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**KANSAS STATE HIGH SCHOOL ACTIVITIES ASSOCIATION
RECOMMENDATIONS FOR COMPLIANCE WITH THE KANSAS SCHOOL SPORTS HEAD
INJURY PREVENTION ACT AND IMPLEMENTATION OF THE NATIONAL FEDERATION
SPORTS PLAYING RULES RELATED TO CONCUSSIONS**

The following language appears in all National Federation sports' rules books:

"Any athlete who exhibits signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion, or balance problems) shall be immediately removed from the contest and shall not return to play until cleared by an appropriate health care professional."

The Kansas Legislature has enacted the School Sports Head Injury Prevention Act (hereinafter the "Kansas Act") effective July 1, 2011:

New Sec. 17. (a) This section shall be known and may be cited as the school sports head injury prevention act.

(b) As used in this section:

(1) "School" means any public or accredited private high school, middle school or junior high school.

(2) "Health care provider" means a person licensed by the state board of healing arts to practice medicine and surgery.

(c) The state board of education, in cooperation with the Kansas state high school activities association, shall compile information on the nature and risk of concussion and head injury including the dangers and risks associated with the continuation of playing or practicing after a person suffers a concussion or head injury. Such information shall be provided to school districts for distribution to coaches, school athletes and the parents or guardians of school athletes.

(d) A school athlete may not participate in any sport competition or practice session unless such athlete and the athlete's parent or guardian have signed, and returned to the school, a concussion and head injury information release form. A release form shall be signed and returned each school year that a student athlete participates in sport competitions or practice sessions.

(e) If a school athlete suffers, or is suspected of having suffered, concussion or head injury during a sport competition or practice session, such school athlete immediately shall be removed from the sport competition or practice session.

(f) Any school athlete who has been removed from a sport competition or practice session shall not return to competition or practice until the athlete is evaluated by a health care provider and the health care provider provides such athlete a written clearance to return to play or practice. If the healthcare provider who provides the clearance to return to play or practice is not an employee of the school district, such health care provider shall not be liable for civil damages resulting from any act or omission in the rendering of such care, other than acts or omissions constituting gross negligence or willful or wanton misconduct.

(g) This section shall take effect on and after July 1, 2011.

The KSHSAA offers the following guidelines and recommendations for compliance with the Kansas Act and for implementation of the NFHS playing rule related to concussions:

1. If a student suffers, or is suspected of having suffered a concussion or head injury during a sport competition or practice session, the student: (1) must be immediately removed from the contest or practice and (2) may not again participate in practice or competition until a health care provider has evaluated the student and provided a written clearance for the student to return to practice and competition. The National Federation and the KSHSAA recommend that the student **should not** be cleared for practice or competition the same day the concussion consistent sign, symptom or behavior was observed.
2. *What are the "signs, symptoms, or behaviors consistent with a concussion"?* The National Federation rule lists some of the signs, symptoms and behaviors consistent with a concussion. The U.S. Department of Human Services, Centers for Disease Control and Prevention has published the following lists of signs, symptoms and behaviors that are consistent with a concussion:

SIGNS OBSERVED BY OTHERS	SYMPTOMS REPORTED BY ATHLETE
<ul style="list-style-type: none"> • Appears dazed or stunned • Is confused about assignment • Forgets plays • Is unsure of game, score, or opponent • Moves clumsily • Answers questions slowly • Loses consciousness • Shows behavior or personality changes • Cannot recall events prior to hit • Cannot recall events after hit 	<ul style="list-style-type: none"> • Headache • Nausea • Balance problems or dizziness • Double or fuzzy vision • Sensitivity to light or noise • Feeling sluggish • Feeling foggy or groggy • Concentration or memory problems • Confusion

These lists may not be exhaustive

3. What is a "Health Care Provider"? The Kansas Sports Head Injury Prevention Act defines a health care provider to be "a person licensed by the state board of healing arts to practice medicine and surgery." The KSHSAA understands this means a Medical Doctor (MD) or a Doctor of Osteopathic Medicine (DO).

4. Return to Play or Practice Clearance Requirements:
 - A. The clearance must be in writing and signed by a health care provider.
 - B. The National Federation and the KSHSAA recommend the clearance should not be issued on the same day the athlete was removed from play.
 - C. The National Federation and the KSHSAA recommend that a student who has been removed from a practice or competition because the student suffered, or was suspected of suffering, a concussion or head injury **should complete a graduated return to play protocol following medical clearance before returning to unrestricted practice or competition.** The National Federation has included the following graduated protocol in its Suggested Guidelines for Management of Concussion in Sports. In most cases, the athlete will progress one step each day. The return to activity program schedule **may** proceed as below **following medical clearance:**
 - Step 1:* Light aerobic exercise- 5 to 10 minutes on an exercise bike or light jog; no weight lifting, resistance training, or any other exercises.
 - Step 2:* Moderate aerobic exercise- 15 to 20 minutes of running at moderate intensity in the gym or on the field without a helmet or other equipment.
 - Step 3:* Non-contact training drills in full uniform. May begin weight lifting, resistance training, and other exercises.
 - Step 4:* Full contact practice or training.
 - Step 5:* Full game play.

