

SPORTS CONCUSSIONS FACTS AND FALLACIES



Disclosures

- I have no relevant financial or nonfinancial relationships to disclose.
- Presenting as a volunteer on behalf of the Brain Injury Association of Missouri
- Presentation in partnership with the Missouri AgrAbility Project and DHSS/TBI Grant



Objectives

- Discuss the causes, symptoms and impact of a concussion
- Learn how to assess and manage concussions
- Identify community resources



Concussion, Defined

- Concussion may be caused by a direct blow to the head, face, neck or elsewhere on the body with an “impulsive” force transmitted to the head.
- Concussion typically results in the rapid onset of short-lived impairment of neurologic function that resolves spontaneously.
- Concussion may result in neuropathological changes but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury.

Aubry et. al., Br J Sports Med 36(1): 6-10, 2002



Concussion - Defined

- Concussion is a bump or blow to the head or body that interrupts the normal functioning of the brain.
- Concussion is a mild traumatic brain injury.
- Every head injury is not a brain injury, and every brain injury is not a head injury.



Concussion

- Concussion may or may not involve a loss of consciousness.
- Typically, concussions do not show up on CAT or MRI scans.
- Most concussion symptoms resolve themselves within a short period of time. However, a small percentage of individuals experience enduring symptoms.



Concussion – Statistics

- CDC estimates 1.6 to 3.8 million sports related concussions occur annually
- 75% “Mild” with 9% requiring hospitalization
- Sports and recreation related brain injuries cause 900 deaths per year



Consequences of Concussion



Symptoms of Concussion

- ☐ Headache
- ☐ Visual Disturbance
- ☐ Dizziness
- ☐ Noise/Light Sensitivity
- ☐ Nausea
- ☐ Personality Changes



Cognitive Symptoms

- ☐ Attention Problems (e.g., easily distracted & divided attention)
- ☐ Learning and memory dysfunction
- ☐ “Fogginess”
- ☐ Fatigue
- ☐ Cognitive slowing or diminished speed of processing



Sleep Disturbance

- Difficulty falling asleep
- Sleeping less or more than usual
- Sleep patterns are reversed



Younger Athletes

- Younger athletes...
 - ▣ Appear to be more vulnerable to concussion
 - ▣ May experience more severe symptoms
 - ▣ Require longer to recover from concussion
- Children who have history of neurologic compromise (e.g., learning disability) also appear to require longer to recover from a concussion



Risks of Concussions

- ❑ Sustaining another concussion
- ❑ Post Concussion Syndrome
- ❑ Second Impact Syndrome
- ❑ Lifelong Disabilities
- ❑ CTE



Sustaining Another Concussion

- ❑ The athlete may not fully disclose all symptoms experienced.
- ❑ Even after being cleared for play, the youth may be slower to react and are at risk of another concussive incident.



Post Concussion Syndrome

- Symptoms can get worse and last for several weeks or month.
- More common with repeated concussions.



Second Impact Syndrome

- Results from incurring a concussion while still recovering from a prior brain injury
- Controversial
- Death can occur



Long Term Changes

- Cognitive
- Physical
- Perceptual/Sensory
- Emotional/Mental Health



CTE

- CTE - Chronic Traumatic Encephalopathy
- Progressive degenerative disease linked to repeated concussions
- Early stages of research – This condition is not widespread.



Concussion Assessment and Return to Activity



Initial Assessment

- Determine if individual may have sustained a concussion
- Presence of symptoms (not force of impact) is used to identify a concussion.



Initial Assessment

- ☐ Observed symptoms
- ☐ Reported symptoms
 - ☐ Person Injured
 - ☐ Individuals nearby or watching



Initial Assessment

- ☐ Altered mental status
- ☐ Disorientation, confusion, decreased attention and concentration, speed of processing, learning and memory, etc.
- ☐ Sensory disturbance (vision, decreased balance) – Coordination Test
- ☐ Assessment – CDC Check-List



Follow-up Assessment

- Assessment of cognitive symptoms (Screening to Comprehensive)
- Assessment of physical/sensory/emotional symptoms (Screening to Comprehensive)
- Computerized neurocognitive screening measures (baseline testing)
- Neuropsychological Evaluation – Comprehensive assessment of functional status, including cognitive and emotional well-being



Concussion Management

- **Rest until asymptomatic**
 - ▣ Physical AND Cognitive rest
- Expect gradual resolution of symptoms in 7 to 10 days (longer for younger athletes or persons with history of neurologic compromise such as prior concussion or learning disability)



Concussion Management

- Once symptom free at rest – graded exertion/exercise and if remain symptom free eventual Return to Play (RTP)
- *Graded Exertion Protocol* outlines **general** timeline to manage symptoms & RTP
- Clearing of symptoms may occur relatively soon (days) or endure for a period of time (weeks to months)



Return to Play (RTP)

- RTP is a complex determination dependent upon multiple variables (e.g., player and history of concussions), age of student, activity, time since last symptom, etc.
- Premature RTP – Increased risk of harm and injury
- Delayed RTP – difficult to re-engage “shell shock”



Considerations

- Helmets and mouth guards do not prevent concussion
- “Biggest hits” may not correlate with the severity of a concussion



Considerations

Concussion can result in multiple symptoms that compromise the academic performance, social functioning, and quality of life of student athletes



Brain Injury Resources

- Brain Injury Association of Missouri

- Support
- Education
- Recreation
- Advocacy

- Brain Injury Association of America



Brain Injury Association of Missouri: Support

- Support Groups
- Information & Referral Service



Brain Injury Association of Missouri: Education

- Survivor and Family Seminars
 - Southwest
 - Western
 - Eastern
- Annual Professional Development Conference
- Sports Concussions Seminars
- Educational Presentation



Brain Injury Association of Missouri: Recreation

- Donald Danforth Jr. Wilderness Camp
- Social Recreational Activities



Brain Injury Association of Missouri: Legislative Advocacy

- Legislation efforts
- Advocacy Alerts advocacy@biamo.org



Brain Injury Resources: Government Programs

- Department of Health and Senior Services
- Department of Mental Health



Brain Injury Resources: Employment Programs

- Missouri Vocational Rehabilitation
 - Employment
- Missouri AgrAbility Project
 - Farming
 - Ranching



For More Information, Contact:



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Thank you to BIA-MO Partners

□ Missouri AgrAbility Project

These materials are based upon work supported by the National Institute of Food and Agriculture (NIFA), United States Department of Agriculture, under sponsored project number 2018-41590-22323.

□ Department of Health and Senior Services (DHSS)/TBI Grant

This project was supported, in part by grant number 90TBSG0040-01-00, from the U.S. Administration for Community Living, Department of Health and Human Services, Washington, D.C. 20201. Grantees undertaking projects under government sponsorship are encouraged to express freely their findings and conclusions. Points of view or opinions do not, therefore, necessarily represent official Administration for Community Living policy.



Resources

- Brain Injury Association of Missouri
<http://www.biamo.org/>
- Brain Injury Association of America
<http://www.biausa.org/>
- Center for Disease Control (CDC)
<http://www.cdc.gov/concussion/>
- Center for Disease Control (CDC) Coaches Guide
http://www.cdc.gov/concussion/pdf/Coach_Guide-a.pdf

Resources

- Missouri State High Schools Activity Association
http://www.mshsaa.org/resources/pdf/ConcussionPacketHB300_Final.pdf
- National Athletic Trainers Association
<http://www.nata.org/health-issues/concussion>
- American Academy of Pediatrics
<http://www.aapnj.org/showcontent.aspx?MenuID=1017>