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Concussion in Sport: A Growing Health Crisis
A Concussion Is........

- Traumatically induced alteration in mental status the may or **MAY NOT** involve a loss of consciousness (LOC)
  - American Academy of Neurology

A TRAUMATIC BRAIN INJURY!!!!!!
The terms “ding” and “got your bell rung” should not be used to describe a concussion.

Concussions can be sustained either with a direct or indirect blow to the head— you don’t need to actually hit your head!

Most concussions occur without a loss of consciousness.

A concussion is a FUNCTIONAL injury, not a structural injury.

Will not show up on an MRI, CT Scan, or X-Ray— These will only show bleeding on the brain and fractured bones!
Common Signs & Symptoms

- Loss of Consciousness
- Nausea/Vomiting
- Athlete is dazed/stunned
- Confusion
- Forgets plays
- Moves clumsily
- Balance problems
- Personality/Behavioral changes
- Inappropriate emotions
- Slow response to questions
- Forgets events before/after the hit
- Sensitivity to light and/or noise
- Easily distracted
- Vacant/Glossy stare
- Appears “drunk”

- Headache
- Fatigue
- Nausea/Vomiting
- Vision Disturbances
- Ringing in the ears
- Sensitivity to light and/or noise
- Feeling sluggish
- Feeling “foggy”
- Problems concentrating
- Problems remembering
RED FLAGS

- Extensive loss of consciousness or amnesia
- Deterioration of symptoms over time instead of a resolution of symptoms
- Signs and Symptoms lasting longer than 7-10 days
- Drastic personality changes
- Neurological disorders (seizures, palsy) are present
POST CONCUSSION SYNDROME

Different concussion related symptoms that may last for days, weeks, months, or years!

SECOND IMPACT SYNDROME

A serious and possibly fatal condition that occurs when an athlete returns to play before they have fully recovered from the first concussion and receives another concussion-usually occurs in the first 7-10 days.
Epidural Hematoma - Arterial bleed and fast

Subdural Hematoma - Usually venous bleed and slower
Risks of Mismanaging a Concussion

Short Term Risks of Mismanaging a Concussion
- Persistence or worsening of symptoms
- Repeat concussion
- Post concussion syndrome
- Second Impact Syndrome

Long Term Risks of Mismanaging a Concussion
- Prolonged post concussion syndrome
- Depression, cognitive impairment, dementia, CTE
- Death
New National Federation of High School Guidelines effective for the 2010-2011 school year:

“Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headaches, dizziness, confusion or balance problems) shall be immediately removed from the contest and shall not return to play until cleared by an appropriate health-care professional.”

“A student athlete that has been diagnosed with a concussion MUST be cleared by the Chief School Medical Officer”
Problems Resulting in Same Day Return to Play

- Significant memory deficits 36 hours post-injury in athletes that appeared symptom-free within 15 minutes (Lovell, et al., AJSM 2004)

- 33% of players with a concussion that returned the same day experienced delayed onset of symptoms at 3 hours, compared with only 12.6% of those who didn’t return to play the same day (Guskiewicz, et al., JAMA 2003)
“During the past 7 years the practice has been too prevalent of allowing players to continue playing after a concussion. Again this year this is true. Sports demanding personal contact should be eliminated after an individual has suffered a concussion.”

Proceedings of the 17th Annual Meeting of the American Football Coaches Association
WE ARE RETURNING ATHLETES BACK TO PLAY TOO EARLY!!!!!!

It takes on AVERAGE 7-10 days for symptoms to clear
After being cleared by a primary care physician an athlete should follow the following return to play guidelines:

Day 1: No exertional activity until medically cleared and asymptomatic for 24 hours
Day 2: Begin low impact activity (walking, stationary bike)
Day 3: Aerobic activity that is sport specific
Day 4: Non contact sport specific drills (Dribbling, ground balls, kicking, etc)
Day 5: Full contact in a practice setting

If the athlete remains without symptoms, they may return to play.
When in doubt, sit them out.

It’s better to miss one game, than the whole season.