



## **Georgia Tech Athletics Concussion Program and Protocol**

Estimates of greater than 300,000 concussions occur per year in athletic events and many concussions go unreported for many reasons. Reasons for not reporting possible concussions include fear of being pulled from competition and lack of education of the symptoms of concussion. Concussions also remain one of the more difficult injuries to assess and treat. Objective testing tools are not always the most practical method to assess the severity of the injury. There are also no real definitive treatment options available except physical and cognitive rest for the athlete.

With this background, the Georgia Tech Concussion Program strives to combine all areas of concussion evaluation and management into a comprehensive team based approach to the care of the student-athlete. The main areas of the program include education, evaluation, and management.

The recent 3<sup>rd</sup> Edition Zurich Concussion consensus statement has much of what is discussed here in greater detail. NCAA guidelines as well as the Concussion Safety Protocol Checklist will also be followed and polices will be adjusted accordingly in the management of concussions as the guidelines continue to evolve. This protocol is also consistent with the Inter-Association Consensus: Diagnosis and Management of Sport-Related Concussion Best Practices.

### **Education**

Education is an important aspect of the program as studies have shown that both coaches and student-athletes are not always aware of the symptoms as well as seriousness of concussions.

Pre-season education will consist of an educational presentation and/or handout for later referral for the athlete and coach. Student-athletes who sustain a concussion will also be reminded of the symptoms, usual duration, and return to play criteria for concussions. The importance of self-reporting will be stressed in this educational component. Student-athletes will also be reminded of the critical nature of this self-assessment and that it be honest and thorough. Education will also include information on the potential progression of post-concussion syndrome if they return too soon. Prevention of concussion will also be discussed including appropriate equipment, strength training, and utilization of safer techniques in their sport.

Additionally, all team physicians, coaches, athletic trainers, and designated academic support staff will receive yearly educational updates on concussion evaluation and management. The director of sports medicine will brief the director of athletics annually on current concepts in concussion management. All will sign documents acknowledging receiving such training.

## Evaluation and Management

Evaluation and management will consist of pre-participation baseline testing, on-field management, acute management, and return to play progression. Chronic and multiple concussion management will be addressed in conjunction with our referral program to neurology.

### Pre-Participation Assessment

Each student-athlete will be asked to provide a detailed history of all past brain injury or concussions on their medical history form to be completed prior to obtaining their pre-participation physical.

Pre-participation testing will consist of baseline SCAT 3/SAC, ImPACT testing, and BESS balance testing. Baseline testing will occur upon a student-athlete's entry into the program and may be repeated if player sustained a concussion during the previous year.

### On-Field Management of Acute Concussions

When a student-athlete sustains a suspected concussion or head injury, or exhibits signs/symptoms consistent with a concussion, they will be evaluated first by an athletic trainer and if present, a physician. The student-athlete will be removed from practice or competition during the evaluation. Below is a chart for coverage for NCAA varsity sports by medical personnel trained in the diagnosis, treatment, and initial management of acute concussion:

<b>Sport</b>	<b>Competition Coverage</b>	<b>Practice Coverage</b>
Baseball	Present	Present
Men's Basketball	Present	Present
Women's Basketball	Present	Present
Men's Cross Country	Present	Present
Women's Cross Country	Present	Present
Football	Present	Present

Men's Golf	Available	Available
Softball	Present	Present
Men's Swimming & Diving	Present	Present
Women's Swimming & Diving	Present	Present
Men's Tennis	Present	Present
Women's Tennis	Present	Present
Men's Track & Field	Present	Present
Women's Track & Field	Present	Present
Volleyball	Present	Present

Present = Medical personnel on site.

Available = Medical personnel can be contacted via immediate communication.

The initial evaluation will include a brief history of signs and symptoms as well as some form of SCAT3/SAC evaluation. A physical exam including, but not limited to, cervical spine assessment and evaluation for skull fracture or intracranial hemorrhage will be conducted as well.

If a concussion is diagnosed at the time of initial exam, the student-athlete will not return to play, symptoms will be monitored and serial examinations performed to evaluate progression of the injury. If an alternate diagnosis is confirmed, the student-athlete may return to play if determined to be appropriate medically.

The student-athlete will be re-evaluated after the game or practice to assess whether or not symptoms have returned, increased, or decreased. The student-athlete will also receive instruction on the need for re-evaluation should symptoms worsen during that evening. Whenever possible, the student-athlete should be evaluated by a team physician the next day.

