

# *Concussion Management Plan*

For:

School District of Spring Valley

S1450 County Road CC

Spring Valley, WI 54767

Date:

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Prepared by:

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Approved by:

School District of Spring Valley Sports Concussion Management Plan  
Draft#1

1. Overview

1.1. In response to the growing concern over concussion in athletics there is a need for High Schools to develop and utilize a “Concussion Management Plan”. While regional limitations in the availability of specifically trained school and medical personnel are acknowledged, the following document serves as a standard for concussion management.

1.2. The following components will be outlined as part of a comprehensive concussion management plan:

1.2.1. Concussion Overview (section 2)

1.2.2. Concussion Education for Student-Athletes and Parent(s)/Guardian(s)(section 3)

1.2.3. Concussion Education for Coaches (section 4)

1.2.4. Pre-season concussion assessment (section 5)

1.2.5. Concussion action plan (section 6)

1.2.6. Appendix A: Statement Acknowledging Receipt of Concussion Education

1.2.7. Appendix B: Post Concussion Instructions

1.2.8. Appendix C: Return to School Recommendations

1.2.9. Appendix D: Return to Play Protocol

1.2.10. Appendix E: Memo- Implementation of NFHS Playing Rules Changes Related to Concussion and Concussed Athletes

1.2.11 Appendix F: Treatment Algorithm for Sports Related Concussion

2. What is a Concussion?

2.1. Concussion, or mild traumatic brain injury (mTBI), in accordance with the 3<sup>rd</sup> International Conference on Concussion in Sport (2008), is defined as a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces. Common elements include but are not limited to:

Confusion	Disequilibrium	Post-traumatic Amnesia (PTA)
Feeling ‘in a fog’, ‘zoned out’	Retrograde Amnesia (RGA)	Vacant stare (Glassy eyed)
Disorientation	Emotional lability	Delayed verbal and motor responses
Dizziness	Inability to focus	Slurred/incoherent speech
Headache	Excessive Drowsiness	Nausea/Vomiting
Loss of consciousness (LOC)		
Visual Disturbances including light sensitivity, blurry vision, or double vision		

### 3. Concussion Education for Student Athletes and Parent(s)/Guardian(s)

3.1. At the beginning of individual sport seasons, student-athletes shall be presented with a discussion about concussions and given a copy of the CDC's "Heads Up: Concussion in High School Sports – A fact sheet for Athletes".

3.1.1. This information will be presented by the Athletic Director in cooperation and consultation with the School Nurse and School Medical Director. Additional, local medical resources may also participate as needed.

3.2. At the beginning of individual sport seasons, parent/guardian(s) shall be presented with a copy of the CDC's "Heads Up: Concussion in High School Sports – A Fact sheet for parents"

3.3. These materials are available free of charge from the CDC. To order or download go to the CDC concussion webpage or use the following link: <http://www.cdc.gov/concussion>

3.4. All student-athletes and their parents/guardians will sign a statement in which the student-athlete accepts the responsibility for reporting their injuries and illnesses to the coaching/athletic training staff, parents, or other health care personnel including signs and symptoms of concussion. This statement will also acknowledge having received the above-mentioned educational handouts. See Appendix A

3.5. All student-athletes shall be required to participate in the above education prior to their participation in any sport at School District of Spring Valley.

### 4. Concussion Education for Coaches

4.1. It is required that each year that the schools administrative staff, coaches, Licensed Athletic Trainers, and the schools nurse shall review the concussion management plan and a copy of the CDC's "Heads Up: Concussion in High School Sports – A Guide for Coaches"  
<http://www.cdc.gov/concussion>

4.2. All Fall season coaches, Licensed Athletic Trainers, other medical staff, administrative personnel and school nurses shall complete a course dealing with concussion, its signs, symptoms and management. This course shall be completed prior to August 1<sup>st</sup>. After August 1<sup>st</sup> the course shall be completed prior to working with student-athletes. The CDC, in partnership with the National Federation of State High School Associations, has developed a free web based course, "Concussion in Sports: What you need to know", to be used for this purpose.

