

SAFETY FIRST

Preventing Sports-Related Concussions & Injuries

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Statistics

- 30 million children/adolescents participate in U.S. youth sports (CDC)
- 3.5 million/year under age 14 receive medical treatment for sports injuries
- Almost half of all sports injuries in middle/high school students are from overuse
- 62% of all injuries occur during practice



More statistics

- Sport specific injury rates, ages 5-14
 - Football: 28%
 - Baseball: 25%
 - Soccer: 22%
 - Basketball: 15%
 - Softball: 12%
- Since 2000, five-fold increase in number of serious shoulder/elbow injuries in youth baseball/softball players

Sports Injuries

- More than half of all sports injuries in children are preventable (CDC)
- Two types of sports injuries
 - Traumatic (single episode)
 - e.g., joint sprain, ligament tear, concussion
 - Overuse
 - e.g., stress fracture, chronic strain, chronic traumatic encephalopathy (CTE)

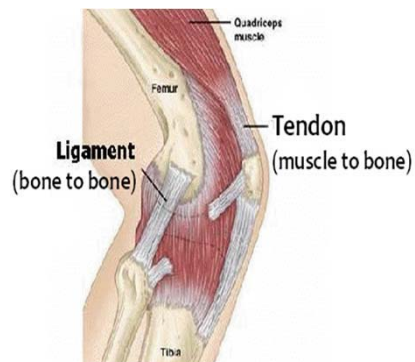
Definitions

- **Ligament** – fibrous connective tissue that connects two bones
- **Tendon** – fibrous connective tissue that connects a muscle to a bone
- **Sprain** – injury to a ligament
- **Strain** – injury to a muscle or tendon
- **Stress fracture** – caused by repeated rather than sudden mechanical stress



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Definitions



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Reducing the Risk

American Academy of Pediatrics:

- Take time off, at least one day/week and one month/year (allow recovery)
- Wear the right gear (sport-specific pads, helmets, mouthpieces, protective cups and eyewear)
- Strengthen the muscles (conditioning)
- Increase flexibility (stretching daily and after exercise)
- Use proper technique (importance of good coaching)

Reducing the Risk

American Academy of Pediatrics (continued):

- Take breaks (reduce heat injury)
- Play safe and abide by the rules
- Stop the activity if there is pain
- Stay hydrated
- Reduce sports-related emotional stress (i.e., the pressure of winning)
 - 70% of kids drop out of youth sports by age 13
 - Top three reasons: “adults, coaches and parents”

Reducing the Risk

- Myths of strength training in children:
 - Unsafe for children
 - Will stunt the growth of children
 - Will lead to growth plate damage
 - Cannot increase strength because of lack of testosterone
 - Is only for athletes
 - Long term health benefits (decreased risk of osteoporosis, obesity)
- 2008 Physical Activity Guidelines for Americans (health.gov/paguidelines/guidelines)

