Concussion Policy

PURPOSE: The following policy was developed to provide general guidelines for the management of concussions in athletes. The Sentara Sports Medicine Department has created this action plan to educate athletic trainers, coaches, athletes, and parents on the proper management and referral process for individuals who may sustain a concussion during competition. The policy has been established based on the current literature from the National Athletic Trainer's Association (NATA), Korey Stringer Institute (KSI), and Virginia Law.

Definition:

A *concussion* is a traumatic brain injury and is defined by the 4th International Conference on Concussion in Sports (2012) as a complex pathophysiological process affecting the brain and induced by biomechanical forces. Several common features that incorporate clinical, pathologic, and biomechanical injury constructs that may be utilized in defining the nature of a concussive head injury include the following:

- Concussion may be caused either by a direct blow to the head, face, neck, or elsewhere on the body with an "impulsive" force transmitted to the head.
- Concussion typically results in the rapid onset of short-lived impairment of neurologic function that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of minutes, hours, or days.
- Concussion may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury with no abnormality seen on standard structural neuroimaging studies.
- Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course. It is important to note, however, that symptoms may be prolonged in some cases.

Prevalence:

Concussions are traumatic brain injuries (TBI) often resulting from a direct blow to the head. According to KSI,

> "It is estimated that approximately 1.6 to 3.8 million sports related traumatic brain injuries (TBI) occur every year, accounting for roughly 15% of all high school sport-related trauma reported. However, these numbers may be considered an underestimate due likely to failures in reporting of head injuries sustained or seeking medical attention. In fact, approximately 55% of pediatric athletes who sustained a concussion were not seen within a health care facility and approximately 42% of adults with a mild TBI (mTBI) did not seek medical care as well. The age group most vulnerable for sustaining a sports related concussion (SRC) is between ages 9-22 years old when team sports are most popular. Additionally, females have been diagnosed at higher rates of concussion susceptibility than males during both competition (1.46x) and practices (1.75x)."

In addition, according to a prospective 11-year study conducted to determine the incidence rate of concussions in boys and girls high school sports between 1997-2008, a total of 2,651 concussions were observed. The overall incidence rate of concussions sustained in high school athletics over an 11-year span was .24 per 1000 athletes. Football accounted for the highest incidence rate (0.60), followed by girls' soccer (0.35). When comparing boy' and girls' sports based on similarity (baseball/softball, basketball, soccer), females had nearly two times the concussion risk as males. Perhaps even more alarming, an approximate 15.5% annual increase in concussion rates was noted each year during the 11-year span. Therefore, it is of utmost importance that a certified athletic trainer be on-site for all athletic events, especially contact sports (football, soccer, basketball, hockey, etc.), to ensure the best quality of care for all student-athletes competing in high school sports, and to minimize the risk of athletes sustaining multiple concussions at one time.

More recently, a 20-year analysis of sustained concussions in high school females was conducted between 2000-2019. Females aged between 14 and 18 years old participating in high school sports were included in the study. During the 19-year span, the number of concussion cases drastically increased from 9,835 cases in 2000 to 31,751 cases in 2019, an increase of nearly 22,000 concussions. The top five sports most commonly associated with TBI's were soccer (20.6%), basketball (18.5%), cheerleading (10.4%), softball (10.1%), volleyball (6.5%). Therefore, it is essential that student-athletes, coaches, and parents are properly educated on concussion awareness, including signs/symptoms, treatment, and referral processes. Athletic trainers are the healthcare providers that can help bridge the gap in order to provide a safer, and more secure environment for all student-athletes competing in high school sports.

Overview of Concussion Documents:

As part of the Sentara Sports Medicine Concussion policy, there are four documents that will be utilized by the Athletic Training staff as part of the care plan for all student athletes who have sustained a concussion:

- Concussion Policy
    - General guidelines on the proper management of concussions
- Concussion Graduated Return to Play Protocol
    - To be utilized by the athletic trainer and physician as part of the athlete's RTP program
- Concussion Day After Protocol
    - As long as the athlete is asymptomatic and two separate SCAT5's have been completed within 24 hours, this document should be utilized by the athletic trainer to properly return the athlete to their respective sport(s)
- Concussion Clearance Checklist
    - Checklist for the athletic trainer to use throughout the duration of the concussion RTP to ensure all appropriate communications and tasks have been completed

**The following information is directed and supported by Virginia Law: 22.1-271.5*

Initial Evaluation/Day of Injury

Any athlete who is suspected of having sustained a concussion should be immediately removed from play by a coach, official, or licensed healthcare provider on staff (i.e. Athletic Trainer). Once the athlete has been removed from play, the student athlete will be evaluated for a concussion by the Athletic Trainer or other Licensed Healthcare Provider designated by the school. **If an athlete sustained a mechanism of injury, and displays one sign or symptom of a concussion, that athlete may NOT return to play or activity for the remainder of that day.**