If symptoms of a concussion re-occur, or if concussion signs and/or behaviors are observed at any time during the return to activity program, the athlete must discontinue all activity and be re-evaluated by their health care provider.

This is simply a suggested protocol. The appropriate health care provider who issues the written clearance may wish to establish a different graduated protocol.

5. Parents and students **ARE REQUIRED** to complete a Concussion & Head Injury Information Release Form and turn it into their school prior to the student participating in any athletic or spirit practice or contest each school year. Schools are required to have such form on file before a student may participate in a practice or competition.



SUGGESTED GUIDELINES FOR MANAGEMENT OF CONCUSSION IN SPORTS

National Federation of State High School Associations (NFHS)
Sports Medicine Advisory Committee (SMAC)

Introduction

A concussion is type of traumatic brain injury that interferes with normal function of the brain. It occurs when the brain is rocked back and forth or twisted inside the skull as a result of a blow to the head or body. What may appear to be only a mild jolt or blow to the head or body can result in a concussion.

The understanding of sports-related concussion has evolved dramatically in recent years. We now know that young athletes are particularly vulnerable to the effects of a concussion. Once considered little more than a "ding" on the head, it is now understood that a concussion has the potential to result in short or long-term changes in brain function, or in some cases, death.

What is a concussion?

You've probably heard the terms "ding" and "bell-ringer." These terms were once used to refer to minor head injuries and thought to be a normal part of sports. There is no such thing as a minor brain injury. Any suspected concussion must be taken seriously. A concussion is caused by a bump, blow, or jolt to the head or body. Basically, any force that is transmitted to the head causes the brain to literally bounce around or twist within the skull, potentially resulting in a concussion.

It used to be believed that a player had to lose consciousness or be "knocked-out" to have a concussion. This is not true, as the vast majority of concussions do not involve a loss of consciousness. In fact, less than 10% of players actually lose consciousness with a concussion.

What exactly happens to the brain during a concussion is not entirely understood. It appears to be a very complex injury affecting both the structure and function of the brain. The sudden movement of the brain causes stretching and tearing of brain cells, damaging the cells and creating chemical changes in the brain. Once this injury occurs, the brain is vulnerable to further injury and very sensitive to any increased stress until it fully recovers.

Common sports injuries such as torn ligaments and broken bones are structural injuries that can be seen on MRIs or x-rays, or detected during an examination. A concussion, however, is primarily an injury that interferes with how the brain works. While there is damage to brain cells, the damage is at a microscopic level and cannot be seen on MRI or CT scans. Therefore, the brain looks normal on these tests, even though it has been seriously injured.

Recognition and Management

If an athlete exhibits any signs, symptoms, or behaviors that make you suspicious that he or she may have had a concussion, that athlete must be removed from all physical activity, including sports and recreation. Continuing to participate in physical activity after a concussion can lead to worsening concussion symptoms, increased risk for further injury, and even death.

SYMPTOMS REPORTED BY ATHLETE

- Headache
- Nausea
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Feeling sluggish
- Feeling foggy or groggy
- Concentration or memory problems
- Confusion

Parents and coaches are not expected to be able to “diagnose” a concussion. That is the role of an appropriate health-care professional. However, you must be aware of the signs, symptoms and behaviors of a possible concussion, and if you suspect that an athlete may have a concussion, then he or she must be immediately removed from all physical activity.

SIGNS OBSERVED BY PARENTS, FRIENDS, TEACHERS OR COACHES

- Appears dazed or stunned
- Is confused about what to do
- Forgets plays
- Is unsure of game, score, or opponent
- Moves clumsily
- Answers questions slowly
- Loses consciousness
- Shows behavior or personality changes
- Can't recall events prior to hit
- Can't recall events after hit

When in doubt, sit them out!

When you suspect that a player has a concussion, follow the "Heads Up" 4-step Action Plan.

1. Remove the athlete from play.
2. Ensure that the athlete is evaluated by an appropriate health-care professional.
3. Inform the athlete's parents or guardians about the possible concussion and give them information on concussion.
4. Keep the athlete out of play the day of the injury and until an appropriate health-care professional says he or she is symptom-free and gives the okay to return to activity.

