Interscholastic Youth Sports

ACUTE BRAIN INJURY REPORT 2024-25

Missouri State High School Activities Association
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2024-2025

Interscholastic Youth Sports Brain Injury Prevention Report

SCS HCS HB 300, 334, and 387 became law in August 2011, and it mandates that an organization with public schools as members must publish and distribute an annual report regarding the impact of student athlete concussions and head injuries which should include efforts that may be made to minimize damages from school sports injuries. The Department of Health and Senior Services, along with a statewide association of school boards [Missouri School Board Association (MSBA)], a statewide activities association that provides oversight for athletic or activity eligibility for students and school districts, [Missouri State High School Activities Association (MSHSAA)], and an organization named by the Department of Health and Senior Services that specializes in support services, education and advocacy of those with brain injuries [Brain Injury Association of Missouri (BIA-MO)] developed guidelines, pertinent information and forms to educate coaches, staff members, athletes and parents or guardians of youth athletes of the nature and risk of concussion and brain injury including continuing to play after a concussion or a brain injury (1).

MSHSAA has distributed and updated head injury materials annually since August of 2009 to its member schools using a variety of sources (2). These materials provide information that will educate parents, coaches, staff members, and athletes on the prevention, management, and dangers of head injuries in interscholastic sports (3). In December of 2011, MSHSAA conducted its first annual survey of member schools and the impact of head injuries. A thirteenth survey was conducted from August 1, 2024 through June 30, 2025, to collect data from the MSHSAA member schools. Five hundred and eighty-nine schools were contacted to complete the survey during the 2024-2025 school. Working with the Brain Injury Association of Missouri, Department of Health and Senior Services, Missouri Athletic Trainers Association, Missouri School Nurses Association and Missouri School Board Association, a pilot program began for the winter and spring of 2014, Sports Concussions: Facts, Fallacies and New Frontiers. The program was conducted in five regional sites presenting a one-day seminar educating staff members, coaches, nurses and athletic trainers on the new research and policies pertaining to head injuries. Because of the great success and attendance of the program, we are hopeful this partnership continues in future years.

Harvey Richards, retired Associate Executive Director formerly in charge of Sports Medicine for MSHSAA, was a part of the state legislative process for the head injury bill (4). Greg Stahl, retired Executive Assistant formerly in charge of Sports Medicine for MSHSAA, led the committee (5). Dr. Jennifer Rukstad is the current Executive Director in charge of Sports Medicine for MSHSAA, responsible for the distribution of educational materials to member schools, and conducted the 2024-2025 Head Injury Survey (6).

(1) Timetable of Meetings, Appendix A
(2) Fall membership-mailing, e-mails, website (mshsaa.org), district in-services
(3) Educational packet for member schools, Appendix B
(4) Harvey Richards, Retired Associate Executive Director
(5) Greg Stahl, Retired Assistant Executive Director
(6) Dr. Jennifer Rukstad, Executive Director, 1 N Keene St., Columbia, MO 65201; (573) 875-4880

2024-2025 Head Injury Report Survey

School Level	Total Schools			Completed Report Surveys			Did Not Complete the Report Survey			% of Member Schools that Completed Report Survey		
	2025	2024	2023	2025	2024	2023	2025	2024	2023	2025	2024	2023
High Schools 9-12 and Combined Schools 7-12	589	589	588	576	569	559	13	20	29	97.8%	96.6%	95.1%

Use of Online Video

The National Federation of High School Activities (NFHS) has produced and made available for free, the online course "Concussions in Sports." MSHSAA has approved this course for coaches to take as their educational component of the law. Many school districts continue to view this course as an in-service with the entire coaching staff, while other school districts have coaches complete the course individually to meet the by-law requirement for completing concussion education. For the year July 1, 2024 through June 30, 2025, 15,662 online courses were completed in Missouri.

The next table reflects the number of participants for each sport and/or activity by our member schools. This number will include duplicates for students who are in multiple activities. Music/Band, Sideline Cheerleading (Spirit) and Dance begin in the fall, but some schools will only participate in the winter or spring. The following table reflects the participation rates for both the 2023-2024 and 2024-2025 school years.

High School Sport/Activity	Participants	
	2024-2025	2023-2024
11-man Football	21,473	20,929
8-man Football	1,146	1,040
Baseball	14,474	14,573
Basketball-Boys	13,120	13,149
Basketball-Girls	8,322	8,588
Bass Fishing	131	152
Bowling	97	125
Chess	90	94
Cross Country-Boys	5,600	5,287
Cross Country-Girls	4,114	3,972
Dance/Pom Team	2,576	2,643
Esports	1,428	1,359
Field Hockey	1,033	1,022
Golf-Boys	4,768	4,583
Golf-Girls	2,492	2,341
Lacrosse-Girls	1,342	1,520
Music Activities (All)	51,080	50,548
Scholar Bowl	4,950	5,104
Sideline Cheerleading (Spirit)	9,440	9,419
Soccer-Boys	8,914	8,629
Soccer-Girls	7,820	7,878
Softball-Girls	8,468	8,682
Speech/Debate	6,292	7,763
Stunt	217	76
Swimming and Diving-Boys	1,769	1,735
Swimming and Diving-Girls	2,683	2,755
Target Shooting	734	684
Tennis-Boys	3,391	3,565
Tennis-Girls	5,134	4,725
Theatre	2,489	0
Track and Field-Boys	17,371	16,575
Track and Field-Girls	13,734	13,385
Volleyball-Boys	2,358	2,012
Volleyball-Girls	11,043	11,028
Water Polo	530	541
Wrestling-Boys	7,954	8,014
Wrestling-Girls	2,987	2,640
Totals	**251,564**	**247,135**

