Coaching and Concussions



Introductions

Stephen Peterson, MD, CAQSM
Amanda Beatty MS, LAT, ATC
Carolina Family Practice & Sports Medicine
Carolina Sports Concussion Clinic

Agenda

Session 1:

- Define the injury
- Emergency management

Session 2:

- Identifying risk factors
- Non-emergent management

Session 3:

- Safe return to sport
- Prevention



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Learning Objectives: Session 1

- *Recognize the mechanisms of injury for concussion and the difference between structural vs functional injury.*
- *Recognize the signs and symptoms of concussion, including those that would warrant emergency referral.*



What is a concussion?

- Traumatic Brain Injury (TBI)
  - Blanket term: injury to the brain caused by external (blunt or penetrating) force

TBI Severity Categories

Mild	Temporary impairment
Moderate	Permanent symptoms/disability
Severe	Coma or Death

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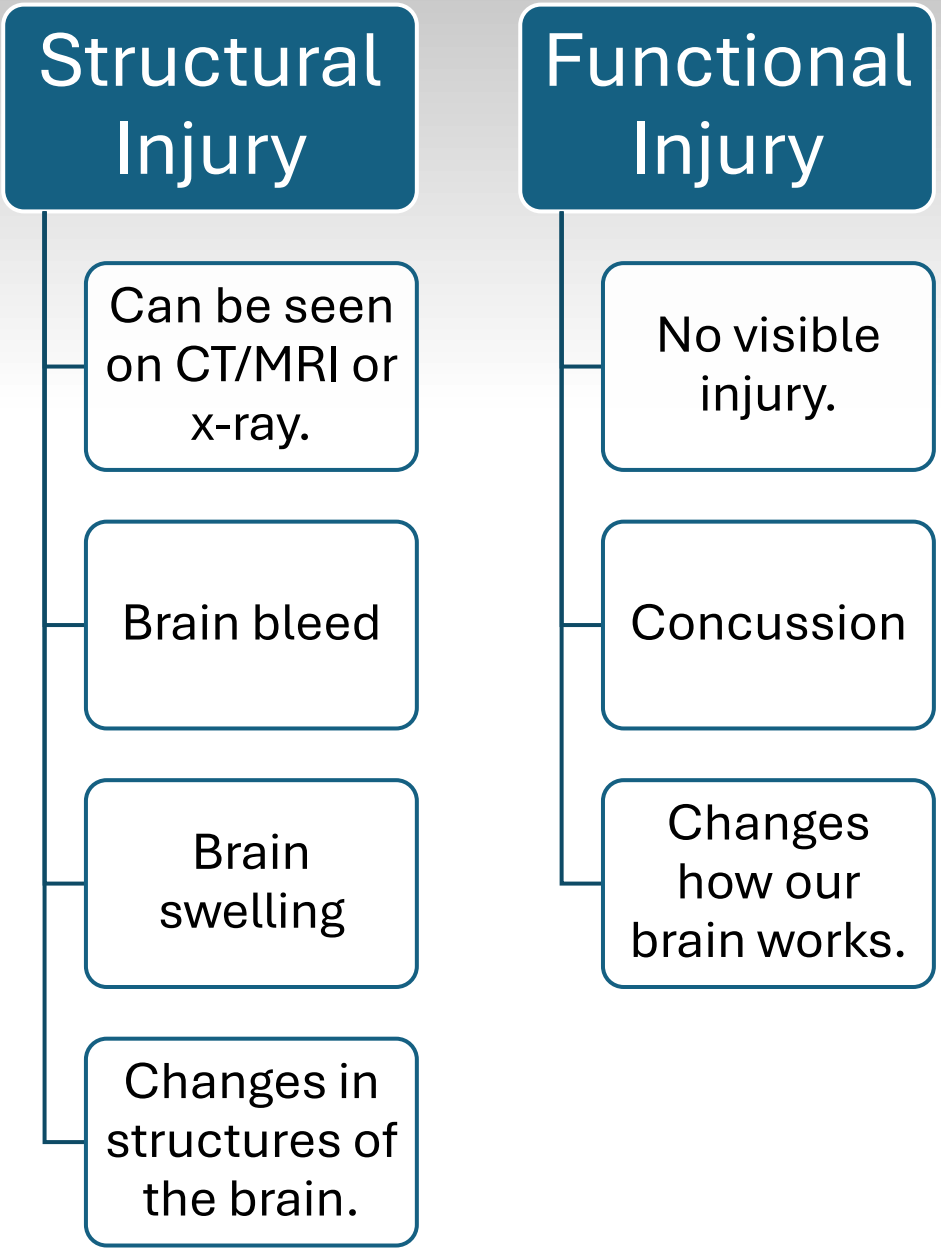
What is a concussion?