4.2.1. Repetition of the course may be required in subsequent seasons.

4.2.2. The "Concussion in Sports: What You Need to Know" on-line course is available free of charge after registering at <http://www.nfhslearn.com>

### 5. Pre-season concussion assessment

5.1. Optimally a concussion history should be included as part of all of a student/athlete's pre-participation physical health examinations with their health care professional.

5.2. It is recommended that every two years, student-athletes complete a baseline assessment prior to the beginning of the school year or their individual sports seasons as appropriate.

5.2.2. Neurocognitive Testing. Pre-season neurocognitive testing of all athletes is required and will be accomplished through a computerized system. School District of Spring Valley has chosen to partner with ImPACT applications for this purpose.

5.2.2.1. The ImPACT program is designed to measure specific brain functions that may be altered following a concussion. The program is designed in such a way as to allow athletes to be tested pre-season so that post injury performance may be compared to the athlete's own baseline.

5.2.2.2. Neurocognitive testing may be administered by the schools Licensed Athletic Trainer or other designated school personnel (Matt Ducklow) trained in test administration in a controlled computer lab environment.

## 6. Concussion Action Plan

6.1. When a student-athlete shows any signs, symptoms or behaviors consistent with a concussion, the athlete shall be removed immediately from practice or competition and evaluated by Licensed Athletic Trainer, school nurse or other health care professional with specific training in the evaluation and management of concussion.

6.1.1. School personnel, including coaches are encouraged to utilize a pocket guide on the field to assist them in recognizing a possible concussion. An example pocket guide is available as part of the CDC toolkit "Heads Up: Concussion in High School Sports" available at <http://www.cdc.gov/concussion>

6.2. Where possible, the athlete shall be evaluated on the sideline by the Licensed Athletic Trainer or school nurse or other appropriate health care professional. The sideline evaluation will include using the SAC (Sideline Assessment of Concussion tool) or the SCAT 2 (Sports Concussion Assessment Tool version 2).

6.2.1. The SCAT 2 is comprised of a symptom checklist, standard and sport specific orientation questions, the Standardized Assessment of Concussion (SAC), and an abbreviated form of the Balance Error Scoring Scale (BESS)

6.3. A student-athlete displaying any sign or symptom consistent with a concussion shall be withheld from the competition or practice and shall not return to activity until receiving clearance from a licensed physician (MD or DO). The student-athlete's parent/guardian(s) shall be immediately notified of the situation.

6.4. The student-athlete will receive serial monitoring for deterioration. Student-athletes and their parent/guardian shall be provided with written instructions upon dismissal from the practice/game. See Appendix B for a copy of the instructions.

6.5. In accordance with School District of Spring Valley's emergency action plans, immediate referral to Emergency Medical Services should be provided for any of the following "Red Flag Signs or Symptoms".

6.5.1. Loss of Consciousness

6.5.2. Seizure like activity

6.5.3. Slurring of speech

6.5.4. Paralysis of limb(s)

6.5.5. Unequal pupils or dilated and non-reactive pupils

6.5.6. At any point where the severity of the injury exceeds the comfort level of the on-site medical personnel

6.6. Consultation with a team of health care professionals experienced in concussion management shall occur for all student-athletes sustaining a suspected concussion. This consultation may occur by telephone between the local health care professional and a health care provider experienced in concussion management.

6.7. For the purposes of this document, a health care provider is defined as one who is trained in management of concussion and who is:

6.7.1. A licensed physician (M.D./D.O.)

6.7.2. Advanced nurse practitioner

6.7.3. Neuropsychologist

6.7.4. Physician assistant (PA) working under the direction of a physician (M.D./D.O.).

6.7.5. Licensed athletic trainer working under the direction of a physician (M.D./D.O.).

6.8. Subsequent management of the student-athlete's concussion shall be at the discretion of the treating health care professional, and may include the following:

6.8.1. When possible, repeat neurocognitive testing with comparison to baseline test results.

6.8.2. Medication management of symptoms, where appropriate

6.8.3. Provision of recommendations for adjustment of academic coursework, including the possible need to be withheld from coursework obligations while still symptomatic. See Appendix C for list of possible accommodations required.

6.8.4. Direction of return to play protocol, to be coordinated with the assistance of the school nurse or licensed athletic trainer (see Appendix D for return to play protocol)

6.8.7. Final authority for Return-to-Play shall reside with the attending health care professional (see 6.7), or their designee. Prior to returning to competition, the concussed student athlete must have a return-to-play clearance form signed by a licensed Physician (MD or DO).

