Muhlenberg College Athletic Training

Concussion Management Plan

The purpose of this plan is to make coaches, student-athletes, medical personnel, and administrators aware of the significance of concussions, and to inform them of the Muhlenberg College Athletic Training concussion management plan when a concussion is suspected and/or reported.

Concussions and other brain injuries can be serious and potentially life threatening injuries in sports. Research indicates that these injuries can also have serious consequences later in life if not managed properly. In an effort to combat this injury, the following concussion management plan will be used for Muhlenberg College student-athletes suspected of sustaining a concussion.

A **concussion** occurs when there is a direct or indirect insult to the brain. As a result, transient impairment of mental functions such as memory, balance/equilibrium, and vision may occur. It is important to recognize that many sport-related concussions *do not* result in loss of consciousness and, therefore, all suspected head injuries should be taken seriously. Coaches and fellow teammates can be helpful in identifying potential concussions, because a concussed student-athlete may not be aware of their condition or may try to hide the injury to stay in the game or practice.

Prior to the start of each team's competitive season:

1. Coaches and student-athletes will be annually presented with educational material on concussions and will sign a statement in which the coach and student-athlete accept the responsibility for reporting the student athlete's injuries and illnesses to the athletic training staff, including signs and symptoms of concussions.

2. Concussion management begins with pre-season baseline testing. All student-athletes will complete the ImPACT Concussion Assessment Baseline Exam and baseline Balance Error Scoring System (BESS) prior to the first practice in their first semester of participation. This baseline assessment will be used post-injury at appropriate time intervals.

Concussion Assessment

1. Upon suspicion of a concussion, the student-athlete will be removed from practice or competition and evaluated by medical personnel with training in the diagnosis, treatment, and management of concussion. The initial evaluation will include:

    - Symptom assessment.
    - Physical and neurological exam.
    - Cognitive assessment.
    - Balance exam.
    - Clinical assessment for cervical spine trauma, skull fracture and intracranial bleeding.

2. **No athlete is permitted to return to play the same day following a diagnosed concussion**.

3. Any student-athlete will be immediately referred for emergency care via the venue specific Emergency Action Plan if he/she presents with any of the following:

    - Glasgow Coma Scale <13.
    - Prolonged loss of consciousness.
    - Focal neurological deficit suggesting intracranial trauma.
    - Repetitive emesis.
    - Persistently diminishing/worsening mental status or other neurological signs/symptoms.
    - Spine injury.

4. The following protocol is to apply following the diagnosis of a concussion:

    - Time of Injury: clinical evaluation & symptom checklist; referral if necessary.
    - 1-3 hrs post-injury: symptom checklist; referral if necessary.
    - Next Day: follow-up clinical evaluation with additional neurocognitive testing - Sport Concussion Assessment Tool 3 (SCAT3) and Vestibular/Ocular-Motor Screening (VOMS); notification of team physician that student-athlete sustained a concussion
    - Follow-up evaluations daily to track symptoms.
    - A student-athlete experiencing concussion symptoms over 1 week in duration, or as symptoms dictate, will be referred to the team physician for further evaluation.

5. Oral and/or written instructions for at-home care following concussion will be given to the student-athlete and parent/roommate/teammate for continued monitoring until follow-up with appropriate medical staff.

Return to Play

1. After a minimum 24 hour period of remaining asymptomatic, the student-athlete is re-tested and the following measures are compared to his/her baseline:

   a) Symptom Assessment
   b) Neuropsychological Assessment
   c) Balance Assessment

   If the measures (a-c) listed above are satisfactory to baseline as determined by the team physician, then the physician can instruct the athletic trainer to begin a graduated exertional return to play (RTP) protocol with the athlete to assess for increasing signs and symptoms. Symptoms should be reassessed immediately following each exertional step in the RTP protocol. Muhlenberg College's team physician, or designated healthcare provider, and athletic trainers will supervise student-athletes through the RTP protocol and post-exertion assessments. The RTP protocol should occur in a medically supervised stepwise fashion with gradual increments in physical exertion and risk of contact.