NOTE: All Music Activities include Choir, Concert Band, Marching Band and Orchestra
Theatre is separated out from Speech and Debate

High School Sport/Activity	Total Participation
Sport	172,257
*Taking into Account 20% Duplication of Athletes	34,451
Total Adjustment Participation Sport	137,806
Activity	79,307
*Taking into Account 20% Duplication of Students	15,861
Total Adjustment Participation Activity	63,446
Total Adjustment Participation Sport/Activity	201,252

*****20% Duplication is only an estimate and not an actual number

Data Collected

Schools were asked to provide information that related to possible head injuries. If signs or symptoms of a head injury were present, the student was to be withheld from that sport and or activity for a minimum of 24 hours and must have been seen by a medical professional. They must also provide to the school a **Return to Play** form before return to the sport or activity. The information below reflects those students who had to see a medical professional and provide a **Return to Play** form. Not all incidents would have resulted in a concussion.

HIGH SCHOOL ACTIVITIES

Activity	Activity Related	Non-Activity Related	Days/ Class Act	Days/ Class Non-Act	Days Missed Activity	Days Missed Non-Act	Diagnosed Activity	Diagnosed Non-Act	School Report-ing	Schools Partici-pating
Bass Fishing	0	0	0	0	0	0	0	0	0	20
Bowling	0	0	0	0	0	0	0	0	0	8
Chess	0	0	0	0	0	0	0	0	0	20
Dance/Pom	26	7	78	14	374	126	22	7	24	210
Esports	0	0	0	0	0	0	0	0	0	117
Music Activities	25	6	26	10	258	54	19	4	22	509
Scholar Bowl	0	0	0	0	0	0	0	0	0	416
Sideline Cheer	317	31	405	42	4270	396	256	25	154	532
Speech/Debate	0	1	0	5	0	0	0	1	1	216
Target Shooting	0	0	0	0	0	0	0	0	0	37
Theatre	1	0	0	0	5	0	1	0	1	83
TOTAL	**369**	**45**	**509**	**71**	**4907**	**576**	**298**	**37**	**202**	**2168**

HIGH SCHOOL SPORTS

Activity	Sport Related	Non-Sport Related	Days/ Class Sport	Days/ Class Non-Sport	Days Missed Sport	Days Missed Non-Sport	Diagnosed Sport	Diagnosed Non-Sport	School Report-ing	Schools Partici-pating
Baseball - Fall	2	2	1	2	2	15	0	2	4	107
Baseball - Spring	126	15	67	6	634	102	68	9	95	506
Basketball - Boys	243	25	155	34	1511	259	149	19	161	585
Basketball - Girls	263	13	241	23	2522	138	195	10	172	548
Cross Country - Boys	6	5	17	8	62	53	4	5	10	471
Cross Country - Girls	1	7	10	3	23	140	1	6	8	453
Field Hockey	28	2	11	2	226	24	19	2	14	29
11-Man Football	1657	48	1419	65	15078	560	1307	40	274	312
8-Man Football	72	2	60	2	377	11	51	2	35	45
Golf – Boys	5	1	2	0	42	10	4	1	6	351
Golf - Girls	4	2	5	3	32	10	3	2	6	255
Lacrosse - Girls	37	5	19	3	345	67	25	4	21	36
Soccer - Boys	296	12	208	6	1793	120	203	7	125	246
Soccer – Girls	335	20	150	24	2513	342	229	19	151	246
Softball - Girls Fall	131	22	82	28	1174	326	91	22	96	320
Softball - Girls Spring	22	1	10	1	59	7	8	1	16	148
Stunt - Girls	3	0	0	0	39	0	3	0	3	11
Swim/Diving - Boys	15	5	7	5	162	47	13	4	16	122
Swim/Diving - Girls	20	8	2	10	196	93	14	7	19	138
Tennis - Boys	4	2	10	0	19	30	2	2	6	181
Tennis - Girls	5	6	1	7	42	116	4	5	10	189
Track/Field (B) Spring	17	22	10	4	133	235	13	19	34	539
Track/Field (G) Spring	32	18	16	12	309	282	24	16	41	537
Volleyball - Boys	29	5	15	0	174	49	15	5	23	101
Volleyball - Girls	202	12	173	7	2013	68	143	12	127	467
Water Polo - Boys	3	0	2	0	18	0	2	0	2	20
Water Polo - Girls	9	0	2	0	55	0	4	0	5	13
Wrestling - Boys	438	15	440	19	4887	332	348	12	153	257
Wresting – Girls	235	8	203	4	2716	54	181	6	94	233
TOTAL	**4240**	**283**	**3338**	**278**	**37156**	**3490**	**3123**	**239**	**1727**	**7466**

2024-2025 Concussion Survey Results

Sports	Suspected Sport Head Injuries	Number of Days Sport was Missed	Number of Days Class Missed
Male	2,941	25,118	2,424
Female	1,299	12,038	914
Total	**4,240**	**37,156**	**3,338**
Activities	Suspected Activity Head Injuries	Number of Days Activity was Missed	Number of Days Class Missed
Total	**369**	**4,907**	**509**
GRAND TOTAL	**4,609**	**42,063**	**3,847**

There was a total of 2,941 males and 1,299 females held out of practices and contests due to a “suspected” head injury, for a total of 25,118 (males) and 12,038 (females) days of missed participation. This means that the male athletes were held out an average of 8.54 days per incident, and the female athletes also were held out an average of 9.27 days per incident. This shows a correlation to the gradual return-to-play guidelines, which indicates at a minimum a five-day to seven-day return rate. The number of days that a student missed class time still remains a low number compared to the total number of days missed in the sport or activity practice/contest.

