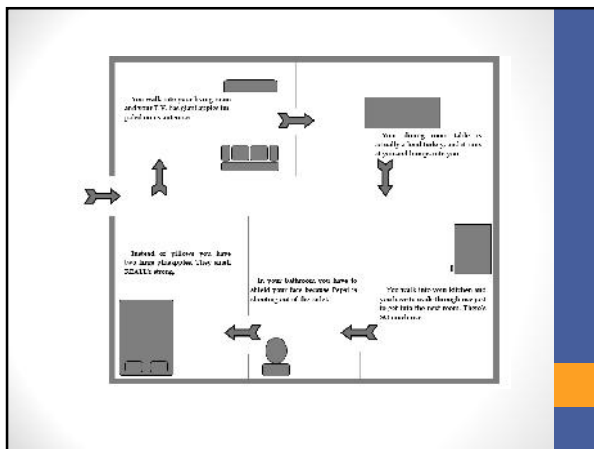
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## Circling Back - Summary



- Gather as much information as possible about the child – Neuropsychology evaluations, speech and language evaluations, medical documents, PT and OT evaluations
- These challenges are dynamic, multi-variate, and evolving
- Brain injuries are individual and diverse
  - There are some commonalities but each one is unique
- It is important to individualize and fade accommodations as necessary

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## Summary

- It is important to individualize and fade accommodations as necessary
- As most are aware, the Universal Design for Learning (UDL) provides a framework
  - Under the engagement guideline you can find options related to supporting different areas of functioning
  - <http://udlguidelines.cast.org/>
- Teachers play a key role!



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## APPS to consider

- To name a few...
- Evernote
- Pictello
- iProcrastinate
- inClass
- Index Card
- Google Calendar
- Flashcards Deluxe



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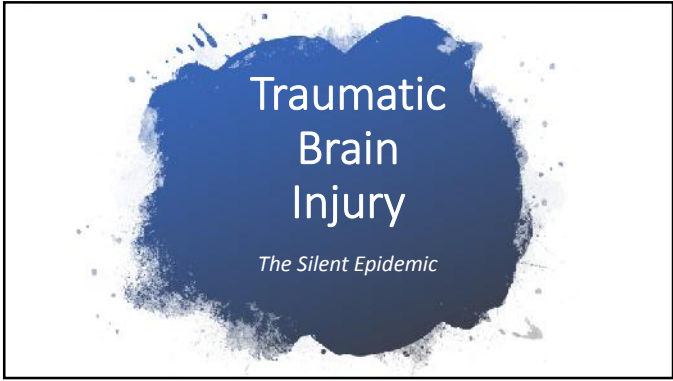
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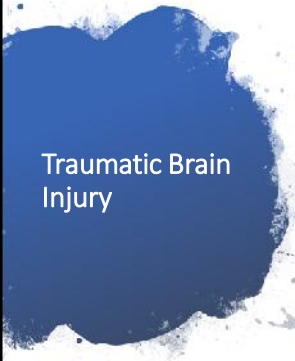
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Traumatic Brain Injury

According to the Individuals with Disabilities Education Act (IDEA):

**A traumatic brain injury is** “an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child’s educational performance.” **The definition continues to specify,** “Traumatic brain injury applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psycho-social behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.”

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### Causes of TBI

The Centers for Disease Control and Prevention (CDC) identified the following leading causes of TBI in children and adolescents ages 0 to 14:

- Falls (50.2%)
- Struck by/against events (24.8%)
- Motor vehicle accidents (6.8%)
- Assault (2.9%)
- Unknown/other (15.3%)



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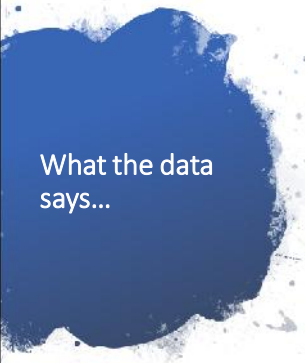
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### What the data says...

In 2014 alone, the CDC estimated over 837,000 TBIs in children in the United States resulting in:

- over 812,000 emergency department (ED) visits
- over 23,000 hospitalizations
- and 2,529 deaths

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### The Silent Epidemic: TBI

- Most common cause of death and disability in children and adults up to age 45
- Occurs every 15 seconds
- Approximately 5 million Americans suffer some form of TBI disability
- 1 out of 500 children and adolescents will survive a TBI that require hospitalization

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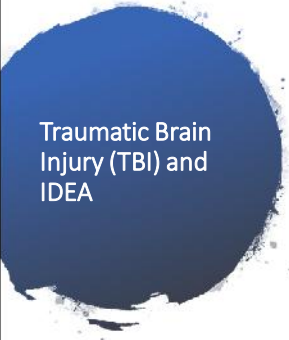
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### Traumatic Brain Injury (TBI) and IDEA

Though it is considered a low incidence disability, TBI is its' own category under the federal law that ensures appropriate services for students with disabilities.