2. No athlete can return to full activity or competitions until they are asymptomatic in limited, controlled, and full-contact activities, and cleared by the team physician and or their designee.

IF AT ANY POINT DURING THIS PROCESS THE ATHLETE BECOMES SYMPTOMATIC, THE ATHLETE SHOULD BE RE-ASSESSED DAILY UNTIL ASYMPTOMATIC. ONCE ASYMPTOMATIC AND CLEARED BY TEAM PHYSICIAN, THE ATHLETE MAY RETURN TO THE PROTOCOL ONE STEP BELOW THE PREVIOUSLY ATTEMPTED STEP.

Stage	Activity	Objective
1. No activity	Complete cognitive (e.g. mental) rest (see above)	Recovery
2. Light aerobic exercise	Walking, swimming or stationary bicycle keeping intensity less than 70% of maximum predicted heart rate	Increase heart rate
3. Sport-specific exercise	Skating drills in ice hockey, running drills in soccer. No head impact activities	Add movement
4. Non-contact training drills	Progression to more complex training drills, e.g. passing drills in football and ice hockey	Exercise, coordination and use of brain
5. Full contact practice	**Following medical clearance**, participate in normal training activities	Restore confidence and allow coaching staff to assess functional skills
6. Return to play	Normal game play	

3. The RTP protocol is a 6 stage process over no less than one week. (Zurich Conference, 2008)

4. The athletics medical staff will provide incident documentation, evaluation, continued management, and clearance of the student-athlete with a concussion.

5. Repeat neuro-psychological testing for returning concussed student athlete prior to the following year to establish a new "baseline".

6. Athletics staff, student-athletes and officials should continue to emphasize that flagrant head or neck contact in any sport should not be permitted and current rules of play be strictly enforced.

7. Additional means of reducing head trauma expose include:

    a. Adherence to the Inter-Association Consensus: Year-Round Football Practice Contact Guidelines

    b. Adherence to Inter-Association Consensus: Independent Medical Care Guidelines

    c. Always taking a "safety first" approach to the sport

    d. Taking the head out of contact

    e. Proper coaching techniques and student-athlete education regarding safe play.

Return to Academics

In addition to physical rest following a concussion, it is imperative to reduce cognitive stress on the brain. A return to academics management plan will be enacted following concussion to a Muhlenberg College student-athlete.

1. The athletic trainer will notify the Director of Student Health Services and the student-athlete will report to the Health Center to meet with the Director.

2. The Director contacts the student-athlete's professors requesting appropriate modifications to academic activity.

3. The student should then begin an individualized return to academic activities based on symptoms. Their return should include:

    a. Compliance with ADAAA.

    b. No classroom activity on same day as concussion.

    c. Remaining at home/dorm if student-athlete cannot tolerate light cognitive activity.

    d. Gradual return to classroom/studying as tolerated.

4. Re-evaluation by team physician if symptoms worsen with academic challenges

    a. Additional guidance by multi-disciplinary team which may include but is not limited to:

        i. Team physician
        ii. Athletic trainer
        iii. Psychologist/counselor
        iv. Neuropsychologist
        v. Faculty athletics representative
        vi. Academic counselor
        vii. Course instructor(s)
        viii. College administrators
        ix. Office of Accessibility Resources and Service representatives
        x. Coaches

5. Referral to Office of Disability and off-campus Concussion Management Center if symptoms persist longer than 2 weeks.

9/2010, 3/13, 8/14, 5/2017

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.
  - From contact with another player, hitting a hard surface such as the ground, ice or floor, or being hit by a piece of equipment such as a bat, lacrosse stick or field hockey ball.
- Can change the way your brain normally works.
- Can range from mild to severe.
- Presents itself differently for each athlete.
- Can occur during practice or competition in ANY sport.
- **Can happen even if you do not lose consciousness.**

HOW CAN I PREVENT A CONCUSSION?