The signs, symptoms, and behaviors of a concussion are not always apparent immediately after a bump, blow, or jolt to the head or body and may develop over a few hours. An athlete should be observed following a suspected concussion and should never be left alone.

Athletes must know that they should never try to "tough out" a suspected concussion. Teammates, parents and coaches should never encourage an athlete to "play through" the symptoms of a concussion. In addition, there should never be an attribution of bravery to athletes who do play despite having concussion signs or symptoms. The risks of such behavior must be emphasized to all members of the team, as well as coaches and parents.

If an athlete returns to activity before being fully healed from an initial concussion, the athlete is at risk for a repeat concussion. A repeat concussion that occurs before the brain has a chance to recover from the first can slow recovery or increase the chance for long-term problems. In rare cases, a repeat concussion can result in severe swelling and bleeding in the brain that can be fatal.

Cognitive Rest

A concussion can interfere with school, work, sleep and social interactions. Many athletes who have a concussion will have difficulty in school with short- and long-term memory, concentration and organization. These problems typically last no longer than a week or two, but for some these difficulties may last for months. It is best to lessen the student's class load early on after the injury. Most students with concussion recover fully. However, returning to sports and other regular activities too quickly can prolong the recovery.

The first step in recovering from a concussion is rest. Rest is essential to help the brain heal. Students with a concussion need rest from physical and mental activities that require concentration and attention as these activities may worsen symptoms and delay recovery. Exposure to loud noises, bright lights, computers, video games, television and phones (including texting) all may worsen the symptoms of concussion. As the symptoms lessen, increased use of computers, phone, video games, etc., may be allowed.

Return to Play

After suffering a concussion, **no athlete should return to play or practice on that same day.** Previously, athletes were allowed to return to play if their symptoms resolved within 15 minutes of the injury. Newer studies have shown us that the young brain does not recover quickly enough for an athlete to return to activity in such a short time.

An athlete should never be allowed to resume physical activity following a concussion until he or she is symptom free and given the approval to resume physical activity by an appropriate health-care professional.

Once an athlete no longer has signs, symptoms, or behaviors of a concussion **and is cleared to return to activity by a health-care professional**, he or she should proceed in a step-wise fashion to allow the brain to re-adjust to exercise. In most cases, the athlete will progress one step each day. The return to activity program schedule **may proceed as below following medical clearance:**

Progressive Physical Activity Program

- Step 1:* Light aerobic exercise- 5 to 10 minutes on an exercise bike or light jog; no weight lifting, resistance training, or any other exercises.
- Step 2:* Moderate aerobic exercise- 15 to 20 minutes of running at moderate intensity in the gym or on the field without a helmet or other equipment.
- Step 3:* Non-contact training drills in full uniform. May begin weight lifting, resistance training, and other exercises.
- Step 4:* Full contact practice or training.
- Step 5:* Full game play.

If symptoms of a concussion re-occur, or if concussion signs and/or behaviors are observed at any time during the return to activity program, the athlete must discontinue all activity and be re-evaluated by their health care provider.

Concussion in the Classroom

Following a concussion, many athletes will have difficulty in school. These problems may last from days to months and often involve difficulties with short- and long-term memory, concentration, and organization. In many cases, it is best to lessen the student's class load early on after the injury. This may include staying home from school for a few days, followed by a lightened schedule for a few days, or longer, if necessary. Decreasing the stress on the brain early on after a concussion may lessen symptoms and shorten the recovery time.

What to do in an Emergency

Although rare, there are some situations where you will need to call 911 and activate the Emergency Medical System (EMS). The following circumstances are medical emergencies:

1. Any time an athlete has a loss of consciousness of any duration. While loss of consciousness is not required for a concussion to occur, it may indicate more serious brain injury.
2. If an athlete exhibits any of the following: decreasing level of consciousness, looks very drowsy or cannot be awakened, if there is difficulty getting his or her attention, irregularity in breathing, severe or worsening headaches, persistent vomiting, or any seizures.

Suggested Concussion Management

1. No athlete should return to play (RTP) or practice on the same day of a concussion.
2. Any athlete suspected of having a concussion should be evaluated by an appropriate health-care professional that day.
3. Any athlete with a concussion should be medically cleared by an appropriate health-care professional prior to resuming participation in any practice or competition.
4. After medical clearance, RTP should follow a step-wise protocol with provisions for delayed RTP based upon return of any signs or symptoms.

References

Guskiewicz KM, et al. National Athletic Trainers' Association position statement: management of sport-related concussion. *Journal of Athletic Training* 2004; 39:280-297.

