Concussion Information for students and parents

What is concussion?

A concussion is the most common type of brain injury and is generally “mild” in nature. When a concussion occurs, the brain works more slowly and perhaps not as effectively. Headache and dizziness are often symptoms and students will complain of “fogginess” and “thinking more slowly”. It can affect one’s ability to perform daily activities efficiently, can impair reaction time, balance, sleep, mood, and classroom performance. Below is a more complete list of concussion symptoms. The symptoms may be noticed right away or can show up hours or several days after the injury. Symptoms are usually maximal at 48-72 hours post injury (a student may develop more symptoms or continue to worsen over the first 2-3 days after the injury). Proper care and follow up can limit complications and usually shortens recovery time. It may be possible, particularly following repeated concussions or sub-concussive blows, for a person to suffer latent (i.e., late onset) injury, such as chronic traumatic encephalopathy (“CTE”), for which cause, diagnosis, and treatment are not yet well understood.

Symptoms of concussion

- Headache
- Dizziness
- Slow thinking
- Ringing in the ears
- Light and noise sensitivity
- Nausea
- Vision disturbance
- Loss of balance
- Memory difficulty, especially short term
- Difficulty concentrating
- Fatigue
- Irritability
- Sleep disturbance
- Nervousness/anxiety/depression/mood lability/tearfulness
How is concussion recognized/reported?

A concussion is an injury to the brain; think of it as a bruise. Although most concussions occur on the sports field, they can also occur off the field and do not require a blow to the head. Kent School Athletic Trainers, Health Center Staff, and Coaches are trained to recognize concussion symptoms, evaluate the student, and remove them from play. It is imperative that students who suspect they may be suffering from concussion report it to the Health Center staff, Athletic Trainers, Coaches, or other adults immediately. Education of students has increased concussion recognition and reporting thus improving time to care and recovery and decreasing risk of further or worsening injury. ImPACT testing is also used to evaluate concussion. See below for more information on ImPACT testing. Rarely is neuroimaging (MRI or CT scan) indicated and is not done on a routine basis for straightforward concussion. A person may experience a concussion without losing consciousness or awareness of the person’s surroundings.

Treatment of a Concussion

Following a concussion, the brain needs time to rest and heal. This may include physical rest, cognitive rest, or both. Physical activity, “screen time” (computer, cell phone, movies, video games), noisy environments, and sometimes classes are discouraged initially as these can often increase student’s symptoms. Concussion specialists are encouraging patients to gradually resume normal activities as long as symptoms don’t worsen. As a result, limited class time and school work are slowly reintroduced as symptoms improve. There is growing evidence that extended rest times do not hasten recovery and may in fact slow recovery from concussion. For some specific symptoms, a specialized form of physical therapy may be recommended to improve balance and reduce visual disturbances. Depending on the severity of the concussion and the student’s ability and willingness to follow instruction (limited screen time, no physical activity like playing around with friends, etc), an injured student might remain in the Health Center for better monitoring, be sent home for better rest, or be referred to the hospital or other specialist medical provider for further diagnostic testing and treatment. If a student remains at school, his/her condition will be regularly monitored by the school physician and Health Center staff.

Typical concussion recovery time is about 2 weeks. There are some students who recover faster and some more slowly. Some risk factors for prolonged symptoms and thus slower recovery include but are not limited to:

- Previous, complicated concussion
- History of migraine and other headache syndromes
- Mood disorders like depression and anxiety
- Preexisting sleep issues (but not simple lack of sleep)
- Learning differences/disabilities
Prevention of Concussion

Helmets, face shields, mouth guards and other protective equipment decrease but do not eliminate the risk of concussion. Students are required to wear the appropriate sport specific protective gear during practices and games. Occasionally, students will get together informally to practice a sport. Students are encouraged to use appropriate protective gear during “pick-up” games and informal practice time to avoid unnecessary concussion and injury risk. Purposeful or flagrant head contact is not safe and is not permitted in any Kent School sport or activity.

*At Kent School, we understand the competitive nature of sports, but health and safety are our top priority. If there is any suspicion of head injury in your child, your student-athlete will be removed from competition until he/she can be more appropriately evaluated. If an evaluation is inconclusive or suspicion of concussion remains, your son/daughter will continue to be “side-lined” for the remainder of the practice or game pending a more thorough and appropriate evaluation.