6.9. The incident, evaluation, continued management, and clearance of the student-athlete with a concussion shall be documented.

## School District of Spring Valley Sports Concussion Management Plan

APPENDIX A: Statement Acknowledging Receipt of Education and Responsibility to report signs or symptoms of concussion to be included as part of the "Participant and Parental Disclosure and Consent Document".

**As a Parent and as an Athlete it is important to recognize the signs, symptoms, and behaviors of concussions.** By signing this form you are stating that you understand the importance of recognizing and responding to the signs, symptoms, and behaviors of a concussion or head injury.

### Parent Agreement:

I \_\_\_\_\_ have **read** the Parent Concussion and Head Injury Information and **understand** what a concussion is and how it may be caused. I also understand the common signs, symptoms, and behaviors. I agree that my child must be removed from practice/play if a concussion is suspected.

I understand that it is my responsibility to seek medical treatment if a suspected concussion is reported to me.

I understand that my child cannot return to practice/play until providing written clearance from an appropriate health care provider to his/her coach.

I understand the possible consequences of my child returning to practice/play too soon.

Parent/Guardian

Signature \_\_\_\_\_ Date \_\_\_\_\_

### Athlete Agreement:

I \_\_\_\_\_ have **read** the Athlete Concussion and Head Injury Information and **understand** what a concussion is and how it may be caused.

I understand the importance of reporting a suspected concussion to my coaches and my parents/guardian.

I understand that I must be removed from practice/play if a concussion is suspected. I understand that I must provide written clearance from an appropriate health care provider to my coach before returning to practice/play.

I understand the possible consequence of returning to practice/play too soon and that my brain needs time to heal.

Athlete

Signature \_\_\_\_\_ Date \_\_\_\_\_

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## School District of Spring Valley Sports Concussion Management Plan

### APPENDIX B: Immediate Post Concussion Instructions

The following instructions are to be given to each athlete and their parent/guardian after sustaining a concussion, as identified in section 6.4 of the School District of Spring Valley Concussion Management Plan

## Head Injury Precautions

During the first 24 hours:

1. Diet – drink only clear liquids for the first 8-12 hours and eat reduced amounts of foods thereafter for the remainder of the first 24 hours.
2. Pain Medication – do not take any pain medication unless specifically directed and prescribed by a physician.
3. Activity – activity should be limited for the first 24 hours, this would involve no school, video games, extracurricular or physical activities or work when applicable.
4. Observation – several times during the first 24 hours:
  - a. Check to see that the pupils are equal. Both pupils may be large or small, but the right should be the same size as the left.
  - b. Check the athlete to be sure that he/she is easily aroused; that is, responds to shaking or being spoken to, and when awakened, reacts normally.
  - c. Check for and be aware of any significant changes. (See #5 below)
5. Conditions may change significantly within the next 24 hours. Immediately obtain emergency care for any of the following signs or symptoms:
  - a. Persistent or projectile vomiting
  - b. Unequal pupil size (see 4a above)
  - c. Difficulty in being aroused
  - d. Clear or bloody drainage from the ear or nose
  - e. Continuing or worsening headache
  - f. Seizures
  - g. Slurred speech
  - h. Inability to recognize people or places – increasing confusion
  - i. Weakness or numbness in the arms or legs
  - j. Unusual behavior change – increasing irritability
  - k. Loss of consciousness
6. Improvement

The best indication that an athlete who has suffered a significant head injury is progressing satisfactorily is that he/she is alert and behaving normally.

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### APPENDIX C: Return to School Recommendations

In the early stages of recovery after a concussion, increased cognitive demands, such as academic coursework, as well as physical demands may worsen symptoms and prolong recovery. Accordingly, a comprehensive concussion management plan will provide appropriate provisions for adjustment of academic coursework on a case-by-case basis. The following provides a framework of possible recommendations that may be made by the managing health care professional:

Inform teacher(s) and administrator(s) about your injury and symptoms. School personnel should be instructed to watch for:

- Increased problems with paying attention, concentrating, remembering, or learning new information
- Longer time needed to complete tasks or assignments
- Greater irritability, less able to cope with stress
- Symptoms worsen (e.g., headache, tiredness) when doing schoolwork

Injured Student \_\_\_\_\_ Date \_\_\_\_\_

Until fully recovered, the following supports are recommended: *(check all that apply)*

\_\_\_ May return immediately to school full time.