McCrary P, et al. Consensus statement on concussion in sport: the 3rd International Conference on Concussion in Sport held in Zurich, November 2008. *Journal of Athletic Training* 2009; 44:434-48.

Additional Resources

Heads Up: Concussion in High School Sports

http://www.cdc.gov/concussion/headsup/high_school.html

Concussion in Sports- What you need to know.

<http://www.nfhslearn.com/electiveDetail.aspx?courseID=15000>

NFHS Sports Medicine Handbook, 4th Ed, 2011.

Revised January 2011

**KSHSAA RECOMMENDED CONCUSSION & HEAD INJURY INFORMATION RELEASE FORM
2011-2012**

This form must be signed by all student athletes and parent/guardians before the student participates in any athletic or spirit practice or contest each school year.

A concussion is a brain injury and all brain injuries are serious. They are caused by a bump, blow, or jolt to the head, or by a blow to another part of the body with the force transmitted to the head. They can range from mild to severe and can disrupt the way the brain normally works. Even though most concussions are mild, **all concussions are potentially serious and may result in complications including prolonged brain damage and death if not recognized and managed properly.** In other words, even a “ding” or a bump on the head can be serious. You can’t see a concussion and most sports concussions occur without loss of consciousness. Signs and symptoms of concussion may show up right after the injury or can take hours or days to fully appear. If your child reports any symptoms of concussion, or if you notice the symptoms or signs of concussion yourself, seek medical attention right away.

Symptoms may include one or more of the following:

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| <ul style="list-style-type: none"> • Headaches • “Pressure in head” • Nausea or vomiting • Neck pain • Balance problems or dizziness • Blurred, double, or fuzzy vision • Sensitivity to light or noise • Feeling sluggish or slowed down • Feeling foggy or groggy • Drowsiness • Change in sleep patterns | <ul style="list-style-type: none"> • Amnesia • “Don’t feel right” • Fatigue or low energy • Sadness • Nervousness or anxiety • Irritability • More emotional • Confusion • Concentration or memory problems (forgetting game plays) • Repeating the same question/comment |
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Signs observed by teammates, parents, and coaches include:

- Appears dazed
- Vacant facial expression
- Confused about assignment
- Forgets plays
- Is unsure of game, score, or opponent
- Moves clumsily or displays incoordination
- Answers questions slowly
- Slurred speech
- Shows behavior or personality changes
- Can’t recall events prior to hit
- Can’t recall events after hit
- Seizures or convulsions
- Any change in typical behavior or personality
- Loses consciousness

What can happen if my child keeps on playing with a concussion or returns too soon?

Athletes with the signs and symptoms of concussion should be removed from play immediately. Continuing to play with the signs and symptoms of a concussion leaves the young athlete especially vulnerable to greater injury. There is an increased risk of significant damage from a concussion for a period of time after that concussion occurs, particularly if the athlete suffers another concussion before completely recovering from the first one (second impact syndrome). This can lead to prolonged recovery, or even to severe brain swelling with devastating and even fatal consequences. It is well known that adolescent or teenage athletes will often under report symptoms of injuries. And concussions are no different. As a result, education of administrators, coaches, parents and students is the key for student-athlete's safety.

If you think your child has suffered a concussion

Any athlete even suspected of suffering a concussion should be removed from the game or practice immediately. No athlete may return to activity after an apparent head injury or concussion, regardless of how mild it seems or how quickly symptoms clear, without written medical clearance from a Medical Doctor (MD) or Doctor of Osteopathic Medicine (DO). Close observation of the athlete should continue for several hours. You should also inform your child's coach if you think that your child may have a concussion Remember it is better to miss one game than miss the whole season. **When in doubt, the athlete sits out!**

Return to Practice and Competition

The Kansas School Sports Head Injury Prevention Act provides that if an athlete suffers, or is suspected of having suffered, a concussion or head injury during a competition or practice, the athlete must be immediately removed from the competition or practice and cannot return to practice or competition until a Health Care Professional has evaluated the athlete and provided a written authorization to return to practice and competition. The KSHSAA recommends that an athlete not return to practice or competition the same day the athlete suffers or is suspected of suffering a concussion. The KSHSAA also recommends that an athlete's return to practice and competition should follow a graduated protocol under the supervision of the health care provider (MD or DO).

For current and up-to-date information on concussions you can go to:

<http://www.cdc.gov/concussion/HeadsUp/youth.html>

For concussion information and educational resources collected by the KSHSAA, go to:

<http://www.kshsaa.org/Public/General/ConcussionGuidelines.cfm>

Student-athlete Name Printed Student-athlete Signature Date

Parent or Legal Guardian Printed Parent or Legal Guardian Signature Date