In 2015-16 the United States Department of Education National Center for Education Statistics, reported approximately 27,000 students receiving services, nationwide, with the identification of TBI.

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In a Journal of Learning Disabilities article from 1991, Segalowitz and Brown found:

*"The hospital-reported incidence of mild head injury among children indicates a prevalence of 2% to 3% in high-school-aged adolescents (14 to 18 years). Yet, our survey of 616 high school adolescents suggests that light and mild head injury (not necessarily leading to hospital admission) is almost 10 times this level. Despite the common notion that such injury is generally benign, we found significant relationships in our sample between reported head injury and hyperactivity, stuttering, mixed handedness, and dislike of mathematics."*

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## Traumatic Brain Injury Incidence in Maryland School Aged Individuals

In 2014 alone there were 367 hospitalizations in the state of Maryland where the patient was between birth and 18 years of age and the primary diagnosis was traumatic brain injury.

This does not include individuals seen at their primary care physician's office, walk in medical care centers, or who were seen but not admitted to the hospital.

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## Maryland School Data

According to the Maryland State Department of Education (MSDE) there were 221 students state wide receiving special education services with the identification code of TBI.

- 215 in the local education agencies.
- 6 students with the disability code of TBI at the Maryland School for the Blind

Traumatic Brain Injury		
	Total	Percent
Total State	221	0.21%
Allegany	5	0.36%
Anne Arundel	26	0.31%
Baltimore City	40	0.30%
Baltimore	36	0.25%
Calvert	0	0.00%
Caroline	2	0.34%
Carroll	0	0.00%
Cecil	10	0.42%
Charles	9	0.29%
Dorchester	4	0.85%
Frederick	5	0.11%
Garrett	0	0.00%
Harford	5	0.10%
Howard	5	0.09%
Kent	1	0.40%
Montgomery	19	0.10%
Prince George's	29	0.19%
Queen Anne's	0	0.00%
St. Mary's	2	0.11%
Somerset	1	0.24%
Talbot	1	0.22%
Washington	4	0.17%
Wicomico	9	0.50%
Worcester	2	0.24%
SEA Total	215	0.20%

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## Traumatic Brain Injury in Maryland Schools

In Maryland there were 108,495 students receiving special education services through an Individualized Education Plan as of October 1, 2017.

Of these only 221 students are identified as having a disability of Traumatic Brain Injury.

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## The Numbers Don't Add Up

- The CDC estimates brain injury prevalence at 10%
- There is approximately 1.3 million school aged kids in Maryland
- That means 130,000 kids with brain injuries.
- If 5% suffer the onset of a disability that still equates to 6,500 individuals with a disability as the result of a brain injury!
- **WE ONLY SERVE 221 STATEWIDE!!!**

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## How does this impact me as a professional in the school?

- Even though a student with a brain injury may exhibit behaviors and characteristics that mirror other disabilities, it is still essential that they are identified properly.
- Proper identification leads to more effective interventions and services that are appropriate.
- Many times TBI ends up being misidentified as emotional disturbance.

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## What Can Be Done?

- Communication, Communication, Communication!!!
- Collaboration!
- The family and the student should be an integral part of the team.



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## Best Practices...

Brain injury should be explored any time there is a concern with a student. This includes, but is not limited to:

- Screening meetings
- Child find meetings
- "Kid Talk" meetings
- Individualized Education Plan (IEP) meetings
- 504 Plan meetings
- Functional Behavioral Assessment (FBA) and Behavior Intervention Plan (BIP) meetings
- Parent/Teacher conferences
- During vision and hearing screenings



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## How to ask parents about history of brain injury

- Has your child ever had a concussion?
- Has your child ever hit their head and lost consciousness, even if for only a short time?
- Has your child ever received medical attention as a result of hitting their head?
- Has your child ever hit their head and had a headache that lasted more than a couple hours?
- Has your child ever hit their head and had difficulty with thinking, emotions, or behavior, even if only for a little while?



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## Things to remember

- TBI is under diagnosed and under reported, especially in schools.
- Academic, behavioral, and emotional difficulties are all common consequences of a TBI.
- All TBIs do not result in loss of consciousness.
- A concussion is a brain injury!

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## More things to remember

- There are simple screening tools that can be used such as the HELPS brain injury screening tool. <https://www.nashia.org/pdf/hotopics/pa-helps-screening-tool.pdf>
- The impact of brain injury may not become evident for months or sometimes even years after the injury, this is especially true in the developing brain of a child.
- If student with brain injuries are not properly identified they most likely will not be served appropriately, however if served appropriately then most likely outcomes will improve.