2024-2025 Top 7 Head Injury Sports/Activities	
Sport/Activity	Diagnosed Head Injuries
Football	1,358
Wrestling (B)	348
Sideline Cheerleading	256
Soccer (G)	229
Soccer (B)	203
Basketball (G)	195
Wrestling (G)	181

2023-2024 Top 7 Head Injury Sports/Activities	
Sport/Activity	Diagnosed Head Injuries
Football	1,269
Sideline Cheerleading	300
Wrestling (B)	274
Soccer (G)	261
Soccer (B)	188
Wrestling (G)	156
Basketball (B)	148

2024-2025 Percentage of Head Injuries per Total Occurrences	
Sport/Activity	% of total reported Head Injuries
Football	29.5%
Wrestling (B)	7.6%
Sideline Cheerleading	5.6%
Soccer (G)	5.0%
Soccer (B)	4.4%
Basketball (B)	4.2%
Wrestling (G)	3.9%

Concussion Rates per 10,000 athletic exposures From High School RIO Surveillance Study	
Sport/Activity	Rate
Football	9.28
Wrestling (G)	5.95
Sideline Cheerleading	5.80
Soccer (G)	5.76
Wrestling (B)	5.60
Soccer (B)	2.97
Basketball (B)	1.34

MSHSAA Athletic exposure was calculated from the first day of practice to the end of Districts for that sport. This is not a true actual count of participation but very accurate assumption. Example:

Football had on the average 84 days of practice and/or contests
84 x 22,619 participants = 1,899,996 exposures
1,729 reported head injuries

$$\frac{1,729}{1,899,996} = \frac{X}{10,000}$$

MSHSAA – Top 7 Concussion in Sports/Activities Concussion Rates per 10,000 Athletic Exposures		
Sport/Activity	*Rate #1	**Rate #2
Football	9.1	7.15
Wrestling (B)	6.32	5.03
Sideline Cheerleading	4.20	3.39
Soccer (G)	5.49	3.75
Soccer (B)	4.26	2.92
Basketball (B)	2.13	1.58
Wrestling (G)	9.04	6.97

*Rate #1: Student athletes removed from participation due to suspected/reported concussion
**Rate #2: Student athletes removed from participation due to diagnosed concussion

There were several questions asked on this year's survey:

1. Does your school have a local policy-expectation for collecting additional medical information for a student athlete that is longer accounted for on the new MSHSAA Medical Eligibility Form (physical) or on the Annual Documentation Requirements forms?
2. Has your school fully implemented the use of Wet Bulb Globe Temperature (WBGT) for navigating environmental conditions (heat/humidity) as it relates to practices and games being permitted to occur or being delayed/suspended, postponed or cancelled?
3. If your school has fully implemented the use of Wet Bulb Globe Temperature (WBGT), how often do you feel that your school has made modifications to practices and/or games based on WBGT readings.
4. Which of the following does your school use to make determinations on the suspension, postponement or cancellation of practices or games when questionable levels of heat and humidity are present?
5. Which of the following does your school use to meet the requirements in bylaw 3.1 for every coach/director to complete CPR/AED training?
6. Does your school practice/simulate your Emergency Action Plans that you have in place for each venue/facility of which you host athletic or activities?

Below are the results from these questions:

High Schools (9-12) and Combined Schools (7-12) Responses		
Question	**Answer**	**Number of Responses**
Does your school have a local policy-expectation for collecting additional medical information for a student athlete that is longer accounted for on the new MSHSAA Medical Eligibility Form (physical) or on the Annual Documentation Requirements forms?	Yes	252
	No	301
Has your school fully implemented the use of Wet Bulb Globe Temperature (WBGT) for navigating environmental conditions (heat/humidity) as it relates to practices and games being permitted to occur or being delayed/suspended, postponed or cancelled?	Yes	478
	No	75
If your school has fully implemented the use of Wet Bulb Globe Temperature (WBGT), how often do you feel that your school has made modifications to practices and/or games based on WBGT readings?	Not applicable – We have not used the MSHSAA recommendation for WBGT	61
	We have modified our practice or game schedules several times due to a WBGT reading	211
	We have modified our practice or game schedules a few times due to a WBGT reading	265
	We have never modified a practice or game schedule due to a WBGT reading	16
Which of the following does your school use to make determinations on the suspension, postponement or cancellation of practices or games when questionable levels of heat and humidity are present?	MSHSAA WBGT Guidelines and Recommendations	470
	Heat Index	50
	Ambient Temperature	1
	Weather Advisories	32
Which of the following does your school use to meet the requirements in bylaw 3.1 for every coach/director to complete CPR/AED training?	Hands On, In Person Training Setting	270
	On Line Training	283
Does your school practice/simulate your Emergency Action Plans that you have in place for each venue/facility of which you host athletic or activities?	Yes	333
	No	220

Educational materials were distributed to all member schools and are available for the public to access through our website (www.mshsaa.org). Awareness of this serious issue has come to the forefront. Several schools have requested

an in-service to educate their coaching staff, with professionals conducting the program. Our staff, along with several others, has put programs in place to continue the educational effort and stay abreast of any new research available.

MSHSAA continues to support the Brain Injury Association of Missouri in putting together a program at various locations throughout the state of Missouri: Sports Concussions: Facts, Fallacies and New Frontiers.

MSHSAA will conduct an annual survey during each summer to collect yearlong data. The Sports Medicine Committee will evaluate the questions and the report.