\_\_\_ Not to return to school. May return on (date) \_\_\_\_\_

\_\_\_ Return to school with supports as checked below. Review on (date) \_\_\_\_\_

\_\_\_ Shortened day. Recommend \_\_\_ hours per day until (date) \_\_\_\_\_

\_\_\_ Shortened classes (i.e., rest breaks during classes). Maximum class length: \_\_\_\_\_ minutes.

\_\_\_ Allow extra time to complete coursework/assignments and tests.

\_\_\_ Reduce homework load by \_\_\_\_\_%.

Maximum length of nightly homework: \_\_\_\_\_ minutes.

\_\_\_ No significant classroom or standardized testing at this time.

\_\_\_ No more than one test per day.

\_\_\_ Take rest breaks during the day as needed.

\_\_\_ Other: List: \_\_\_\_\_

\_\_\_\_\_

Managing Health Care Professional

Please write legibly

Name \_\_\_\_\_ Office Phone \_\_\_\_\_

E-mail \_\_\_\_\_ Alt. Phone \_\_\_\_\_

Health Care Professional Signature \_\_\_\_\_ Date \_\_\_\_\_



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APPENDIX D: Return to Play Protocol, to be included in "Return to Play Clearance Form".

- Recovery from concussion and progression through the Return-to-Play stages is individualized and determined on a case-by-case basis. Many factors influence the rate of progression and include previous concussion history, duration and types of symptoms, age and sport/activity that the athlete participates in. Athletes with history of prior concussion, extended duration of symptoms, or participation in collision or contact sports may progress more slowly.
- The following table is adapted from the 3rd International Conference on Concussion in Sport and provides the framework for the return to play protocol.
- It is expected that student-athletes will start in stage 1 and remain in stage 1 until symptom free.
- The athlete may, under the direction of the health care professional and the guidance of the licensed athletic trainer, progress to the next stage only when the assessment battery has normalized (including symptom assessment and cognitive assessment with computerized or other appropriate neurocognitive tool).
- It is anticipated that at least 24 hours will be required, at a minimum, of being asymptomatic with each stage before progressing to the next stage.
- Utilizing this framework, in a best case scenario, a patient sustaining a concussion and being asymptomatic by the next day will start in Rehabilitation Stage 1 at post injury day 1 and progress through to stage 6, 'Return to Play' by post injury day 6.
- There may be circumstances, based on an individual's concussion severity, where the return to play protocol may take longer. Under all circumstances the progression through this protocol shall be overseen by the managing health care professional and licensed athletic trainer.
- Each student-athlete with a concussion shall be personally evaluated by a health care professional at least one time during this process.
- When the athlete has successfully passed through stage 5 (Full Contact Practice) and has previously been evaluated by a physician, verbal clearance to return to play may be obtained by the licensed athletic trainer or school nurse. Otherwise, a visit with a physician is required before such clearance to return to play will be granted.
- A completed "Return to Play Clearance Form" indicating the student is medically released to return to full competition shall be provided to school athletic director and school nurse prior to a student's being allowed to resume competition after suffering a concussion.

Stage	Functional Exercise or Activity	Objective	Recommended Tests Administered before advancing to next stage
1. No structured physical or cognitive activity	Only Basic Activities of Daily Living (ADLs). When indicated, complete cognitive rest followed by gradual reintroduction of schoolwork.	Rest and recovery, avoidance of overexertion	Initial Post-injury test battery: - Symptom checklist - Computer based Neuropsychological Testing
2. Light Aerobic Physical Activity	Non-impact aerobic activity (e.g. swimming, stationary biking) at < 70%estimated maximum heart rate for up to 30 minutes as symptoms allow	Increase heart rate, maintain condition, assess tolerance of activity	- Symptom checklist
3. Moderate aerobic physical activity and Non-contact training drills at half speed	Non-contact sport specific drills at reduced speed; Aerobic activity at 70-85% estimated maximum heart rate; light resistance training (e.g. weights at <50% previous max ability)	Begin assimilation into team dynamics, introduce more motion and non-impact jarring activities	-Symptom checklist
4. Non-contact training drills at full speed	Regular Non-contact training drills; aerobic activity at maximum capacity including sprints; regular weight lifting routine	Ensure tolerance of all regular activities short of physical contact.	- Symptom checklist -Computer based Neuropsychological Testing
5. Full Contact Practice	Full Contact Practice	Assess functional skills by coaching staff, ensure tolerance of contact activities	- Symptom checklist
6. Return to Play	Regular game competition		

