2014 NATA Position Statement
Management of Sport Concussion
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Co-Authors

Robert Cantu, MD
• Department of Surgery, Emerson Hospital; Neurological Sports Injury Center; Brigham and Women’s Hospital

Gerard A. Gioia, PhD
• Children’s National Medical Center, Dept. of Pediatrics and Psychiatry; George Washington University School of Medicine

Kevin M. Guskiewicz, PhD, ATC
• Co-Director, Matthew Gfeller Sport-Related TBI Research Center, Department of Exercise and Sport Science, University of North Carolina at Chapel Hill

Jeffery Kutcher, MD
• Michigan NeuroSport, Department of Neurology, University of Michigan

Michael Palm, MBA, ATC
• AthletiCo

Tamara C. Valovich McLeod, PhD, ATC, FNATA
• Athletic Training Program, A.T. Still University
Concussion Risk

• **1.6 - 3.8 million sport and recreation concussions / year**
  (Langlois 2006)

• **Female**
  – Higher incidence
    (Gessel, *J Athl Train*, 2007)
  – Longer recovery
    (Covassin, *Neurosurg*, 2007)

• **History of concussion**
  (Guskiewicz, *JAMA*, 2003)
  – 1 injury 1.5x risk
  – 2 injuries have 2.8x risk
  – 3+ injuries have 3.5x risk

Gibson, in preparation
Sections

1. Education and Prevention

2. *Documentation and Legal Aspects

3. Evaluation and Return to Play

4. Other Considerations
   – Equipment
   – Pediatric Concussion
   – Home Care
   – Medications and Diet
   – Rest
   – Multiple Concussions
     • Second Impact Syndrome
     • *Long-Term Consequences
Education and Prevention

• Proper terminology: concussion / mild traumatic brain injury – “ding” and “bell ringer” are colloquial terms

• Educate parents and coaches on: prevention, injury recognition and referral, proper return to participation, physical and cognitive restrictions for concussed athletes, and ramifications of improper concussion management.

• *Document and educate athletes on potential modifying factors that could delay a return to play – e.g. learning disabilities, previous concussions, early physical activity
Education and Prevention

• Athletes, coaches and parents should be advised to read all warning labels associated with protective equipment.

• Coaches, athletes, and parents should understand the limitations of protective equipment to prevent concussions.
*Documentation and Legal Aspects*

- AT should follow the policies, procedures and laws from local, state, and athletic conference bodies

- Document the athlete’s (and parent’s) understanding of concussive signs and symptoms and their responsibility to report a concussion.

- Communicate the status of concussed athletes to the managing physician (eg. MD or DO) on a regular basis.
Evaluation and Return to Play

• Baseline examination for all high risk athletes
  – all athletes when feasible

• *Annual baseline examinations for adolescent athletes and those with a recent concussion

• Baseline exam should include:
  – clinical history (including symptoms)
  – neurological evaluation: motor control (e.g. balance), and neurocognitive function

• Similar environments for the baseline and post-injury exams to maximize performance
  – Review examinations for sub-optimal performance
Evaluation and Return to Play

- Any athlete suspected of sustaining a concussion should be removed from play and evaluated by an AT or physician.

- The clinical exam is the gold standard for concussion diagnosis
  - Symptom and motor control assessments support the exam
  - Brief concussion evaluation tools (e.g. SAC) when a rapid assessment is necessary (e.g. during competition)

- *A concussed athlete should not be returned to athletic participation on the same day as injury.
Evaluation and Return to Play

*Following the concussion diagnosis, a daily focused examination should be completed to monitor recovery
  – *Daily testing of neurocognitive function and motor control is typically not needed until asymptomatic

*Concussed athletes should not return to physical activity without being evaluated and cleared by a physician or designate (e.g. AT) specifically trained and experienced in concussion evaluation and management.
**Evaluation and Return to Play**

- Once cleared, a progressive physical exertion protocol should be completed before unrestricted return to play.
  - *Each stage separated by 24 hours*
  - *Typically 1 week away from competition*

- *Grading scales should not be used for injury management*
  - Evaluate and treat each athlete on a case-by-case basis*
  - The concussion may be retrospectively graded for medical record documentation.
    - e.g. indicating duration and intensity of symptoms
Other Considerations: Equipment

• Helmets are designed to prevent catastrophic head injuries, not to significantly reduce the risk of cerebral concussions.

• Consistent evidence to support the use of mouthguards for concussion mitigation is not available.
  - A properly fitted mouthguard does reduce dental injuries.
Other Considerations: Pediatric Concussion

• Children and adolescents may take longer to return to pre-injury levels and may require a prolonged return to play progression.

• *Age-appropriate, validated assessment tools should be utilized with younger populations.
  – Symptom scales
  – Neurocognitive assessments
  – Input of a parent, teacher, or responsible adult.
Other Considerations: Home Care

- A standard concussion home-instruction form should be used
  - A copy maintained in the medical record

- Athletes should be instructed to avoid medications other than acetaminophen
  - Current medications should be reviewed by the physician

- Concussed athletes should be instructed to avoid ingesting alcohol, illicit drugs, or other substances that might interfere with cognitive function and neurologic recovery.
**Other Considerations:**

**Home Care**

- Rest is currently the best practice for concussion recovery
  - Typically no need to wake the athlete during night unless instructed by a physician.

- *During acute injury recovery, athletes should be instructed to avoid any physical or mental exertion that exacerbates symptoms.*
  - Including physical education classes and recreation
**Other Considerations:**

**Home Care**

- *School administrators, counselors, and instructors should be made aware of the athlete’s injury with a recommendation for academic accommodation during the recovery period.

- Concussed athletes should be instructed to eat a well-balanced diet that is nutritious in both quality and quantity and stay well hydrated.
Other Considerations: Multiple Concussions

- A more conservative return to play strategy should be adopted for athletes with a concussion history.

- Referral to a physician with concussion specific training should be considered when multiple concussions:
  - Result from lessening force
  - Increase in severity with each injury
  - Result in a change in baseline brain function

- Athletic trainers should be aware of the potential for second impact syndrome in young athletes who sustain a second injury prior complete resolution of the first.

- The athletic trainer should be aware of the potential for long-term consequences of multiple sub-concussive and concussive impacts.
Thank you

Steven P. Broglio, PhD ATC
Director, NeuroSport Research Laboratory
734.764.9669
broglio@umich.edu