- Structural vs Functional
- Any neurologic symptom attributable to trauma



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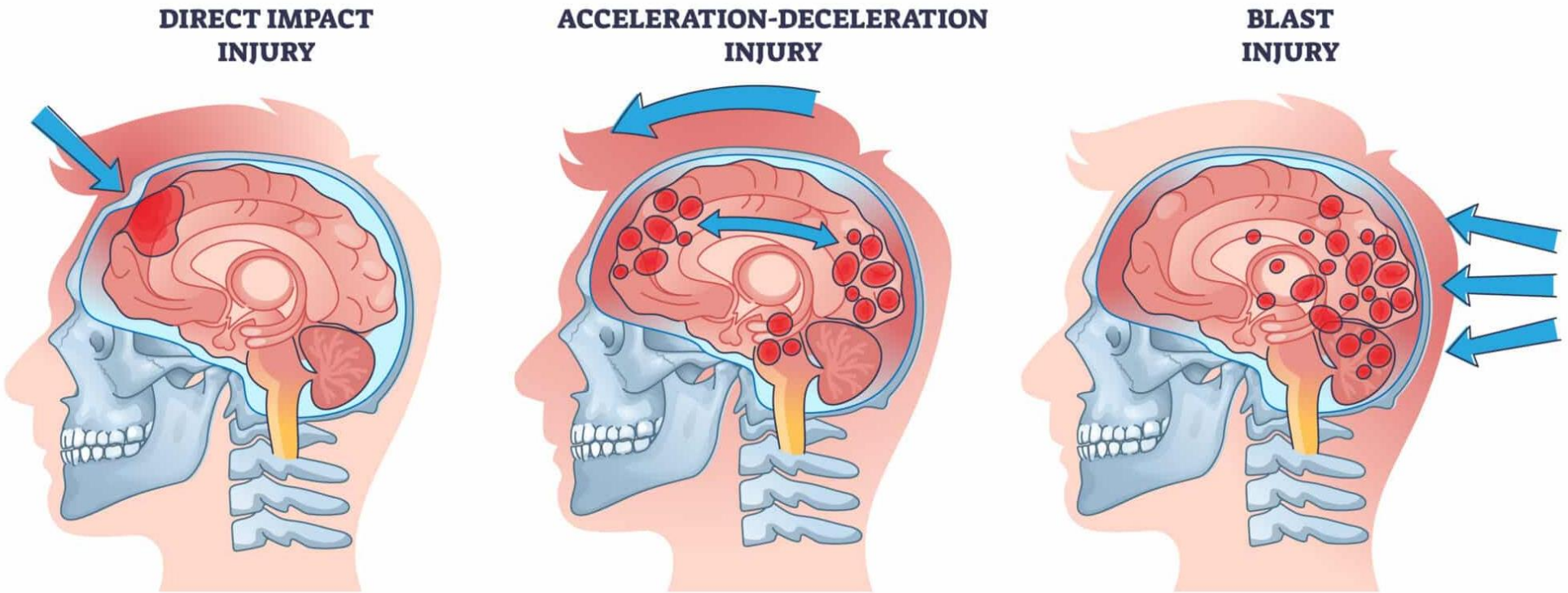
What causes a concussion?

- Direct or Indirect blow to the head or body



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What is experienced with concussion?

- Immediate or Delayed Symptoms

Physical		Cognitive	
Headache/Pressure 70% Blurred Vision Dizziness Balance Problems Tinnitus Nausea	Vomiting Numbness/Tingling Light sensitivity Sound sensitivity Neck Pain Disoriented/"Out of it"	Foggy Slowed Down Difficulty Remembering Difficulty Concentrating	Slowed Speech Easily Confused
Emotional		**Sleep/Energy**	
Inappropriate Emotions Personality Change Nervous/Anxiety	More "Emotional" Irritability Sadness Lack of Motivation	Fatigue Excess Sleep Sleeping Less	Trouble Falling Asleep Drowsiness

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Prevention

- Play the game properly – head up and teach respect for teammate and opponent.
- Appropriate hockey gear with it fit properly / worn properly.
- J clips and no cage hang.
- https://www.helmet.beam.vt.edu/hockey-helmet-ratings.html





Mechanism + Symptom(s)

How can you help?



