



SAINT JOSEPH'S UNIVERSITY

DEPARTMENT OF ATHLETICS – SPORTS MEDICINE

Concussion Management Plan (Revised 5/1/2019)

1. *Essential Elements:* Essential elements of the SJU Concussion Management Plan in accordance with NCAA guidelines include the following:
 - a. Medical personnel with training in the diagnosis, treatment, and initial management of acute concussion will be present and available at all NCAA varsity competitions in the following sports: basketball, field hockey, lacrosse, and soccer.
 - b. Any student-athlete with a suspected concussion shall be removed from play, including practice and/or competition.
 - c. Any student-athlete with a suspected concussion is to be evaluated by a Sports Medicine Department healthcare provider with experience in the diagnosis, treatment, and initial management of concussions. The evaluation shall include symptom and cognitive assessment, a physical and neurological exam, and a balance component.
 - d. Any student-athlete who is diagnosed with a concussion shall not return to activity for the remainder of that calendar day.
 - e. A team physician or designee of the team physician shall determine medical clearance, i.e., when the student-athletes may return to exercise and play.
 - f. All student-athletes will review the NCAA Concussion Fact Sheet (made available on the sjuhawks.com sports medicine website) and shall sign a written agreement as part of their pre-participation examination that states they accept the responsibility for reporting their injuries and illnesses to the institution's medical staff, including signs and symptoms of concussion, and that they have received educational material regarding concussions.
 - g. The Sports Medicine staff has unchallengeable authority regarding medical decisions involving student-athletes. Specific to the Concussion Management Plan, the Sports Medicine staff has the unchallengeable authority to remove a student-athlete from practice or competition, and team physicians (or their designees) have the unchallengeable authority to determine concussion management, return-to-play, and medical clearance. Sports Medicine staff members (including affiliates) must report any attempt by a coach or other non-Sports Medicine staff member to interfere with proper concussion protocol or other medical decisions involving student-athletes to the Director of Athletics.

2. *Concussion Overview*: A concussion is a functional injury to the brain, where normal brain physiology and function are disrupted by mechanical forces on the brain.
3. *Signs, Symptoms, Behaviors*: There are a wide variety of signs, symptoms, and behaviors consistent with a concussion:
 - a. Symptoms and signs
 - i. Headache
 - ii. Nausea
 - iii. Feeling in a fog
 - iv. Dizziness
 - v. Amnesia
 - vi. Confusion
 - vii. Balance problems
 - viii. Visual problems
 - ix. Fatigue
 - x. Sensitivity to light
 - xi. Sensitivity to noise
 - xii. Dazed
 - xiii. Numbness/tingling
 - b. Mood or behavior changes
 - i. Irritability
 - ii. Mood swings
 - iii. Sadness
 - iv. More emotional
 - c. Cognitive changes
 - i. Slowed reactions time
 - ii. Difficulty concentrating
 - iii. Difficulty with memory
 - iv. Mentally foggy
 - v. Repeats questions
 - vi. Answers questions slowly
 - d. Sleep disturbances
 - i. Drowsiness
 - ii. Insomnia
 - iii. Difficulty falling asleep
4. *Recovery*: The majority of student-athletes with a concussion, with appropriate and timely evaluation and management, will recover and return to their sports and academic life.
5. *Multiple Concussions*: If a student-athlete has previously had a concussion, they are at increased risk of having another concussion. There are additional clinical risk modifiers that affect the evaluation and management of the student-athlete with a concussion. The more concussions an individual has had, the longer it may take for that person's brain to recover; in addition, the effects of repetitive concussions may be cumulative.

6. *Possible Complications:* Possible complications and consequences of a concussion include but are not limited to:
 - a. Post-concussion syndrome
 - b. Sudden-impact syndrome
 - c. Neurological changes such as chronic traumatic encephalopathy
 - d. Death
 - e. Permanent disability
7. *Pre-Participation Management:* All student-athletes will have a pre-participation baseline concussion assessment prior to the commencement of athletic participation including:
 - a. Brain injury and concussion history, performed at yearly pre-participation physical examinations.
 - b. Symptom evaluation, performed at yearly pre-participation physical examinations and on biennial baseline neurocognitive testing.
 - c. Baseline neuropsychological testing using computer-based testing during their first year at SJU and every other year thereafter for contact and collision sports.
 - d. Baseline balance test using a computer based test of balance during their first year at SJU and every other year for contact and collision sports.
 - e. Pre-participation clearance as determined by team physician or team physician designated physician.
8. *Diagnosis and Management:*
 - a. A student-athlete should be removed from play and not return to exercise or play when they are having any signs, symptoms, or behaviors consistent with a concussion.
 - b. The team physician or his/her designee shall evaluate all student-athletes diagnosed with a concussion, or those with a suspected concussion.
 - c. Any athlete who has been diagnosed with a concussion will perform a symptom assessment check list at reasonable intervals until cleared by a team physician.
 - d. Any athlete who is suspected of having a concussion physical exam will also include an assessment for cervical spine trauma including tests of extremities for strength (myotomes) and sensory (dermatomes), cranial nerves, skull fractures, and intracranial bleeds.
 - e. Additional testing, for example neuroimaging or neurocognitive testing, will be at the direction of the medical staff.
 - f. Any student-athlete with any of the following will have appropriate emergency care and transportation to an Emergency Department:
 - i. Glasgow Coma Scale < 13
 - ii. Prolonged loss of consciousness
 - iii. Focal neurological deficit suggesting intracranial trauma
 - iv. Repetitive emesis
 - v. Persistently diminished/worsening mental status or other neurological signs/symptoms
 - vi. Spinal injury