Basic steps you can take to protect yourself from concussion:

- 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 sticks 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 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 consciousness.
- Balance problems or dizziness.
- Double or fuzzy 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.

Exercise or activities that involve a lot of concentration, such as studying, working on the computer, or playing video games may cause concussion symptoms (such as headache or tiredness) to reappear or get worse.

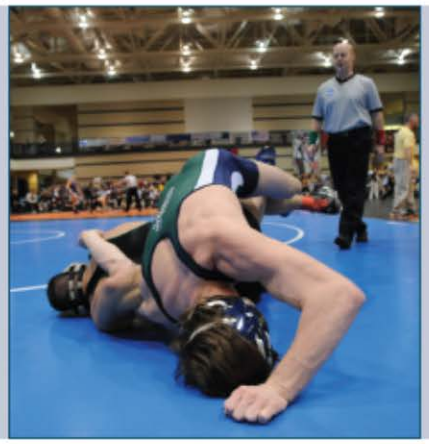
WHAT SHOULD I DO IF I THINK I HAVE A CONCUSSION?

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 Information Sheet

CEREBRAL CONCUSSION

Mechanism: Direct or indirect blow to the head.

Signs & Symptoms: these are highly variable but generally may include headache, tinnitus (ringing in ears), nausea, irritability, confusion, disorientation, dizziness, loss of consciousness, posttraumatic or anterograde amnesia (can't remember things that occurred after the injury), retrograde amnesia (can't remember things that occurred before the injury), concentration difficulty, blurred vision, light sensitivity, and sleep disturbances.

If signs/symptoms worsen all athletes are instructed to go to emergency room.

SECOND IMPACT SYNDROME

This occurs because of rapid swelling and herniation of the brain after a second head injury occurs before the symptoms of a previous head injury have resolved.

Mechanism: The second impact may be relatively minor and, in some cases, may not even involve a blow to the head. A blow to the chest or back may create enough force to snap the athlete's head and send acceleration/deceleration forces to an already compromised brain.

Second impact syndrome is most likely to occur in athletes less than twenty years of age.

Signs/Symptoms: Often there is no loss of consciousness and may look stunned. The athlete may remain standing and be able to leave the playing field under his or her own power. However, within fifteen seconds to several minutes, the athlete's condition worsens rapidly, with dilated pupils, loss of eye movement, loss of consciousness leading to coma, and respiratory failure. ***Second impact syndrome is a life-threatening situation that has a mortality rate of approximately 50%.***

I, _____, a Muhlenberg College student athlete understand what I have read about concussions and second impact syndrome and acknowledge that I have been informed of the signs and symptoms and of the importance of reporting sign & symptoms to the athletic medical staff.

Signature: _____ Date:_____

Muhlenberg College

Student-Athlete Concussion Statement

_____ I understand that it is my responsibility to report all injuries and illnesses to my athletic
initial Trainer and/or team physician.

_____ I have read and understand the *NCAA Concussion Fact Sheet*.
initial

_____ I have read and understand the *Muhlenberg College Concussion Management Protocol*.
initial

After reading the NCAA Concussion fact sheet, I am aware of the following information: **Please initial each statement.**

_____ A concussion is a brain injury, which I am responsible for reporting to my team
initial Physician or athletic trainer.

_____ A concussion can affect my ability to perform everyday activities, and affect reaction
initial time, balance, sleep and classroom performance.

_____ Your cannot see a concussion, but you might notice some of the symptoms right away.
initial Other symptoms can show up hours or days after the injury.

_____ If I suspect a teammate has a concussion, I am responsible for reporting the injury to my
initial Team physician or athletic trainer.

_____ I will not return to play in a game or practice if I have received a blow to the head or
initial Body that results in concussion-related symptoms.

_____ Following concussion the brain needs time to heal. You are much more likely to have a
initial Repeat concussion if you return to play before your symptoms resolve.