APPENDIX A

2010-2025 Timetable of Meetings

Meeting	Location	Date
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	April 28, 2010
NFHS Summer Meeting Sports Medicine Committee		July 6-9, 2010
Parkway School District Concussion Presentation	St. Louis	August 12, 2010
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	January 6, 2011
Concussion Bill	Capitol, Jefferson City	January 11, 2011
Meeting – House Bill 300	Capitol, Jefferson City	February 7, 2011
Phone Conference - House Bill 300		February 25, 2011
Press Conference House Bill 300	St. Louis Children's Hospital	March 4, 2011
Phone Conference - House Bill 300		March 7, 2011
NFHS Summer Meeting - Sports Medicine Committee	Philadelphia, Pennsylvania	June 27 – July 1, 2011
Conference Call - Concussions	MSHSAA Office	August 16, 2011
Concussion Meeting	MSHSAA Office	August 25, 2011
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	January 5, 2012
Conference Call - Adult Brain Injury (MO Dept. of Health/Sr. Svc.)		January 19, 2012
Conference Call - Adult Brain Injury (MO Dept. of Health/Sr. Svc.)		February 14, 2012
St. Louis Brain Association Meeting	St. Louis	March 1, 2012
Mercy Sports Medicine Conference Exertional Heat Illnesses		March 30-31, 2012
Adult Brain Injury (MO Dept. of Health/Sr. Svc.)	MSHSAA Office	August 30, 2012
University of Missouri Research - Survey of all Injuries		June 1, 2012
Coaches Training Meeting - Head/Spinal Injuries	St. Luke's College of Health Sciences - Chillicothe	October 12, 2012
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	December 13, 2012
Meeting with Dr. Hubbard, St. Luke's College of Health Sciences	MSHSAA Office	April 3, 2013
Brain Injury Association of Missouri - Conference Call		April 16, 2013
University of Missouri Research - Survey of all Injuries		June 2, 2013
NFHS Summer Meeting - Sports Medicine Committee	Denver, Colorado	June 24-28, 2013
Brain Injury Association of Missouri - Annual Meeting Planning	Stoney Creek Inn, Columbia	September 6, 2013
Coaches Training Meeting	St. Luke's College of Health Sciences - Chillicothe	October 2, 2013
St. Luke's College of Health Sciences - Conference Call		October 23, 2013
University of Missouri Journalism - Concussion Interview - Conference Call		November 12, 2013
NFL – Chiefs - Head's Up Mom's Football Safety Clinic	Kansas City Chiefs Facility	December 3, 2013
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	December 12, 2013
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Springfield	January 14, 2014
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Kansas City	January 22, 2014
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Columbia	January 27, 2014
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	St. Louis	February 4, 2014
NFHS Summer Meeting - Sports Medicine Committee	Boston, Massachusetts	June 27 – July 2, 2014
Summer's AD Workshop - Emergency Action Planning		July 31, 2014
Brain Injury Association of Missouri - Concussion Seminar Planning	Stoney Creek Inn, Columbia	October 8, 2014
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	December 11, 2014
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Springfield	January 16, 2015
NFHS Football Meeting	Indianapolis, Indiana	January 23-25, 2015

Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Columbia	January 27, 2015
Missouri United Schools Insurance Council - Concussion Seminar	Lake of the Ozarks	January 29-30, 2015
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	St. Louis	February 5, 2015
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Kansas City	February 12, 2015
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	February 18, 2015
USA/NFL Football Meeting	Indianapolis, Indiana	February 22, 2015
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Cape Girardeau	February 26, 2015
USA/NFL Football Meeting	New York, New York	March 26-27, 2015
MIAAA Conference - Concussion Information Booth/Heads Up Football	Lake Ozark	April 10-14, 2015
Sports Medicine Advisory Committee Meeting - Overuse Injuries in Baseball	Indianapolis, Indiana	June 8-10, 2015
NFHS Summer Meeting - Sports Medicine Committee	New Orleans, Louisiana	June 26 – July 3, 2015
Officiate Missouri Day	St. Louis	July 24-25, 2015
SERC Sports Medicine Symposium	Kansas City	August 1, 2015
Brain Injury Association - Statewide Conference Call		August 18, 2015
KBIA Radio Interview - Athletic Trainers at High School Sporting Events		September 18, 2015
Brain Injury Association Meeting	St. Louis	September 23, 2015
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	December 10, 2015
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Columbia	February 17, 2016
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Cape Girardeau	February 18, 2016
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	St. Louis	February 22, 2016
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Springfield	February 25, 2016
USA/NFL Football Meeting	Indianapolis, Indianapolis	March 21-23, 2016
MIAAA Conference - Concussion Information Booth	Lake Ozark	April 8-12, 2016
NFHS Summer Meeting - Sports Medicine Committee	Reno, Nevada	June 28 – July 3, 2016
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	December 3, 2016
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	St. Louis	January 26, 2017
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Kansas City	February 2, 2017
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Columbia	February 9, 2017
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Springfield	February 23, 2017
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Cape Girardeau	March 2, 2017
Solutions for Safety in Sports Seminar	Kansas City	March 28-29, 2017
MIAAA Conference - Concussion Information Booth – Head Injury Survey Information	Lake Ozark	April 7-11, 2017
NFHS Summer Meeting - Sports Medicine Committee	Providence, Rhode Island	June 28 – July 3, 2017
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	September 5, 2017
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	St. Louis	January 29, 2018
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Columbia	February 2, 2018
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Cape Girardeau	February 6, 2018
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Springfield	February 8, 2018
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Kansas City	February 12, 2018
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	March 1, 2018
MIAAA Conference - Concussion Information Booth – Head Injury Survey Information	Lake Ozark	April 8-10, 2018