If the team's athletic trainer is NOT present at the event, the coach must:

1. Notify the student-athlete's parents that the athlete is suspected of having a concussion
2. Notify the Athletic Trainer of the injury and ensure a follow up with that student-athlete once the athlete has returned to school that evening or the next school day

If the team's athletic trainer is present at the event, the athletic trainer must:

1. Complete a SCAT form
2. Notify the parents of the student-athlete that the athlete is suspected of having a concussion, discuss signs and symptoms that would indicate an emergency
3. Notify the coach that the student-athlete may not participate in any activity until the coach has **received a clearance notification from the athletic trainer**.
4. The athletic trainer must initiate the notification of the Concussion Team (Athletic Trainer → Athletic Director →Principal & School Nurse → School Psychologist, Head of Guidance/Guidance counselor/ Teachers) of the injury.

Day after Injury or Follow-up Evaluation

High School Athletes:

Any student-athlete who is suspected of having a concussion must follow up with the athletic trainer the following school day. During this follow-up evaluation, the athletic trainer must complete a second SCAT form for the athlete.

IF there have been *two* SCAT forms completed within the past 24 hours **AND** the student-athlete is *asymptomatic*, with no other signs of a concussion, the athlete can complete the "Day- After Injury Protocol".

- If the student athlete completes the "Day After Injury Protocol" without complication, the athlete can complete regular activity, while the athletic trainer continues to monitor them that day. If any signs/symptoms re-appear, the student-athlete must go through the Concussion Graduated Return to Play Protocol.
- If the student athlete cannot complete the "Day After Injury Protocol" due to the weekend, school vacation, or personal scheduling conflicts **or** does not report for a follow-up evaluation within 24 hours, the student-athlete must go through the Concussion Graduated Return to Play Protocol. At this time, the athletic trainer must notify the concussion notification team of the injury.

Baseline Testing

High School Athletes:

Each student-athlete that participates in high-risk sports (determined by athletics and medical staff) will complete a Baseline Concussion Test bi-annually. Baseline testing may include one or more of the following tests: SCAT5, Impact, BrainCheck, Concussion Vital Signs, or any other baseline test deemed appropriate by the Athletic Training Staff. This baseline test must be completed **PRIOR** to the team's first scrimmage. In the event that a student-athlete sustains a concussion, that student-athlete must be baseline tested the school year **immediately following** the date of concussion, regardless of whether the student-athlete was originally scheduled to take the test that year.

Referral to a Physician

Any student-athlete who has sustained a concussion and is completing the Concussion Graduated Return to Play protocol must be seen and cleared by a physician before progressing to stage 5 of the Graduated Return to Play Protocol and ultimately returning to sport. It is highly recommended that a concussed athlete be seen by a concussion specialist or physician trained in concussion management. The Athletic Trainer will send a referral form home with the athlete for the physician to fill out at their appointment and return to the athletic trainer. The athletic trainer will send the student-athlete to their physician appointment with a copy of the students Impact scores to be reviewed at time of evaluation with the provider.

** Clearance notes must come from a licensed Medical Doctor (MD); we will not accept clearance letters from a Nurse Practitioner (NP) nor Physician's Assistant (PAC)

Returning athlete to practice/competition

1. Once the student-athlete has completed the required Graduated Return to Play Protocol and obtained a valid clearance note, the Athletic Trainer will notify Concussion Team (Athletic Trainer → Athletic Director →Principal & School Nurse → School Psychologist, Head of Guidance/Guidance counselor/ Teachers) of the official clearance.
2. The Athletic Trainer must include all of the following documents in the Electronic Medical Record (EMR) in order to return any student-athlete, who has sustained a concussion, to full sport participation.
    a. SCAT day 1 and SCAT day 2
    b. Impact Scores
    c. Concussion team notification letter (screenshot) and Concussion team clearance notification letter (screenshot)
    d. Symptom Checklist
    e. Clearance Checklist
    f. MD note

** If in the case a student-athlete successfully completes the day after concussion protocol, SCAT 1 and SCAT 2 need to be uploaded in conjunction with the completed and signed day after injury protocol form.

*** Please note: this document has been established by the Sentara Sports Medicine Department based on the best available research and is to be used as a guide for concussion management. In addition, each school may choose to alter their return to play guidelines and protocol based on the recommendations from the physician overseeing the student-athlete's care. Therefore, this policy is to be used as a guideline for high schools to reference for determining appropriate concussion management.*

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