_____ In rare cases, repeat concussions can cause permanent brain damage, and even death.
initial

_____ _____
Signature of Student-Athlete Date

_____
Printed name of Student-Athlete

CONCUSSION

A FACT SHEET FOR COACHES

THE FACTS

- A concussion is a brain injury.
- All concussions are serious.
- Concussions can occur without loss of consciousness or other obvious signs.
- Concussions can occur from blows to the body as well as to the head.
- Concussions can occur in *any* sport.
- Recognition and proper response to concussions when they first occur can help prevent further injury or even death.
- Athletes may not report their symptoms for fear of losing playing time.
- Athletes can still get a concussion even if they are wearing a helmet.
- Data from the NCAA Injury Surveillance System suggests that concussions represent 5 to 18 percent of all reported injuries, depending on the sport.

WHAT IS A CONCUSSION?

A concussion is a brain injury that may be caused by a blow to the head, face, neck or elsewhere on the body with an "impulsive" force transmitted to the head. Concussions can also result from hitting a hard surface such as the ground, ice or floor, from players colliding with each other or being hit by a piece of equipment such as a bat, lacrosse stick or field hockey ball.

RECOGNIZING A POSSIBLE CONCUSSION

To help recognize a concussion, watch for the following two events among your student-athletes during both games and practices:

1. A forceful blow to the head or body that results in rapid movement of the head;

-AND-

2. Any change in the student-athlete's behavior, thinking or physical functioning (see signs and symptoms).

SIGNS AND SYMPTOMS

Signs Observed By Coaching Staff

- Appears dazed or stunned.
- Is confused about assignment or position.
- Forgets plays.
- Is unsure of game, score or opponent.
- Moves clumsily.
- Answers questions slowly.
- Loses consciousness (even briefly).
- Shows behavior or personality changes.
- Can't recall events before hit or fall.
- Can't recall events after hit or fall.

Symptoms Reported By Student-Athlete

- Headache or "pressure" in head.
- Nausea or vomiting.
- Balance problems or dizziness.
- Double or blurry vision.
- Sensitivity to light.
- Sensitivity to noise.
- Feeling sluggish, hazy, foggy or groggy.
- Concentration or memory problems.
- Confusion.
- Does not "feel right."

PREVENTION AND PREPARATION

As a coach, you play a key role in preventing concussions and responding to them properly when they occur. Here are some steps you can take to ensure the best outcome for your student-athletes:

- Educate student-athletes and coaching staff about concussion. Explain your concerns about concussion and your expectations of safe play to student-athletes, athletics staff and assistant coaches. Create an environment that supports reporting, access to proper evaluation and conservative return-to-play.
  - Review and practice your emergency action plan for your facility.
  - Know when you will have sideline medical care and when you will not, both at home and away.
  - Emphasize that protective equipment should fit properly, be well maintained, and be worn consistently and correctly.
  - Review the Concussion Fact Sheet for Student-Athletes with your team to help them recognize the signs of a concussion.
  - Review with your athletics staff the NCAA Sports Medicine Handbook guideline: Concussion or Mild Traumatic Brain Injury (mTBI) in the Athlete.
- Insist that safety comes first.
  - Teach student-athletes safe-play techniques and encourage them to follow the rules of play.
  - Encourage student-athletes to practice good sportsmanship at all times.
  - Encourage student-athletes to immediately report symptoms of concussion.
- Prevent long-term problems. A repeat concussion that occurs before the brain recovers from the previous one (hours, days or weeks) can slow recovery or increase the likelihood of having long-term problems. In rare cases, repeat concussions can result in brain swelling, permanent brain damage and even death.

IF YOU THINK YOUR STUDENT-ATHLETE HAS SUSTAINED A CONCUSSION:

Take him/her out of play immediately and allow adequate time for evaluation by a health care professional experienced in evaluating for concussion.

An athlete who exhibits signs, symptoms or behaviors consistent with a concussion, either at rest or during exertion, should be **removed immediately from practice or competition** and should not return to play until cleared by an appropriate health care professional. Sports have injury timeouts and player substitutions so that student-athletes can get checked out.