- g. The student-athlete and another responsible adult (e.g., parent or roommate) will be counseled on post-concussion monitoring and care.
 - h. The student-athlete with a concussion shall continue to report to the Sports Medicine Staff on a regular basis, as instructed to do so at regular intervals, until they have fully return to play.
 - i. All student-athletes diagnosed with a concussion will be seen by a team physician for guidance with management and for final determination of return-to-play.
9. *Return-to-Play Protocol:* With the mounting evidence that sub-symptom exercise can be beneficial to recovery, during the early stages of recovery if an athlete can tolerate low level and monitored exercise, they should be encouraged to do so. Under the supervision of the team physician and/or the Sports Medicine staff some athletes may be prescribed some guided low-level, low risk cardiovascular activity, such as walking, biking and/or elliptical even if they aren't completely asymptomatic.

Once symptom free and once cleared by the team physician or medically qualified physician designee, the student-athlete may begin a gradual return to sports specific exercise and play as outlined below. Generally, after a 24-48 hour period during which the student-athlete is free of any concussion related symptoms or signs, exercise and sports related exertion are gradually and progressively re-introduced in stages. The student-athlete must complete each stage without symptoms and successfully to the satisfaction of the Sports Medicine Staff before full return-to-play without restrictions.

Stage	Requirement	Rehabilitation Stage	Functional Excursive at each Stage	Stage Objective
1		No activity	Complete physical and cognitive rest	Recovery
2		Light aerobic exercise		Increase heart rate
3	Completion of Stage 2	Sport-specific exercise (non-contact)	Non-contact simple movement patterns specific to sport	Add movement
4	Completion of Stage 3	Non-contact training drills	Progression to more complex training drills	Exercise, coordination, and cognitive load
5	Completion of Stage 4	Full-contact practice	Following medical clearance, participate in normal activities	Restore student-athlete's confidence and coaching staff assess functional skills
6	Completion of Stage 5	Return to play	Normal game play	

* McCrory, Paul, et al. "Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016." *Br J Sports Med* (2017): bjsports-2017.

10. *Return-to-Learn Protocol*: Return-to-learn guidelines assume that both physical and cognitive activities require brain energy utilization, and that after a sport-related concussion, brain energy may not be available for physical and cognitive exertion because of the brain energy crisis. Return-to-learn should be managed in a stepwise program that fits the needs of the individual. Concussion symptoms vary widely among student-athletes, and even within the same individual who may be suffering a repeat concussion. Because the return-to-play and return-to-learn protocols will often occur in parallel progression (although student-athletes may progress at a different rate under each protocol), it is critical that the multidisciplinary team described below is formed to navigate the dual obligations of academics and athletics.

- a. A student-athlete suffering a sports related concussion will not return to the classroom on the same day as the concussion.
- b. The student-athlete will be provided individualized academic/schedule accommodations based on symptoms and examination for up to two weeks, guided by the team physician, in conjunction with a multidisciplinary team. This team will help navigate the student-athlete through accommodations and especially in the case of complex and/or prolonged return-to-learn.
- c. The multidisciplinary team consists of:
 - i. Team physician
 - ii. Athletic trainer
 - iii. Academic counselors
 - iv. Course instructors
 - v. School psychologist/counselor, as indicated
 - vi. Office of student disability services representatives, as indicated
- d. Accommodations will be made in compliance with the Americans with Disabilities Act Amendments Act from 2008 (ADAAA).
- e. The student-athlete will be monitored at least weekly by the sports medicine staff, and at re-evaluated by the team physician at a time interval determined at visits, more frequently with any worsening.
- f. Campus resources, such as the Office of Student Disability Services, will be engaged when cases cannot be managed with academic and schedule accommodations, consistent with ADAAA.

11. *Reducing Exposure to Head Trauma*: SJU is committed to reducing exposure to head trauma in the following ways:

- a. Coaching and student-athlete education regarding safe play and proper technique
- b. Adherence to Interassociation Consensus: Independent Medical Care for College Student-Athletes Best Practices
- c. Taking a “safety-first” approach to sport

12. *Key Points for Student-Athletes*:

- a. Report signs and symptoms of a possible concussion to the appropriate sports medicine personnel; when in doubt ask the Sports Medicine Staff
- b. Don’t diagnosis yourself as having or not having a concussion

- c. Concussions are serious injuries, there is no such thing a “mild” concussion
- d. The Sports Medicine Staff is here to help you if you are injured or ill, including helping you to return to sports as quickly and safely as possible.
- e. The Sports Medicine Staff, not your coaches, are responsible for all medical decisions regarding any injury or illness, including head injuries.

Additional resources for student-athletes:

www.ncaa.org

- Fact sheets student-athletes and coaches on concussion. (This is handed out during your first team meeting of the school year).
- NCAA Sports Medicine Handbook

www.cdc.gov

- Head Up Concussion Tool Kit
- Information on traumatic brain injury