Abnormal neurologic findings or worsening symptoms will warrant emergency care and immediate referral to the nearest hospital.

### Acute Management

If warranted by presenting circumstances the emergency action plan for the specific venue will be activated to effectively manage the injury. The emergency action plan, including transportation for appropriate medical care, will be initiated for any of the following: Glasgow Coma Scale < 13; prolonged loss of consciousness; focal neurological deficit suggesting intracranial trauma; repetitive emesis; persistently diminished/worsening mental status or other neurological signs/symptoms; spine injury.

All student-athletes with a diagnosed concussion will receive written Concussion Take Home Instructions for their home care. A copy of these instructions will be given to a responsible adult who can assist the student-athlete with care. This information will also be placed in the student-athlete's medical file. In addition, cognitive instructions will be provided that will specify, as appropriate:

- Cognitive rest.
- Homework, reading or studying restrictions.
- An excusal from classes authorized by the team physician or director of sports medicine.

Upon diagnosis, the Associate Athletic Director for Academic Services or the Director of Academic Services will be notified.

Student-athletes determined to have a concussion will be evaluated daily by the athletic trainer and at multiple intervals by the team physician during the course of symptoms. SCAT3/SAC and/or ImPACT testing will be done about 24 hours after injury. No pain medication will be used for the first 24 hours to determine severity of injury. If symptoms are improving, acetaminophen may be considered appropriate for pain control. The athlete will also utilize as much cognitive rest as possible while physical rest is employed during symptomatic phase.

The team physician will continue to monitor and evaluate the student-athlete throughout their recovery and take appropriate action as needed. If symptoms are worsening, or if there is prolonged recovery, CT or MRI imaging will also be considered along with neurologic referral.

#### Return to Play Progression

Once the student-athlete is asymptomatic, SCAT3/SAC and/or ImPACT testing will be performed again and re-evaluation with a team physician done. If the student-athlete performs satisfactorily on testing and physical exam is normal, they will be considered to start the return to play progression. The return to play sequence will follow a daily progression from cardiopulmonary exercise, to weight lifting, to non-contact drills, then contact drills and finally return to game activity and will be supervised by the team physician or an athletic trainer with experience in concussion diagnosis and treatment. If the student-athlete becomes symptomatic during the progression, they will rest and be re-evaluated the next day. If they are asymptomatic upon the re-evaluation then the progression will resume. Final determination of return to play rests with the team physician.

#### Return to Learn

- The sports medicine staff will coordinate with the academic staff person recommended by the Associate AD for Student-Athlete Academic Services or Director of Academic Services and assigned to the injured student-athlete's sport. In collaboration, they will develop a reasonable and realistic return to learn management plan for student-athletes who have sustained concussions that require missed class or study time. This plan will be ADA compliant, and will include the following: The point person for return-to-learn will be the Associate AD for Student-Athlete Academic Services.

- A multi-disciplinary team will help those student-athletes who have more complex or prolonged return-to-learn scenarios. This team includes: team physician, athletic trainer, sport-specific academic staff person, Dean of Students (Request Assistance process), and Office of Disability Services(<http://www.adapts.gatech.edu/>, for temporary accommodations related to recovery from injury).
- Student-athletes may participate in no classroom activity on the same day as a concussion, and may remain at home/dorm if they cannot tolerate light cognitive activity.
- All return-to-learn plans will be individualized, with gradual return to academic activity as tolerated.
- The academic schedule will be modified for up to 2 weeks, as indicated, with help from the point person.
- The point person, Dean of Students and Office of Disability Services will remain in communication with faculty and closely monitor academic performance and any issues with cognitive ability.
- If the student-athlete remains symptomatic for more than 2 weeks, he/she will be re-evaluated by the team physician or a member of the multi-disciplinary team.
- For cases that cannot be managed by schedule modification, campus resources will be utilized, including: Registrar, Faculty Athletics Representative, Athletic Compliance Office, and Office of Disability Services.

### Complex Concussions and Post-Concussion Syndrome

Student-athletes who cannot return to play or return to learn in a timely fashion or athletes with a history of multiple concussions and/or post-concussion syndrome will be considered for referral to neurology for further testing, evaluation, and recommendations. These cases will be managed by the team physician, athletic trainer, and other departmental staff as needed.

### Reducing Exposure to Head Trauma

The sports medicine staff will continually monitor best practices and regularly educate coaches and student-athletes on strategies and practices intended to reduce the incidence of head injuries in all sports. Emphasis will be placed on using proper technique and equipment to reduce the likelihood of injury.