NFHS SMAC Summit	Indianapolis, Indiana	April 21-23, 2018
NFHS Summer Meeting - Sports Medicine Committee	Chicago, Illinois	June 27-July 3, 2018
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	September 10, 2018
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	St. Louis	February 26, 2019
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	February 28, 2019
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers	Kansas City	March 4, 2019
Sports Concussion: Facts, Fallacies and New Frontiers - Brain Injury Association	Columbia	March 11, 2019
MIAAA Conference - Concussion Information Booth – Head Injury Survey Information	Lake Ozark	April 7-9, 2019
NFHS Summer Meeting - Sports Medicine Committee	Indianapolis, Indiana	June 26-July 2, 2019
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	September 16, 2019
Brain Injury Association - Sports Concussion: Facts, Fallacies and New Frontiers – Central MO	Columbia	February 7, 2020
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	March 15, 2020
MIAAA Conference - Concussion Information Booth – Head Injury Survey Information	Lake Ozark	Postponed – COVID19
NFHS Summer Meeting - Sports Medicine Committee	Via Zoom	June 26 - July 2, 2020
MSHSAA Sports Medicine Advisory Committee Meeting - Sports Medicine Committee - COVID Planning Meeting	Via Zoom	June 4, 2020
MSHSAA Sports Medicine Advisory Committee Meeting	Via Zoom	September 3, 2020
MSHSAA Sports Medicine Advisory Committee Meeting	Via Zoom	March 25, 2021
MIAAA Conference - Concussion Information Booth – Head Injury Survey Information	Lake Ozark	April 11-13, 2021
NFHS Summer Meeting - Sports Medicine Committee	Orlando, Florida	June 28 - July 2, 2021
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	September 2, 2021
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	March 24, 2022
MIAAA Conference - Concussion Information Booth – Head Injury Survey Information	Lake Ozark	April 3-5, 2022
NFHS Summer Meeting - Sports Medicine Committee	San Antonio, Texas	June 28 - July 2, 2022
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	September 1, 2022
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	March 22, 2023
NFHS Summer Meeting - Sports Medicine Committee	Seattle, Washington	June 28-July 1, 2023
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	August 24, 2023
Brain Injury Association – Facts, Fallacies & New Frontiers – Central MO	MSHSAA Office	February 29, 2024
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	March 20, 2023
NFHS Summer Meeting - Sports Medicine Committee	Boston, Massachusetts	June 28-July 2, 2024
MSHSAA Ad Hoc Committee Meeting – Football & SMAC - Drills	MSHSAA Office & Zoom	July 11, 2024
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	August 21, 2024
MSHSAA Sports Medicine Advisory Committee Meeting	MSHSAA Office	March 6, 2025
NFHS Summer Meeting - Sports Medicine Committee	Chicago, Illinois	June 28-July 1, 2025

APPENDIX B

MSHSAA Broadcast Email

TO: **Athletic Directors, District Athletic Directors, Athletic Trainers, School Nurses - High Schools (9-12) and Combined Schools (7-12)**
FROM: **Dr. Jennifer Rukstad, Executive Director - Sports Medicine**
SUBJECT: **MSHSAA Head Injury Report/Survey: 2024-2025 SCHOOL YEAR**

This email is to remind you that your school must complete information on head injuries that occur in your school district during the 2024-2025 school year in order for our state activities association to be in compliance with **House Bill 300 (Brain Injury Prevention Act)**. This information is used to produce a report that is sent to the State Capitol and posted to the Sports Medicine page at www.mshsaa.org, available to all schools, parents and general public.

Head Injury Reporting System: As was the case last year, the 2024-2025 MSHSAA Head Injury Report/Sports Med Survey is again located on the MSHSAA website which allows you go into the report after each season (Fall/Winter/Spring) and record your head injury data by sports. The Head Injury Report/Sports Med Survey can be accessed by logging on to your school's home page, and selecting the link titled "Head Injury Reporting/Sports Med Survey", which is posted under the "Account" category. The MSHSAA Head Injury Report/Sports Med Survey consists of two separate tasks, **(1) Head Injury Reporting tab**, used to report the actual number of head injuries by sport, and **(2) Sports Medicine Survey tab**, used to provide feedback on Sport Medicine issues that impact interscholastic sports/activities. **NOTE: Again, the neat feature about this reporting system is that you can go to the "Head Injury Reporting" tab multiple times during a school year to update your data on head injuries. For example, you can use the Head Injury Reporting tab after each sports season…. Fall, Winter, Spring to report your head injury data seasonally rather all at once in May at the conclusion of your spring season.**

As in the past, the MSHSAA Head Injury Report/Sports Med Survey can be accessed and completed by the Athletic Director, Athletic Trainer, School Nurse, or a combination of this group, so long as these individuals are posted on your school's Administrator page on the MSHSAA website which allows them login access to your school home page on the MSHSAA website. Regardless of who actually completes this survey, please make sure to involve the school nurse and/or athletic trainer so that we may have the most accurate data/information accounted for in this survey. **Your completion of this survey is "mandatory" in order for the MSHSAA to remain compliant with the expectations outlined in House Bill 300. The MSHSAA will be tracking the completion of this survey by each MSHSAA member school.**

The 2024-2025 MSHSAA Head Injury Report/Survey is now open to submit current data/responses. The deadline for final completion is June 30, 2025.

