Pediatric Trauma

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Sports Injuries

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Statistics

- CDC estimate: 1.6 to 3.8 million sports-related concussions annually in the US.
- In high school sports most concussions are seen in football and soccer.
- Of football concussions, 67.6% were caused by tackling or being tackled.
- Linebackers and running backs suffer most.
- In soccer, most common cause is ñheading the ballò

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What is a concussion?

A concussion is an injury to the brain that affects the brain's ability to function properly. According to the Concussion in Sport Group, these injurie
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What is a concussion? It is an injury to the brain that affects the brain's ability to function properly, induced by traumatic biomechanical forces. Mechanisms of injury include a direct blow to the head, colliding with another person or object, or being struck on the body resulting in a whiplash type motion.

Slang terms used when referring to a concussion or head injury include "dings" or "getting your bell rung", which should be taken seriously. The athlete does not have to lose consciousness to have a concussion.

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Brain Injury

Å Concussion or Closed Head Injury

- May be mild or serious
  - Dazed, confused, loss of consciousness
- Symptoms begin:
  - Immediate, hours, days, weeks
- Brain injury needs care

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Brain Clot or Bleed

Subdural Hematoma

- Venous Bleed
- H/A most common
- S/S days to weeks

Epidural Bleed

- ï Infrequent, fast
- ï Period of conscious/ unconscious/conscious
- ï Slow pulse, elevated BP

Intracerebral hematoma

- Å Inside the brain tissue
- Å Symptoms depend on where the clot is in the brain itself
- Å May cause loss of consciousness

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Signs and Symptoms

- Headache
- Vertigo
- Blurred vision
- Photophobia
- Tinnitus
- Slow thinking, acting speaking or reading
- Severe mood changes
- Easily confused
- Memory loss
- Neck pain
- Lack of energy
- Difficulty w/ attention or concentration
- Drowsiness

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Signs and Symptoms 2

- Nausea
- Vomiting
- Seizure
- Poor balance or coordination
- Feeling ñn a fogò
- Nervousness
- Loss of consciousness
- Clear or bloody drainage from ears, nose, or mouth
- V/S
  - Pulse low
  - BP high
  - Resp. normal or altered

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Emergency Care

- Assessment skills ï Initial, Focused, V/S, Hx, Detailed
- May have unique behavioral, neurological, emotional, and/or physical abnormalities.
- Remove from activity
- Suspected concussion = not allowed to return to play on the same day.
- Serious S/S = ER
- Follow ñReturn to Play Guidelinesò

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Return to Play

- **GUIDELINES - RETURN TO PLAY**
- ***Neuropsychology has a central role to play*** in managing sports-related concussions and is best used as an important component within a multidisciplinary treatment approach that will involve the athlete, parents, coaches, athletic trainers and medical doctors. Ideally, the athlete is ready to participate in a **supervised return to play** process when the treatment team as a whole has agreed that the athlete is **symptom free at rest**.

Tolerate physical challenges. Athletes are expected to complete increasingly demanding physical activities without symptoms before returning to play. Typically, **each step will occur on a separate day** and may require several days depending on the athlete and their injury factors. Any **return of symptoms ends the activity** and the athlete is rested until the next day when they resume their last successful step.

- 1. No activity, complete rest.
- 2. Light aerobic exercise such as walking or stationary cycling.
- 3. Sport-specific training, such as skating in hockey and running in soccer.
- 4. Non-contact training drills.
- 5. Full contact training after medical clearance
- 6. Competitive game play.

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Return to play guidelines

Return to play after concussion should follow a six-step process:

Stage	Activity	Objective
1. No activity	Complete cognitive (e.g. mental) rest (see above)	Recovery
2. Light aerobic exercise	Walking, swimming or stationary bicycle keeping intensity less than 70% of maximum predicted heart rate	Increase heart rate
3. Sport-specific exercise	Skating drills in ice hockey, running drills in soccer. No head impact activities	Add movement
4. Non-contact training drills	Progression to more complex training drills, e.g. passing drills in football and ice hockey	Exercise, coordination and use of brain
5. Full contact practice	**Following medical clearance**, participate in normal training activities	Restore confidence and allow coaching staff to assess functional skills
6. Return to play	Normal game play	

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