Concussion

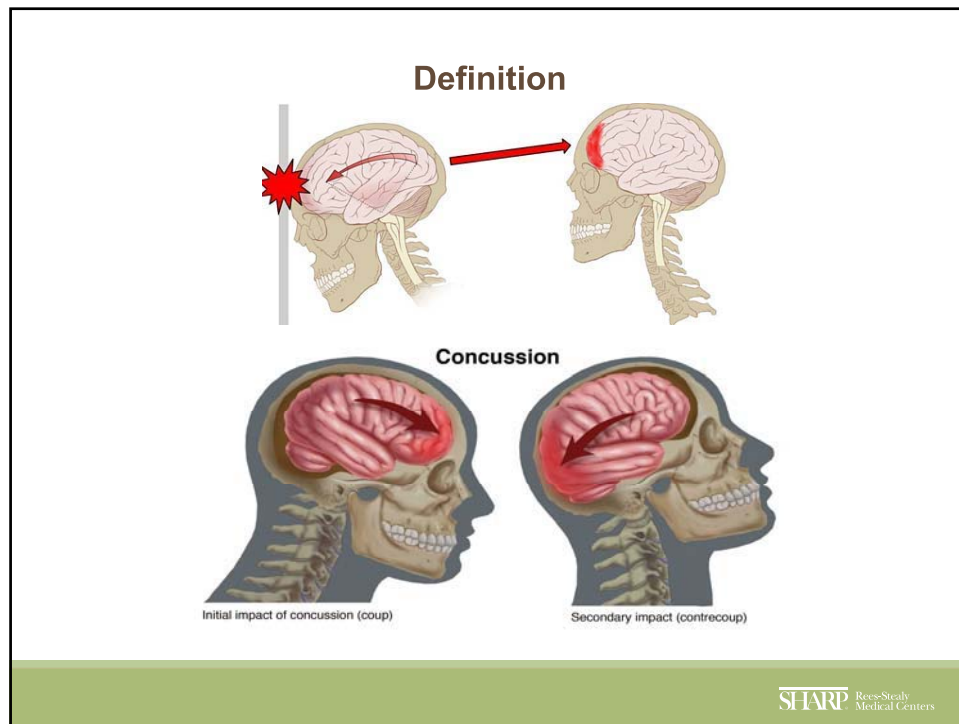


Concussion Traumatic Brain Injury (TBI)

- 1.6 – 3.8 million concussions/year (CDC)
- 33% occur during practice
- Boys: football, ice hockey, lacrosse
- Girls: soccer, lacrosse, basketball
- 90% of diagnosed concussions DO NOT involve loss of consciousness
- Highly under-diagnosed

Definition

- **Concussion** – *“A complex pathophysiologic process affecting the brain, induced by traumatic biomechanical forces”*
- Direct: blow to the head
- Indirect: deceleration (blow to the body)
- Results in a FUNCTIONAL rather than STRUCTURAL injury



Symptoms

- Physical: loss of consciousness, amnesia, headache, nausea
- Behavioral/Emotional: irritability, emotional lability
- Cognitive: difficulty problem solving, slowed reaction time, feeling in a “fog”
- Sleep disturbance: drowsiness

Concussion Diagnosis

- Observation of injury
- Clinical diagnosis
 - There is no “diagnostic test”
 - Based on history of injury, symptoms, and a comprehensive physical and mental exam
 - SCAT3
 - Pre- and post-injury



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Concussion Diagnosis

- 80-90% will resolve spontaneously within 7-10 days
- Physical AND cognitive rest until symptoms clear
 - Exercise
 - Schoolwork
 - TV/videogames/smartphone use (e.g., texting)
- Graded program of exertion over a seven-day period (minimum) before athlete is cleared for full competition
- “Return to Play” (RTP) and “Return to Learn” (RTL)

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Lasting Effects of Concussions

- Post-concussive syndrome (PCS)
- Symptoms such as headaches/dizziness may last for weeks to months after injury
- Second impact syndrome (controversial)
- CTE: chronic traumatic encephalopathy
- Progressive degenerative disease of the brain

CA Education Code 49475 (2012)

- Applies to any school district offering an athletic program
- An athlete who is suspected of sustaining a concussion or head injury in an athletic activity shall be immediately removed from the athletic activity for the remainder of the day, and shall not be permitted to return to the athletic activity until he or she is evaluated by a licensed health care provider trained in the management of concussions.

CA Education Code 49475 (2012)

- The athlete shall not be permitted to return to the activity until he/she receives written clearance to return to the activity from that licensed health care provider.
- On a yearly basis, a concussion and head injury information sheet shall be signed and returned by the athlete and the athlete's parent or guardian before the athlete's initiating practice or competition.

CA Assembly Bill 2127 (2015)

- Amended EC 49475
- "If the licensed health care provider determines that the athlete sustained a concussion or a head injury, the athlete shall also complete a graduated return-to-play protocol of no less than seven days in duration under the supervision of a licensed health care provider."

CA Assembly Bill 1451 (2012)

- Every two years all coaches are required to receive training about concussions
- CIF added certification in First Aid training, CPR and AEDs

So who's responsible?

- Coaches?
- School administration?
- ATCs (certified athletic trainers)?
- Physicians/team doctors?
- Parents?
- Athletes?
- Answer: ALL OF THE ABOVE!

Awareness & Education

- Making sure everyone involved in organized youth athletics is educated on the risks, recognition and prevention of concussions
- Treatment of concussion begins with recognizing the athlete has a concussion in the first place

Prevention

- Realizing the risk
- Good coaching
- Proper technique
- Knowledge of the rules and FOLLOWING THEM!
- Appropriate protective gear (doesn't make you invincible)

Know Before You Play

Online resources

- **CDC HEADS UP**
 - www.cdc.gov/headsup/youthsports
 - Concussion information and education
 - Coaches
 - Parents
 - Sports officials
 - Athletes
- **California Interscholastic Foundation (CIF)**
 - www.cifstate.org/sports-medicine/concussions