Concussion in Sports: Management and Return to Play

JONATHAN A. BECKER, M.D.
PROGRAM DIRECTOR, SPORTS MEDICINE FELLOWSHIP
TEAM PHYSICIAN
UNIVERSITY OF LOUISVILLE
Concussion Management

- Coordination of all aspects of your organization
  - Athletes
  - Parents
  - Coaches
  - Administration
  - Academics
- Compliance with rules
  - Organization (e.g. NCAA)
  - State
Importance of “Buy-In”

- Starts with education
  - Recognize symptoms of concussion
  - Initiate evaluation
  - Understand implications of the diagnosis
  - Awareness of return to play protocols
- Must occur prior to the season
  - Yearly updates
  - Parents, athletes, coaches
Compliance

- Make sure you are complying with laws and governing organizations
- Zachary Lystedt law is the model for youth sports
- College and professional leagues carry their own rules
Washington HB 1824
“The Zackery Lystedt Law”

—Athletes, parents and coaches must be educated about the dangers of concussions each year.

—If a young athlete is suspected of having a concussion, he/she must be removed from a game or practice and not be permitted to return to play.

—A licensed health care professional must clear the young athlete to return to play in the subsequent days or weeks.

This has now been implemented in many other states and in May, 2010, the NFL encouraged ALL states to adopt a similar law that applies to ALL youth sports organizations.
NCAA Concussion Mandates

- Student-athletes accept responsibility for reporting concussion symptoms
  - Educated about recognizing symptoms
- Institutions are required to develop a concussion management plan
  - Baseline neurological testing is considered a ‘best practice’
  - Included as part of an emergency action plan
- Coaches are to receive education about concussions
NCAA Concussion Mandates

- All athletes suffering a concussion are to be removed from play and NOT be allowed to return on the same day
  - They are also removed from academic and athletic environments that may prolong their symptoms
- All athletes suffering a concussion are to be evaluated by a physician with experience in the treatment of concussion
  - Return to play is directed by the physician without exception
Implementing a Management Plan

- **Preseason**
  - Education
  - Baseline testing

- **Injury/Return to Play**
  - Removal from play
  - Medical evaluation
  - Return to play protocol
Preseason Education

- Develop tools to educate
- Sessions for athletes, parents, and coaches
- **Sign a waiver expressing understanding**
  - “Shared responsibility” obligates the athlete to report symptoms in themselves or others
- There are no surprises when athletes are removed from play
- All participants understand the process for a return to play
Education Components

- Common symptoms of concussion
- Physical signs of concussion
- “All concussions are potentially serious and may result in complications including prolonged brain damage and death if not recognized and managed properly.”
- “It is important that if you, the student-athlete suffer any of the above signs or symptoms OR notice the same in a teammate, it is your responsibility to report this to the athletic training staff.”
CONCUSSION
A FACT SHEET FOR STUDENT-ATHLETES

WHAT IS A CONCUSSION?
A concussion is a brain injury that:
• Is caused by a blow to the head or body.
• Is caused by an object striking the head or body.
• Can happen even if you do not lose consciousness.

WHAT ARE THE SYMPTOMS OF A CONCUSSION?
You can’t see a concussion, but you might notice some of the symptoms right away. Other symptoms can show up hours or days after the injury. Concussion symptoms include:
• Amnesia.
• Confusion.
• Headache.
• Loss of coordination.
• Balance problems or dizziness.
• Double or blurry vision.
• Sensitivity to light or noise.
• Nausea (feeling that you might vomit).
• Feeling sluggish, foggy or groggy.
• Feeling unusually irritable.
• Concentration or memory problems (forgetting game plays, facts, meeting times).
• Slowed reaction time.

HOW CAN I PREVENT A CONCUSSION?
Basic steps you can take to protect yourself from concussions:
• Do not initiate contact with your head or helmet. You can still get a concussion if you are wearing a helmet.
• Avoid striking an opponent in the head. Undercutting, flying elbows, stepping on a head, checking an unprotected opponent, and stick to the head all cause concussions.
• Follow your athletics department’s rules for safety and the rules of the sport.
• Practice good sportsmanship at all times.
• Practice and perfect the skills of the sport.

WHAT SHOULD I DO IF I THINK I HAVE A CONCUSSION?
Don’t hide it. Tell your athletic trainer and coach. Never ignore a blow to the head. Also, tell your athletic trainer and coach if one of your teammates might have a concussion. Sports have injury timeouts and player substitutions so that you can get checked out. Report it. Do not return to participation in a game, practice or other activity with symptoms. The sooner you get checked out, the sooner you may be able to return to play.

GET CHECKED OUT. Your team physician, athletic trainer, or health care professional can tell you if you have had a concussion and when you are cleared to return to play. A concussion can affect your ability to perform everyday activities, your reaction time, balance, sleep and classroom performance. Take time to recover. If you have had a concussion, your brain needs time to heal. While your brain is still healing, you are much more likely to have a repeat concussion. In rare cases, repeat concussions can cause permanent brain damage, and even death. Severe brain injury can change your whole life.

IT’S BETTER TO MISS ONE GAME THAN THE WHOLE SEASON. WHEN IN DOUBT, GET CHECKED OUT.
For more information and resources, visit www.NCAA.org/health-safety and www.CDC.gov/Concussion.
CONCUSSION
A Must Read for NFL Players
Let’s Take Brain Injuries Out of Play

**Concussion Facts**
Concussion is a brain injury that alters the way your brain functions.
Concussion can occur from a blow to the head/neck, contact with the ground, or another player.
Most concussions occur without being knocked unconscious.
Severity of injury depends on many factors and is not known until symptoms resolve and brain function is back to normal.
All concussions are not created equally. Each player is different; each injury is different and all injuries should be evaluated by your team medical staff.

