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Thank You!

Concussion Headlines !!!



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- Concussion rules put kids' health before winning games
 - *The Miami Herald*
8/21/12
- FHSAA's implementation of legislation goes into effect Sunday
 - *The Gainesville Sun*
6/30/12



Concussion Headlines !!!



What Is a Concussion?

- Complex process affecting the brain
 - Caused by direct blow to head/face/ or neck
 - Caused by blow to body directed toward head
- May or may not cause loss of consciousness
- Normal CT scan or MRI of brain
- Not simple or complex but simply “concussion”
- 80-90% resolve in 7 to 10 days

McCroory P, Meeuwisse W, Johnston K et al. Consensus Statement on Concussion in Sport: the 3rd International Conference on Concussion in Sport, Zurich 2008. *Br J Sports Med* 2009; 43: i76-i84.

What Is a Concussion?

- Brain injury
 - Caused by a bump, blow, ding or jolt to the head that can change the way the brain normally works
 - Occurs from a fall or blow to body that causes the head to move quickly back and forth



www.cdc.gov/concussion/

Signs and Symptoms of a Concussion

- Difficulty thinking, concentrating, remembering new information
- Feeling “slowed down”, “in a fog”, or tired
- Headache, blurry vision, dizziness, nausea, or vomiting
- Sensitivity to noise or light or balance problems
- Irritable, sad, emotional, nervous, anxious
- Sleeping more or less than normal or trouble falling asleep

www.cdc.gov/concussion/

What Causes a Concussion?

- Temporary decrease in blood flow to certain areas of the brain
- Decreased supply of “energy” to the brain.....We Think



Giza CC, Hovda DA. The Neurometabolic cascade of concussion. *J Athl Train.* 2001; 36 (3) 228-235.

How Common are Sports Concussions?

- 1.6 to 3.8 million sports related concussions occur yearly in the US
- 250,000 visits to ED in 2009 for sports related concussions
- Girls have higher rates of concussion in similar sports
- Football - High school boys
- Soccer and basketball – High school girls

Department of Health and Human Services (US), Centers for Disease Control and Prevention. Nonfatal Traumatic Brain Injuries Related to Sports and Recreation Activities Among Person Aged <19 Years, 2001-2009. MMWR. 2011; 60 (39); 1337-1342.

Why Do We Care?

- Postconcussion Syndrome
 - Consider if concussion symptoms persist for more than 1 to 6 weeks
 - Anxiety and mood changes reported by 33% of those with persistent postconcussion syndrome



McAllister TW, Arciniegas D. Evaluation and treatment of postconcussive symptoms. *NeuroRehabilitation*. 2002; 17 (4); 265-83.

Why Do We Care?

- **Second Impact Syndrome**
 - Occurs when athlete receives a second head injury before symptoms of first have resolved
 - Results in brain swelling and possibly death
 - Young athletes are most at risk
 - Prevention is for concussed athlete to be completely asymptomatic prior to return to activities
 - Ongoing debate over exact cause for this syndrome

McCrary P. Does second impact syndrome exist? *Clin J Sport Med.* 2001 Jul; 11 (3) 144-9.

Why Do We Care?

- **Chronic Traumatic Encephalopathy (CTE)**
 - Degenerative brain disease that occurs years after head trauma
 - Behavior changes, depression, poor memory, and speech and movement problems
 - Emerge later in life after athlete has retired
 - Shown with boxing, football, hockey, soccer
 - Still debatable but believed to be related to younger age of onset, magnitude of hits, and number of repetitive concussions

Gavett BE, Stern RA, McKee AC. Chronic traumatic encephalopathy; a potential late effect of sport related concussive and sub-concussive head trauma. *Clin Sports Med* 2011 Jan; 30(1): 179-88, xi

Why Do We Care?



Can We Prevent Sports Concussions?

- Helmets
 - Shown to decrease skull and facial injuries but no definitive data that they decrease concussions
- Mouthguards
 - Reduce risk of dental injuries but no evidence to suggest they decrease concussions
- Proper Technique
 - “Heads Up” or See What You Hit

Mihalik JP, McCaffrey MA, Rivera EM, Pardini JE, Guskiewicz KM, Collins MW, Lovell MR. Effectiveness of mouthguards in reducing neurocognitive deficits following sports-related cerebral concussion. Dent Traumatol. 2007 Feb;23(1):14-20.

Can We Prevent Concussion?

- Jury is Still Out on preventative measures...
- Appropriate management is crucial if concussion is suspected
- Sideline Management - Janie