Thanking you in advance,

Jen Rukstad
MSHSAA Executive Director – Sport Medicine
Missouri State High Activities Association

SPORTS MEDICINE REMINDERS FOR ATHLETIC DIRECTORS
FALL SEASON

Medical Emergency Action Plan (EAP) Required for Hosting Postseason

- **Continuing for the 2024-2025 School Year, prior to final approval for a school to host a postseason contest/event, a Medical Emergency Action Plan (EAP) for all State series sites and venues must be confirmed/uploaded to the MSHSAA website prior to hosting.** The Medical EAP shall specifically require an onsite AED and use the MSHSAA's AED Guidelines as posted on the Sports Medicine page at www.mshsaa.org. A Medical Emergency Action Plan (EAP) for the venue being used for hosting a postseason contest must be uploaded and accounted for at www.mshsaa.org.
- **Medical EAP's, as noted above, must also include the implementation of a Pre-Event/Contest Medical Planning Meeting (Medical Timeout) that uses the "Checklist" contained in the Pre-Event/Contest Medical Planning Meeting Procedures document as posted on the Sports Medicine page at www.mshsaa.org.**
- This meeting should happen prior to each athletic event and at each venue when home games are held. The meeting is coordinated by the home team administrator but can be delegated to the Athletic Trainer or other qualified medical personnel. The Medical Timeout meeting should include the following: onsite administrators for both schools, medical personnel for both schools, game officials, EMS personnel if present, security/law enforcement if present, any coach who is designated as an active part of the host school's EAP, any other personnel as determined by participating schools.

Pre-participation Physical Evaluation Forms – Released April 2023

- **Make sure that you are issuing the Preparticipation Physical Forms posted under MSHSAA Resources on the Sports Medicine page at www.mshsaa.org. NOTE: Schools are now collecting the Medical Eligibility Form (page 5) of the new PPE forms.**
- There are no exemptions or relief to MSHSAA bylaws requiring all students to have a current/valid physical prior to participating in **All Sports, Spirit/Cheer or Marching Band**.
- All students participating must have a valid physical prior to being allowed to practice in any manner at the start of the defined sport season. NOTE: The requirement for a student to have a valid physical during the summer participation continues to be a local school decision.
- **Go to the Sports Medicine page at www.mshsaa.org and use the following link listed under MSHSAA Resources to review the details of the current PPE requirements:**
  -MSHSAA Pre-participation Physical Evaluation Forms-Process (All Sports, Spirit & Marching Band) - Revised April 2023

Pre-participation Documentation-Annual Requirements

- **Pre-participation Documentation-Annual Requirements must now be completed/collected for ALL students participating in ANY Sport and/or Activity.**
- **Documentation that must be distributed to and collected from all students participating in ANY sport and/or activity now includes:** Current Health and Injury Update, Emergency Contact Information, Parent Permission/Insurance, Student Agreement, Parent/Student Acknowledgment for Concussion Education/Materials, Parent/Student Acknowledgment of Injury/Risk Disclosure. **NOTE: These forms MUST be completed ANNUALLY and collected prior to a student participating.**
- **Go to the Sports Medicine page at www.mshsaa.org and use the following link listed under MSHSAA** Resources to review the details of the current Documentation-Annual Requirements:
  -MSHSAA Pre-participation Documentation – Annual Requirements (All Sports & All Activities) - **Revised April 2023**

Concussion Information and Materials

- **It is mandatory that each member school (Middle Schools and High Schools) of the MSHSAA provide Concussion Education to their coaches, players and parents ANNUALLY.** There are a number of different ways to meet this requirement, whether that be scheduling coaches/players/parent meetings and showing the free NFHS Concussion Education course/video or whether that be choosing to distribute Concussion Education information to each of these three groups. **Several resources for Concussion Education are located on the Sports Medicine page at www.mshsaa.org.**
  Concussion Education Resources:
  https://www.mshsaa.org/resources/PDF/A%20Parent's%20-%20Guardian's%20Guide%20to%20Concussion%20-%20April%202019.pdf
  https://nfhslearn.com/courses/concussion-in-sports-2

- **Concussion Return to Play Form (Mandatory):** When your school has a student that has been removed from a practice or game/contest due to signs and symptoms of a concussion and is then diagnosed with a concussion, your school must use the MSHSAA Concussion Return To Play Form/Guidelines in consultation with an

- MD/DO/PAC/LAT/ARNP/Neuropsychologist in order for the student return to practice/competition. **The use of this form is critical in an effort to protect the student athlete's well-being and the school's position of liability.**
  Return To Play Form:
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- **Athletic Directors** must keep accurate records and documentation of concussion education for coaches, athletes and parents and be able to provide it to MSHSAA when requested.

Mandatory Concussion/Head Injury Reporting

- **All schools are required by HB300 to track any suspected head injuries for students who participate in sports or activities throughout the school year.**

- **ANNUAL HEAD INJURY REPORT/SPORTS MEDICINE SURVEY: Athletic Directors, Athletic Trainers and School Nurses MUST track any and all head injuries sustained by a student during every season for each sport and activity during the school year. During your tracking of head injuries, make sure to note following for every head injury:**
  1. Was the head injury diagnosed as a concussion, or not a concussion?
  2. Was it a sport related or non-sport related head injury?
  3. How many days of class time was missed due to the head injury?
- **NOTE:** At the conclusion of the Fall, Winter and Spring sport/activity seasons, the school's Athletic Director, Athletic Trainer or School Nurse will login to their school's homepage on the MSHSAA website and under the "ADMIN" tab select the "Head Injury Reporting/Sports Med Survey" link to access the portal for entering head injury data for each sport/activity season. **NOTE:** In order for the Athletic Trainer or School Nurse to have login access for completing the Head Injury Report, they MUST be listed on the school's "Administrators" page as an AT or School Nurse.