Complications of Concussion

Post-concussion syndrome (PCS)
PCS is a collection of symptoms that can last for weeks to months after the concussion. The symptoms of PCS include:

- headache
- dizziness
- feeling sick (nausea)
- sensitivity to bright lights
- sensitivity to loud noises
- ringing in the ears
- disturbed vision
- fatigue
- depression, anxiety, and/or irritability
- lack of energy and interest in the world around you
- having problems sleeping
- changes in appetite
- decreased concentration
- forgetfulness
- difficulty remembering things or learning new information
- difficulties with reasoning (working out problems)

There is no specific treatment for the symptoms of PCS, though many medications used to treat migraine have also proved effective in treating the headaches caused by PCS. Antidepressants and psychotherapy may help control the psychological symptoms, such as depression and anxiety. Most cases of PCS will resolve within three to six months. Students
with emerging PCS will be referred to a neurologist or concussion specialist for follow up care and treatment.

**Second Impact Syndrome**
Following a concussion, the brain needs time to heal. A person is more likely to have a repeat concussion if he or she returns to play and activities before all the symptoms resolve. This is referred to as *Second Impact Syndrome*. The symptoms of a second concussion can be greater and last longer than the initial head injury. Kent School follows a gradually increasing intensity Return to Play Protocol consistent with national best practices. A student must be symptom free, fully academically engaged, and have an ImPACT test that has returned to baseline prior to starting the Return to Play Protocol.

**Latent Concussion Effects**
It may be possible, particularly following repeated concussions or sub-concussive blows, for a person to suffer latent (i.e., late onset) injury, such as chronic traumatic encephalopathy (“CTE”), for which cause, diagnosis, and treatment are not yet well understood.

**ImPACT Testing**
Kent School utilizes an innovative concussion management program for our student-athletes. The program is called ImPACT (Immediate Post Concussion Assessment and Cognitive Testing). Founded by the University of Pittsburgh Medical Center’s Sports Concussion Program, it is fast becoming an important tool in the recognition and management of head injury. All new students are required to take a baseline test when they arrive to Kent. Baseline testing is redone every 2 years while a student at Kent. The baseline test is used as a comparison tool if a student suffers a concussion. If the student is believed to have suffered a concussion, the ImPACT test is taken and the data compared to the baseline test. This information is then used as a tool to assist the Athletic Trainer, school physician and Kent School Health Department in determining the extent of the injury, monitoring recovery, and in making decisions for safe return to activity and play. All students must have a return of their ImPACT test to baseline prior to being allowed to start the Return to Play Protocol.

In the fall, all new students and returning 5th formers take a baseline ImPACT test. Students watch an informational video about the signs and symptoms of concussion before taking their baseline test. The video is sponsored by Sports Safety International, an organization that promotes safe participation in sport and physical activity through education. Additional information on the video and concussions can be found at [www.sportssafetyinternational.org](http://www.sportssafetyinternational.org).

The ImPACT test is a non-invasive test set up in “video-game” type format and takes about 20 minutes to complete. It is essentially a preseason physical of the brain. It can provide information on memory, reaction time, speed, and concentration. For example, in one part of the exam, a dozen common words appear one at a time on the screen for about one second each. The student-athlete is then later asked what words were displayed. This is a task of memory and is independent of IQ. Testing conditions can play an important role in the results. Fatigue, distraction, lack of effort, sleep deprivation, etc, can negatively affect ImPACT results. Students
are instructed to take their ImPACT test when they have slept well and are not academically or socially stressed, and the test is administered in a quiet, controlled environment.

Additional Concussion Information

This Concussion Information for students and parents is presented for informational purposes only and should not be received as medical advice; although reasonable efforts have been made to present accurate information, the information presented is necessarily incomplete, and the science of concussion continues to evolve. It is your responsibility to seek sufficient information to make informed decisions about participation in any sports activity. To learn more about concussions, please consult your physician.

For more information, you may also go to: www.cdc.gov/headsup/parents/

This site offers a free online interactive course on concussions for coaches, parents and students. Please also feel free to contact Dr. Lefebvre, the School’s physician, or Dan Traub, the School’s Head Athletic Trainer with questions or for more information about concussion and the School’s approach and treatment of concussion.