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## Still more things to remember

- It is likely that there are students that are not being served appropriately because they have not been properly identified as having a TBI.
- Educate parents and other professionals about TBI and its' frequency.
- Parents/guardians may be hesitant to report a TBI or may not see a correlation between a past TBI and current school difficulties.
- Ask about possible history of TBI in children.

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## TBI is an Epidemic!!!

TBI is present in 85% of traumatically injured children, either alone or with other injuries.<sup>1</sup>

*Carli P. Orliaguet G (February 2004)*

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## Objectives:



- Define transition and the different types of transition that a student with a brain injury may undergo.
- Discuss why transition is different for a student with brain injury than for other students.
- Discuss the importance of transition planning for a student with brain injury.
- Discuss practical strategies and best practices when helping a student with a brain injury transition.

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## What is transition?

**Traditional:** noun, the process or a period of changing from one state or condition to another; verb, undergo or cause to undergo a process or period of transition

**Education:** process of preparing a student to enter a post-school environment; purpose is to facilitate the student's move from school to post-school activities.

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# Cycle of transition for student with a TBI

The diagram illustrates a cyclical process for a student with a Traumatic Brain Injury (TBI). It features three main stages connected by teal arrows in a clockwise cycle:

- Top Stage:** A black silhouette of a person sitting at a desk, representing the student in a classroom or academic setting.
- Bottom-Right Stage:** A colorful illustration of a hospital room. A patient is lying in a bed, and a healthcare professional is standing by the bedside. This represents the medical and rehabilitation phase.
- Bottom-Left Stage:** A black silhouette of two people, one wearing a graduation cap and gown, representing the student's transition into higher education or the workforce.

Teal arrows indicate the flow of the cycle: from the classroom stage to the hospital stage, from the hospital stage to the graduation stage, and from the graduation stage back to the classroom stage.

[illegible]

# Transition and brain injury

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# Why is effective transition planning so important for students with brain injuries?

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Typically for students with brain injuries, especially those that obtain their injury in high school, the emphasis is on completing their academic graduation requirements.

[illegible]

## Why is effective transition planning so important for students with brain injuries?

-According to Hoofien and colleagues, "Adolescents with TBI face unique challenges as they prepare for adulthood. Evidence has shown continuing medical and physical problems as well as vocational and education difficulties for adults with TBI."

-Anderson, Brown, Newitt, and Hoile conducted a follow up study of 124 adult survivors of childhood TBI. They found that injury sequelae persisted into adulthood and negatively affected both educational achievement and employment status.

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## How is transition different for students with brain injury?

The National Longitudinal Transition Survey reported that:

- 28% of parents of all students with disabilities reported that their transition age children need life skills,
- approximately 40% of parents of students with autism and emotional disturbance felt that their children needed life skills.
- Nearly 80% of parents of students with brain injuries felt their children required life skills training.

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## The Return to School

- Not the same student as prior to their injury.
- There is likely to be some anger
- Frustration
- Wanting to "get back to normal."
- Sense of loss
- Disinhibited!!!
- Dealing with loss

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## Importance of Early Intervention

Todis, Glang, Bullis, Ettel, and Hood found that those students with brain injuries who were employed at school exit generally had more severe injuries, had an earlier age of injury, and were less likely to have had rehabilitation services, suggesting that they received more school-based employment assistance than those with less severe injuries.

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## Best Practices for transition planning for students with brain injury ...

- Make the student, and their family, the center of the planning
- Include all disciplines that work with the student including medical professionals that may not be part of the school system
- As the student begins to make the move to their next steps include individuals from whatever comes next in transition planning
- Start the transition planning process as soon as possible

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## Best Practices for transition planning for students with brain injury ...

- Keep in mind that the closer to the injury, the greater the chance of denial over limitations
- Allow for the individual transitioning to experience natural consequences
- Incorporate social skills and behavioral supports in planning

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## Resources



- Involve the Maryland Division of Rehabilitation Services (DORS) in transition planning
- Transition Toolkit for Students with Traumatic Brain Injury; <https://www.cbirt.org/>
- Model Systems Knowledge Translation Center fact sheet, Returning to School after Traumatic Brain Injury; [https://msktc.org/lib/docs/Factsheets/TBI\\_School\\_after\\_TBI.pdf](https://msktc.org/lib/docs/Factsheets/TBI_School_after_TBI.pdf)
- Brain Injury Association of Maryland; <https://www.biamd.org/>

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## Things to Remember!!!

- Be flexible, plan for change
- Have frequent meetings to discuss changes, progress, etc.
- Involve the student as much as possible and whenever possible
- Take a multi disciplinary approach
- Build on preinjury strengths
- Be creative!!!



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