Emergency Action Planning Guide

- On the MSHSAA web site under Sports Medicine is information for your school to set up and implement the "Anyone Can Save a Life" program. This program is free of charge. If you have any question, please contact MSHSAA.
- It is absolutely necessary that each member school implements an Emergency Action Plan for each sport, activity and venue at your school. The MSHSAA promotes to our schools the program titled **"ANYONE CAN SAVE A LIFE",** which is a highly effective Emergency Action Plan Program being used at the middle school and high school level across the country.
- **Emergency Action Planning:** http://www.mshsaa.org/resources/pdf/emergencyPlanning.pdf

Wet Bulb Globe Thermometers (WBGT)

- The use of a Wet Bulb Globe Thermometer (WBGT) is the recognized practice for determining unsafe heat/humidity conditions for all outdoor sports, marching band and spirit. Note: Indoor sports, such as Volleyball, are subject to these guidelines "if" air condition facilities are not used.
- WBGT Recommendations and Guidelines, Background and Rationale are posted on the Sports Medicine page at **www.mshsaa.org**.

Online Sports Medicine Information

- All Sports Medicine information is located online by going to the MSHSAA website (www.mshsaa.org) and clicking on the Sports Medicine tab.
- **Reminder - Fall Sports: Mandatory 16 Day Heat Acclimatization requirements are to be followed for the start of fall practices. Please see information on heat/hydration found on the Sports Medicine page of our website. The MSHSAA SMAC will pass along additional recommendations to include and consider in addition to the 16 Day Heat Acclimatization for the safety and risk management of fall sport athletes.**

SPORTS MEDICINE REMINDERS FOR ATHLETIC DIRECTORS WINTER SEASON

Medical Emergency Action Plan (EAP) Required for Hosting Postseason

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Pre-participation Physical Evaluation Forms

- **Make sure that you are issuing the Preparticipation Physical Forms posted under MSHSAA Resources on the Sports Medicine page at www.mshsaa.org. NOTE:** Schools are now collecting the **Medical Eligibility Form** (page 5) of the PPE forms.
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- **Athletic Directors** must keep accurate records and documentation of concussion education for coaches, athletes and parents and be able to provide it to MSHSAA when requested.

Mandatory Concussion/Head Injury Reporting

- All schools are required by HB300 to track any suspected head injuries for students who participate in sports or activities throughout the school year.

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- **Emergency Action Planning (EAP):** http://www.mshsaa.org/resources/pdf/emergencyPlanning.pdf

Wrestling Weight Management Program

- All Wrestling schools must use a certified weight assessor to complete weight assessments on their wrestlers prior to a wrestler competing in competition.
- **All new weight assessors must be certified.**
- See Wrestling page at www.mshsaa.org for more details regarding the mandatory Wrestling Weight Management Program.

Online Sports Medicine Information

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SPORTS MEDICINE REMINDERS FOR ATHLETIC DIRECTORS SPRING SEASON

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- WBGT Recommendations and Guidelines, Background and Rationale are posted on the Sports Medicine page at **www.mshsaa.org**.

Baseball Pitching Limitations

- Each coach will be required to enter pitch counts for all pitchers at all levels into the MSHSAA website within 24 hours of the completion of all games.
- For all levels, no pitcher may pitch more than 2 consecutive days without at least one day of rest prior to their third pitching appearance.
- See MSHSAA Baseball Manual for additional details regarding pitching limitations.

Online Sports Medicine Information

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CONCUSSION EDUCATION AND MANAGEMENT PROTOCOL

Education

Concussions are common in sports. The Missouri State High School Activities Association (MSHSAA) believes that education of coaches, officials, athletes, and their parents or guardians are key to safely returning a student athlete to play. Appropriate immediate care after a suspected concussion, and follow up incorporating a multi-disciplinary team that includes the coach, parent or guardian, athlete's physician, team physician and athletic trainer (if available), and school representatives, also are important for the proper management of a sport-related concussion.

Each school district will receive educational materials for coaches, athletes, parents, and school officials, required forms for student athlete participation and parent/guardian consent, and recommended medical clearance forms for return to play.

Annually, MSHSAA member school districts will ensure that every coach, student athlete, and parents or guardians of a student athlete completes a concussion and head injury information sheet and returns it to the school district prior to the student athlete's participation in practice or competition. Officials will receive training from their parent organization. Each official's organization will require annual concussion training and maintain a signed head injury information sheet for each official.

Recognition and Evaluation of the Athlete with a Concussion

1. Recognition of the signs and symptoms of a concussion is important. Every member of the team-athlete, teammates, coaches, parents or guardians, officials, athletic trainers, and team physicians have a duty to report a suspected concussion. Not all school districts have medical personnel available to cover every practice and competition; therefore, the coach is the person in the best position to protect the player and must be aware that not all student athletes will be forthcoming about their injury.

2. An official shall not be responsible for making the diagnosis of a concussion. The official can assist coaches and medical staff by recognizing signs and symptoms of a concussion and informing the coach and medical staff of their concerns.

3. The coach, (Athletic Trainer) AT, or physician on site should evaluate the athlete in a systemic fashion:
   a. Assess for airway, breathing, and circulation (basic CPR assessment)
   b. Assess for concussion
      i. Any unconscious athlete should be assumed to have a severe head and/or neck injury and should have their cervical spine immobilized until a determination can be made that the cervical spine has not been injured. If no medical professional can make the assessment, the athlete should be transported to an appropriate emergency care facility.
      ii. A conscious athlete with no neck pain can be further evaluated on the sideline.

4. An athlete experiencing ANY of the signs/symptoms of a concussion should be immediately removed from play. Signs/Symptoms of a concussion include:

PHYSICAL	COGNITIVE	EMOTIONAL
Headache	Feeling mentally "foggy"	Irritability
Nausea/Vomiting	Feeling slowed down	Sadness
Dazed/Stunned	Difficulty concentrating	More emotional
Balance problems	Difficulty remembering	Nervousness
Visual problems	Forgetful of recent information	
Fatigue	Confused about recent events	
Sensitivity to light	Answers questions slowly	
Sensitivity to noise	Repeats questions	

5. Evaluation
   a. Following any first aid management, the medical team, or coach in the absence of medical personnel, should assess the athlete to determine the presence or absence of a concussion. The current version of the Sport Concussion Assessment Tool (SCAT) is an assessment tool that is readily available and can assist with the

assessment. The athlete should be monitored for worsening or change in signs and symptoms over the next 24 hours. Instructions should be given to the parent or guardian as to signs and symptoms that may require further or more emergent evaluation.