On Ice Management

Red Flags: CALL AN AMBULANCE

If **ANY** of the following signs are observed or complaints are reported after an impact to the head or body the athlete should be immediately removed from play/game/activity and transported for urgent medical care by a healthcare professional (HCP):

- **Neck pain or tenderness**
- **Seizure, 'fits', or convulsion**
- **Loss of vision or double vision**
- **Loss of consciousness**
- **Increased confusion or deteriorating conscious state (becoming less responsive, drowsy)**
- **Weakness or numbness/tingling in more than one arm or leg**
- **Repeated Vomiting**
- **Severe or increasing headache**
- **Increasingly restless, agitated or combative**
- **Visible deformity of the skull**

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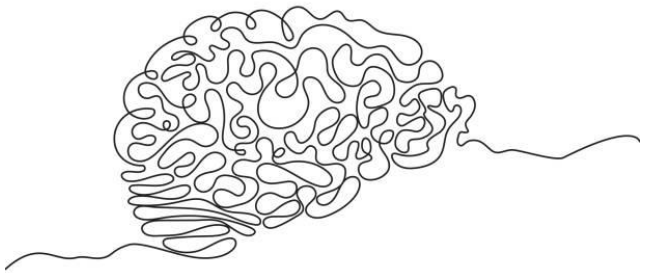
On Ice Management

- Remove From Play
  - Second Impact Syndrome
  - Prolonged recovery
  - Additional injuries



- "When in doubt, sit them out."
  - 69 high school athletes

REMOVED from Play	CONTINUED to Play

Significant differences between Neurocognitive test and Symptoms score between groups

Significant Recovery Time

REMOVED from Play 22 ± 18.7 Days	CONTINUED to Play 44.4 ± 36 Days

CONTINUED to Play group 8.80 times more likely to demonstrate protracted recovery

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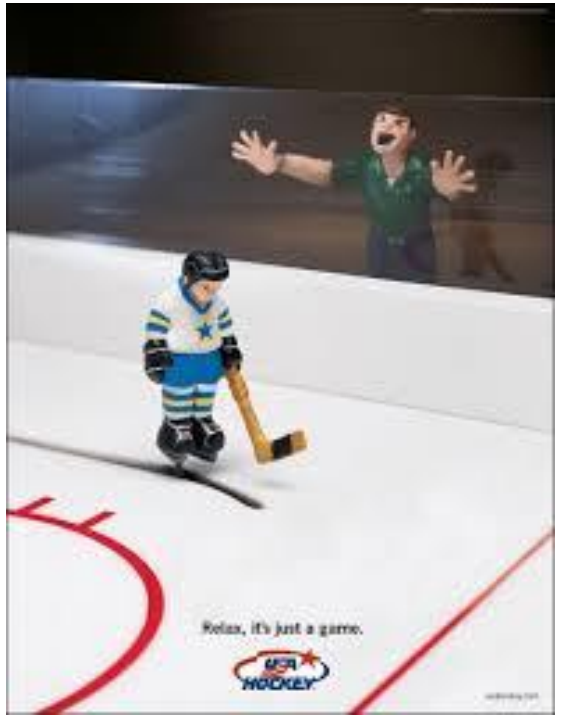
Elbin, R. J., Sufrinko, A., Schatz, P., French, J., Henry, L., Burkhart, S., Collins, M. W., & Kontos, A. P. (2016). Removal From Play After Concussion and Recovery Time. *Pediatrics*, *138*(3), e20160910. https://doi.org/10.1542/peds.2016-0910

Communicating with Parents







Communicating with Parents

What to do

- Give clear instructions.
- Offer resources.
- Do not allow parents to influence the decision.
- Don’t panic.

What to say

- Keep it simple:
  - “Billy took a hard hit on his last shift, came off and said he is feeling dizzy.”
  - “He may have a concussion, so he cannot go back into the game.”
  - “He should see a concussion trained healthcare provider who can provide further guidance.”

Future Sessions:

Step wise approach to return to play once asymptomatic.

State law in all 50 states requiring return to play stepwise approach.

NC law : Providers authorized to clear athlete : Licensed physician, neuropsychologist, ATC, PA or NP.