PHILADELPHIA PUBLIC LEAGUE CONCUSSION NEWSLETTER

One of the most common questions we, as Athletic Trainers, receive each season is with regard to concussion care. These questions arise with good reason as approximately 15% of the injuries evaluated at Penn that were sustained by Public League athletes since 2017 represent concussion injuries. Additionally, standards regarding concussion care have shifted somewhat dramatically over the past decade or two which significantly changes the landscape on management.

Initial Care

This involves an adjustment in the overall mindset and a more serious tone toward possible concussion injuries as they occur on the field.

- The law states that no athlete with a suspected concussion may return to play on the same day as the injury.
- Euphemistic language such as an athlete having their "bell rung" or "getting dinged" is no longer utilized.
- Any athlete that displays possible concussion symptoms reviewed during preseason training for coaches (e.g., headache, dizziness, disoriented, loss of memory, personality change, etc.) is deemed to have a possible concussion and must be removed from play for further evaluation and monitoring.
- The athletic trainers in the SDP will typically use the widely adopted SCAT 5 form to evaluate and document an athlete's present state. In the NFL, we commonly see players taken "into the tent" for further evaluation and this is where completion of this form or some similar tool is performed.
- Any athlete who does not pass all portions of the SCAT 5 evaluation are withheld from further play and will necessitate follow-up care.
- NOTE: An athlete may experience concussion symptoms without recalling a direct blow to the head. Recurrent lower level trauma, trauma to the jaw or simply a violent movement of the head (whiplash type injury) can also induce traumatic brain injury described as a concussion.

Follow-Up Care

Another aspect of concussion management that has changed is the required follow-up care that is now required which necessitates evaluation from a physician. In the past, athletic trainers frequently monitored athletes until symptoms resolved and then made decisions on returning to play. However, current standards dictate:

- Any athlete deemed to have sustained a possible concussion injury must be evaluated by a physician that is ideally trained in concussion care. This step involves either exclusion or confirmation of a concussion diagnosis.
    - If excluded, the athlete may return to play as per the physician's recommendations.

- If a concussion is either confirmed or suspected, then the athlete enters the mandatory return to play protocol before resuming practice or any competitive activities.

Fortunately, there are many outstanding concussion centers with physicians trained in concussion management and familiar with return to play guidelines within the city limits of Philadelphia. The University of Pennsylvania, CHOP, Temple University, the Rothman Institute, and St. Christopher's are all examples of some of the organizations that provide concussion care for athletes.

Unfortunately, this step can also be a source of confusion in which a couple of gray areas may arise.

- For example, parents and guardians are commonly not well versed on concussion policies leading them to not follow the protocol. We've encountered many situations in which a parent states "My son/daughter felt fine a day or two after the injury, so I did not take them to the doctor." While this may be fine in terms of daily activities, it can be a dangerous mindset for returning to sports. It is imperative that the athlete be evaluated as this step cannot be omitted prior to return to play. Completion of this step has both liability and, most importantly, safety considerations.
- The best defense is to ensure that parents are educated on concussion policies at the beginning of a season and reminded when the injury occurs. This often takes the form of a handout requiring signature from all parents of athletes that specifically outlines the policy.

The other area of confusion associated with this step involves whether the evaluating physician is familiar or trained in concussion care for athletes. There are many emergency rooms, urgent cares, and community health centers that do an outstanding job at providing vital healthcare services to our athletes and their families in the city, particularly in underserved regions. The only concern is that their focus may be different than the established requirements for athletes.

- Adopt the mindset that any clearance received from a concussion injury only clears the athlete to enter the gradual return to play protocol, not directly to competition.
  - A red flag is any time an athlete returns with a note stating that they are cleared to play on a specific date or in a specific game.
  - Only completion of the return to play protocol can determine the actual date of return and is not related to the subjective judgement of any clinician - physician or otherwise.
  - This can be upsetting for any athlete or parent who believes that they are cleared for the next game after receiving a clearance note.
  - State laws in Pennsylvania are clear. As athletic trainers, coaches, and athletic directors, we are expected to know better and not permit an athlete to return to competition without completing the gradual return to play protocol regardless of any date received from a clinician or physician.

This has probably been the greatest source of confusion I have noted in caring for athletes in the city. Again, education of coaches, parents and athletes that begins in the preseason is paramount to avoiding these potentially sensitive situations.

Return to Play

So…what are the steps outlined in the gradual return to play policy? Below is a brief outline:

1. **Symptom limited activity –** this involves the absence of any concussion symptoms (headache, dizziness, etc.) for at least 24 hours with normal daily activity

2. **Light aerobic exercise** – Walking or stationary cycling at a slow to medium pace. No resistance training
3. **Sport specific exercise** – Running and faster paced activities that incorporates sport specific movements. No head impact
4. **Non-contact training drills –** Harder training drills, resistance training. May participate in non-contact practice activities
5. **Full-contact practice –** normal practice without restrictions. Cannot just be a walkthrough and must incorporate normal practice drills
6. **Return to sport** – Normal competitive game play

It is important to understand that middle and high school athletes represent the highest risk groups for sustaining concussion injuries as well as severe injury following concussions. As such, there are specific guidelines established for these populations dictating that each of the above steps must be separated by a day and cannot be combined. If symptoms recur at any point during the protocol, then the student-athlete is returned to the previous level at which they were symptom-free following a 24 hour period of rest.

Why is this so important?

One of the overall goals of concussion management is to reduce the possibility of what is known as "second impact syndrome (SIS)." SIS occurs when an athlete sustains a subsequent concussive force before having fully recovered from a previous concussion. Often the severity of injury is magnified exponentially as compared to an initial injury and is associated with a significantly higher mortality rate. The data is clear that the absence of symptoms does not necessarily correlate with full recovery of the brain following initial injury and that the risk of SIS is greatest within 10 days of the initial injury. We remain in an age in which objective data to diagnose and monitor concussion recovery is very limited. There is no x-ray, MRI, CT scan, or blood test that can reliably provide these answers at the moment. Hence, we are forced to rely on subjective measures influenced by the proliferation of research over the past 20 years. Education on concussion management is our best resource to reducing the inevitable confusion and gray areas that exist. This education begins with our coaches and must be passed on to our athletes and families as much as possible. If any confusion or gray area arises, as it often may, always remember that your athletic trainer is available for guidance and clarification. As always, there is no more primary concern than the safety of our student athletes.