IF A CONCUSSION IS SUSPECTED:

1. **Remove the student-athlete from play.** Look for the signs and symptoms of concussion if your student-athlete has experienced a blow to the head. Do not allow the student-athlete to just "shake it off." Each individual athlete will respond to concussions differently.

2. **Ensure that the student-athlete is evaluated right away by an appropriate health care professional.** Do not try to judge the severity of the injury yourself. Immediately refer the student-athlete to the appropriate athletics medical staff, such as a certified athletic trainer, team physician or health care professional experienced in concussion evaluation and management.

3. **Allow the student-athlete to return to play only with permission from a health care professional with experience in evaluating for concussion.** Allow athletics medical staff to rely on their clinical skills and protocols in evaluating the athlete to establish the appropriate time to return to play. A return-to-play progression should occur in an individualized, step-wise fashion with gradual increments in physical exertion and risk of contact.

4. **Develop a game plan.** Student-athletes should not return to play until all symptoms have resolved, both at rest and during exertion. Many times, that means they will be out for the remainder of that day. In fact, as concussion management continues to evolve with new science, the care is becoming more conservative and return-to-play time frames are getting longer. Coaches should have a game plan that accounts for this change.

IT'S BETTER THEY MISS ONE GAME THAN THE WHOLE SEASON. WHEN IN DOUBT, SIT THEM OUT.

For more information and resources, visit www.NCAA.org/health-safety and www.CDC.gov/Concussion.

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Mechanism: The second impact may be relatively minor and, in some cases, may not even involve a blow to the head. A blow to the chest or back may create enough force to snap the athlete's head and send acceleration/deceleration forces to an already compromised brain.

Second impact syndrome is most likely to occur in athletes less than twenty years of age.

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I, _____, a Muhlenberg College coach understand what I have read about concussions and second impact syndrome and acknowledge that I have been informed of the signs and symptoms and of the importance of my student-athlete reporting sign & symptoms to the athletic medical staff.

Signature: _____ Date:_____

Muhlenberg College
Coaches Concussion Statement

☐ I have read and understand the *Muhlenberg College Concussion Management Protocol.*

☐ I have read and understand the *NCAA Concussion Fact Sheet.*

After reading the NCAA Concussion fact sheet and reviewing the Muhlenberg College Concussion Management Protocol, I am aware of the following information:

_____ A concussion is a brain injury which athletes should report to the medical
Initial staff.

_____ A concussion can affect the athlete's ability to perform everyday activities, and affect
Initial reaction time, balance, sleep, and classroom performance. You cannot see a concussion, but you might notice some of the symptoms right away. Other symptoms can show up hours or days after the injury.

_____ I will not knowingly allow the athlete to return to play in a game or practice if
Initial he/she has received a blow to the head or body that results in concussion related symptoms.

_____ Athletes shall not return to play in a game or practice on the same day that
Initial they are suspected of having a concussion.

_____ If I suspect one of my athletes has a concussion, it is my responsibility to
Initial have that athlete see the medical staff.

_____I will encourage my athletes to report any suspected injuries and illnesses to
Initial the medical staff, including signs and symptoms of concussions.

_____ Following concussion the brain needs time to heal. Concussed athletes are
Initial much more likely to have a repeat concussion if they return to play before their symptoms resolve. In rare cases, repeat concussions can cause permanent brain damage and even death.

_____ I am aware that every first-year student-athlete participating on specified
Initial Muhlenberg College teams must be baseline tested prior to participation in sport. These tests allow for comparison of symptoms, neurocognition, and balance if the athlete were to become injured.

_____ I am aware that athletes diagnosed with a concussion will be assessed by the
Initial team physician or designee and the athletic training staff. Once symptoms have resolved athletes will begin a supervised graduated return to play protocol following full recovery of neurocognition and balance.

_____ _____
Signature of Coach Date

_____
Printed name of Coach