## School District of Spring Valley Sports Concussion Management Plan

### APPENDIX E: Memo -Implementation of NFHS and WIAA Playing Rule Changes Related to Concussion and Concussed Athletes

In its various sports playing rules, the National Federation of State High School Associations (NFHS) and the Wisconsin Interscholastic Athletic Association (WIAA) have implemented a standard rule change in all sports dealing with suspected concussions in student athletes. The basic rule in all sports (the rule may be worded slightly differently in each to reflect the language of the sport) states:

*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. (Please see NFHS Suggested Guidelines for Management of Concussion in the Appendix of each NFHS Rules Book)*

The WIAA has taken additional steps to insure athlete safety and has added to the above rule by stating:

*A student who displays symptoms of a concussion and/or is rendered unconscious may not return to practice or competition without a physician's written approval.*

The responsibility for observing signs, symptoms, and behaviors that are consistent with a concussion rests with school personnel, medical staff and sports officials. In conjunction with the *School District of Spring Valley's Concussion Management Plan* and the rules stated above the following guidelines are given:

#### Role of the contest official in administering the new rules:

- Officials are to review and know the signs, symptoms and behaviors consistent with a concussion.
- Officials are to direct the removal an athlete who demonstrates signs, symptoms or behaviors consistent with concussion from the contest according the rules and protocol regarding injured contestants for the specific sport.

#### Role of school personnel in administering the new rule:

- All coaches, school nurses, licensed athletic trainers, and administrative personnel are required to complete a course dealing with concussion. The NFHS course *Concussion in Sport* is available free of charge at [www.nfhslearn.com](http://www.nfhslearn.com) and satisfies this requirement.
- All coaches and licensed athletic trainers are required to annually review the *Your School School District Concussion Plan* and the CDC publication *Heads Up: Concussion in High School Sports – A Guide for Coaches* available at [http://www.cdc.gov/concussion/HeadsUp/high\\_school.html](http://www.cdc.gov/concussion/HeadsUp/high_school.html).
- A student athlete who demonstrates signs, symptoms or behaviors consistent with concussion shall be removed immediately from the contest and shall not return to play until cleared by an appropriate health-care professional. All athletes assessed and determined to have symptoms consistent with having suffered a concussion must have a physician's written clearance prior to returning to competition or practice.

Appropriate health-care professional:

- An appropriate health-care provider is one who is trained in the management of concussion and who is:

- A licensed physician (M.D./D.O.)
- Advanced nurse practitioner
- Neuropsychologist
- Physician assistant (PA) working under the direction of a physician (M.D./D.O.)
- Licensed athletic trainer working under the direction of a physician (M.D./D.O.)

The School District of Spring Valley has developed a form for the school to receive written clearance from an appropriate health-care professional for return to play of a concussed student athlete. The form is available from the School Nurse or Athletic Director.

Links to resources:

- Utah High School Activities Association – [www.uhsaa.org](http://www.uhsaa.org)
- National Federation of High School Sports “Concussion in Sports” – [www.nfhslearn.com](http://www.nfhslearn.com)
- Wisconsin Interscholastic Athletic Association – [www.wiaawi.org](http://www.wiaawi.org)
- Consensus on Concussion in Sport: The Third International Conference on Concussion in Sport Held in Zurich, November 2008. *Journal of Athletic Training*, 2009. National Athletic Trainers Association, Inc. [www.nata.org/jat](http://www.nata.org/jat)

# TREATMENT ALGORITHM FOR SPORTS-RELATED CONCUSSION

WITH COMPUTERIZED NEUROCOGNITIVE TESTING AVAILABLE

