

# Traumatic Brain Injury 101: An overview

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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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## III. Common Sequelae after TBI and Trajectory

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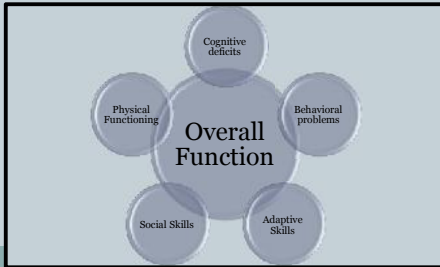
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## TBI in children and adolescents

- **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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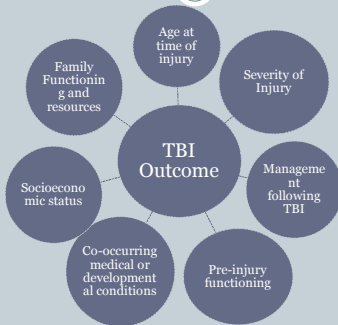
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## Factors affecting outcome



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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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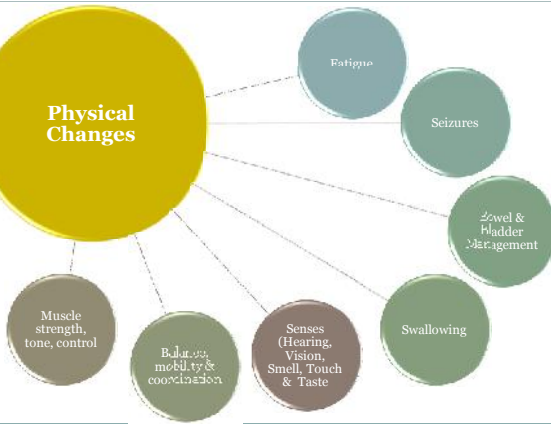
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### Physical Changes



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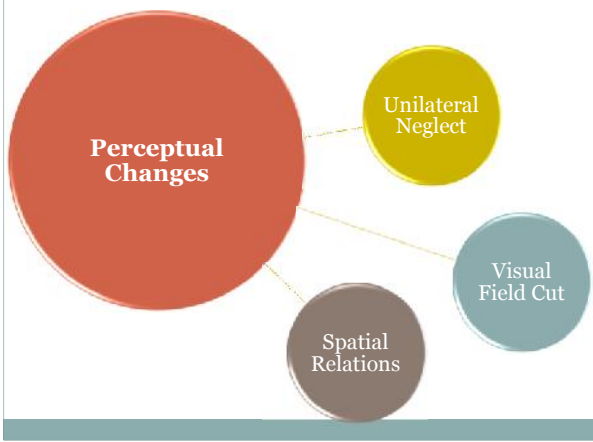
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### Perceptual Changes



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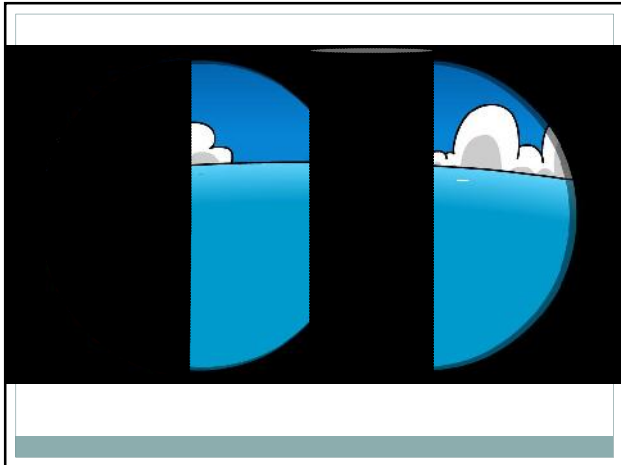
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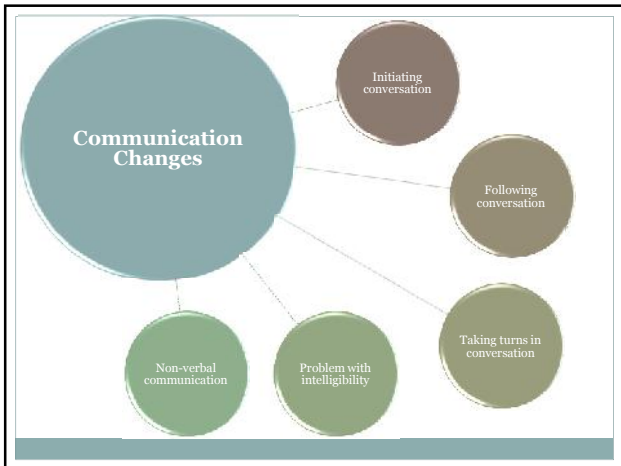
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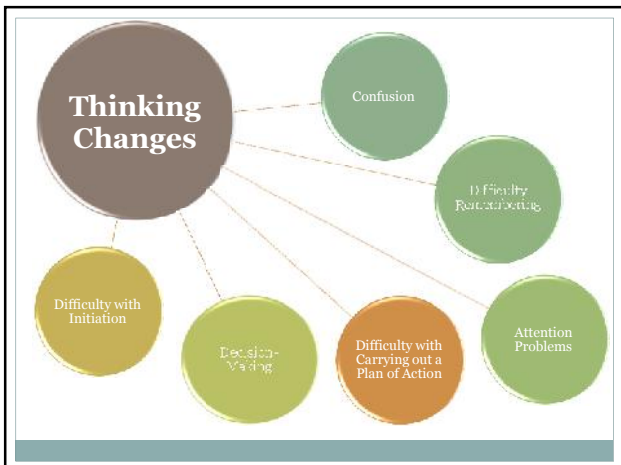
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## Attention Problems

- 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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