**Concussion Symptoms**
Different symptoms can occur and may not show up for several hours. Common symptoms include:
- Confusion
- Headache
- Amnesia/Difficulty remembering
- Balance problems
- Irritability
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- Difficulty concentrating
- Nausea
- Sensitivity to light
- Sensitivity to noise
- Loss of consciousness
- Fatigue
- Slowed reaction time
- Feeling more emotional
- Sleep disturbances
- Loss of concentration
- Numbness

Symptoms may worsen with physical or mental exertion (e.g., lifting, computer use, reading).

**Why Should I Report My Symptoms?**
- Practicing or playing while still experiencing symptoms can prolong the time to recover and return to play.
- Unlike other injuries, there may be significant consequences of “playing through” a concussion. Repetitive brain injury, when not treated promptly and properly, may cause permanent damage to your brain.

**What Should I Do If I Think I’ve Had a Concussion?**
- Report it. Never ignore symptoms even if mild.
- Get Checked Out. Your team medical staff will manage your concussions according to NFL criteria.
- Take Care of Your Brain. According to NFL criteria, short- or long-term changes affecting thinking or problems with memory and communication may be present after concussion.

If you think you’ve had a CONCUSSION...
Don’t hide it. Report it. Take time to recover.

**Headache**
**Nausea**
**Balance Problems or Dizziness**
**Double or Fuzzy Vision**
**Sensitivity to Light or Noise**
**Feeling Sluggish**
**Feeling Foggy or Groggy**
**Concentration or Memory Problems**
**Confusion**
Baseline Testing

- Not mandated for youth sports or the Lystedt Law
- NCAA considers it a “best practice”
- Should be done in conjunction with your local providers
  - Match the population and resources with the test you can provide
- Can be done in multiple ways
  - Neuropsychiatric testing
  - Balance testing
  - Symptom scales
Post-Injury Management

“Once a concussion has been identified, the athlete will be removed from play and not allowed to return on the same day.”

- After-care instructions are provided for roommates/parents
- Warning signs for seeking emergent care
- Follow-up medical evaluation is arranged
Post-Injury Management

“Once a concussion is suspected or diagnosed, the athlete will be evaluated by a physician with experience in the management of concussions.”

- Hopefully, these providers have been identified
- Return to play only occurs once the athlete is asymptomatic
- Post-concussion care is always individualized
- Coaches and parents are never responsible for a return to play decision

- The athlete is not only removed from sport, but other environments that may prolong symptoms
  - Avoid computers, video games, TV
  - Delayed testing; adjust academic commitments
Return to Play

- The athlete has resolution of symptoms.
- The athlete has undergone an appropriate stepwise return to activity and tolerating exertion without symptoms.
- Clearance for return to play resides solely with the physician and their designate.

When developing a plan, these return protocols may be vague as they will be individualized. However, consider including some core features that would apply to all.
Graduated RTP Protocol

- No activity
  - Physical/cognitive rest
- Light aerobic activity
  - <70% max HR
  - No resistance training
- Sport-specific activity
  - Adds movement
- Non-contact drills
  - Coordination and cognition
- Full practice
- Normal game play
RTP Protocol

- Activity proceeds in a stepwise process
- Can advance every 24 hours
  - In a perfect world
- Setbacks or return symptoms prompts an additional period of rest
- Return to the asymptomatic level
Sample Sport-Specific RTP

- **Exertion Step 1**: 20 minute stationary bike ride (10-14 MPH)
- **Exertion Step 2**: Interval bike ride: 30 sec sprint (18-20 MPH/10-14 MPH)/30 sec recovery x 10; and BW circuit: Squats/Push Ups/Situps x 20 sec x 3
- **Exertion Step 3**: 60 yard shuttle run x 10 (40 sec rest); and plyometric workout: 10 yard bounding/10 medicine ball throws/10 vertical jumps x 3; and non-contact, sports-specific drills for approximately 15 minutes
- **Exertion Step 4**: Limited, controlled return to full-contact practice
- **Exertion Step 5**: Full sport participation in a practice
Red Flags

- Concerning symptoms
  - Prolonged LOC
  - Extensive amnesia
  - Milder trauma
- “Worse” injuries
  - Recurrences
- Personality issues
  - Emotional, irritable
- Neurologic disorders
  - Seizure, weakness, migraines
Modifying Factors

*Certain athletes may be ‘at risk’ for prolonged/persistent symptoms:*

- **Prior concussion:** number, severity, duration of symptoms
- **Signs:** LOC, amnesia, seizure
- **Age:** under 18yo
- **Medical issues:** migraines, depression, ADHD, learning disabilities, sleep disorders
- **Medications:** psych, anticoagulants
- **Gender:** Female (?)
Key Points

- Preseason planning
  - Education for coaches, athletes, parents
  - Baseline testing
  - Identify specialists who care for athletes with concussion
- All athletes with signs or symptoms of a concussion are removed from activity
  - Physical and cognitive rest
- Concussion management and return to play needs to be directed by a physician
  - Preferably, those with an expertise in the area
  - The return to play is done in a stepwise fashion
Resources

- **CDC website**
  Online education
  Resources for athletes, parents, coaches

- **NCAA health and safety website**
  Education handouts
  Examples of management plans