6. Management of a Concussion and Return to Play
   a. An athlete determined to have a concussion or have concussion-like symptoms will be removed from practice or competition and is not allowed to return to practice or competition that same day.
   b. If an athlete displays concussion-like signs or symptoms, the athlete should be assumed to have a concussion until further medical evaluation can occur. “WHEN IN DOUBT, SIT THEM OUT!”
   c. Written clearance from a physician (MD or DO), Advanced Nurse Practitioner in written collaborative practice with a physician, Certified Physician Assistant in written collaborative practice with a physician, Athletic Trainer or Neuropsychologist in written supervision of a physician must be provided prior to return to play.
   d. Following a concussion, current accepted guidelines on physical and cognitive activity should be practiced until symptoms have resolved.
   e. An athlete must be asymptomatic at rest and with exertion prior to return to play
   f. A graduated return to play progression should be followed to guide return to activity following medical clearance as outlined on the MSHSAA Concussion Return to Play form.

National Federation of State
High School Associations

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 a type of traumatic brain injury that impairs the function of the brain. It occurs when the brain moves within 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 or other serious brain injury.

The understanding of sports-related concussion continues to evolve. We now know that young athletes are particularly vulnerable to the effects of a concussion. Once considered a "ding" to the head, it is now understood that a concussion has the potential to result in a variety of short- or long-term changes in brain function and, rarely, death.

What is a concussion?

A concussion is a traumatic brain injury that interferes with the normal function of the brain. Simply stated – a concussion results from an injury to the brain, and there is no such thing as a minor brain injury! Concussions should never be referred to as a "ding" or a "bell-ringer." Any suspected concussion must be taken very seriously.

An athlete does not need to lose consciousness (be "knocked-out") to suffer a concussion. In fact, less than 5% of concussed athletes suffer a loss of consciousness.

What happens to the brain during a concussion is not completely understood. It is a complex process, primarily affecting the 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 increase in stress, such as another head injury, until it fully recovers.

Common sports injuries such as torn ligaments and broken bones are structural injuries that can be seen on x-rays or MRI. A concussion, however, is an injury that interferes with how the brain works and cannot be seen on MRI or CT scans. Therefore, even though the brain is injured, the brain looks normal on these tests.

Recognition and Management

If an athlete exhibits any signs, symptoms, or behaviors that make you suspicious of a concussion, the athlete **must** be removed from play and not be allowed to return to play until they are evaluated and cleared by a health-care professional. Failure to remove the athlete from activity puts them at risk for sustaining another

head injury while concussed, which can lead to worsening concussion symptoms, increased risk for further injury, and, sometimes even death.

Parents/guardians and coaches are not expected to "diagnose" a concussion. However, everyone involved in athletics must be aware of the signs, symptoms and behaviors associated with a concussion. If you suspect that an athlete may have a concussion, then the athlete must be **immediately removed** from all physical activity.

Signs Observed by Coaching Staff

- **Dazed or stunned appearance.**
- **Confusion about assignment or position.**
- **Forgetfulness.**
- **Uncertainty of game, score, or opponent.**
- **Clumsy movements.**
- **Slow response to questions.**
- **Mood, behavior or personality changes.**
- **Can't recall events prior to or after hit or fall.**

Symptoms Reported by Athlete

- **Headache or "pressure" in head.**
- **Nausea.**
- **Balance problems or dizziness.**
- **Double or blurry vision.**
- **Sensitivity to light or noise.**
- **Feeling sluggish, hazy, foggy or groggy.**
- **Concentration or memory problems.**
- **Confusion.**
- **Emotions of "not feeling right" or "feeling down".**

When in doubt, sit them out!

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

1. Remove the athlete from play.
2. Ensure the athlete is evaluated by an appropriate health-care professional.
3. Inform the athlete's parents/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 **has given written clearance** that the athlete is symptom-free and may return to activity.

The signs and symptoms associated with 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 or longer. However, until an athlete is evaluated by an appropriate health-care professional, they should be closely watched following a suspected concussion and should not be left alone.

Athletes should never try to "tough out" a concussion. Teammates, parents/guardians, 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 or courage to athletes who play despite having concussion signs and/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, their reaction time and reflexes may be compromised, placing the athlete at greater risk for sustaining another head injury. A second injury that occurs before the brain has a chance to recover from the initial concussion will delay recovery and increase the chance for long-term problems. In rare cases, a repeat head injury can result in severe swelling and bleeding in the brain that can be fatal.

What Are Some Danger Signs to Look Out For?

In rare cases, a dangerous collection of blood (hematoma) may form between the brain and skull after a bump, blow, or jolt to the head or body. The pressure from this blood can squeeze the brain within the skull. Call 9-1-1 for any athlete that demonstrates any of the following signs or symptoms after a bump, blow, or jolt to the head or body for transport to the emergency department:

- One pupil larger than the other.
- Drowsiness or inability to wake up.
- A headache that gets worse and does not go away.
- Slurred speech, weakness, numbness, or decreased coordination.
- Repeated vomiting or nausea
- Convulsions or seizures (shaking or twitching).
- Unusual behavior, increased confusion, restlessness, or agitation.
- Loss of consciousness (passed out/knocked out). Even a brief loss of consciousness should be taken seriously.

Management Until Recovery

Rest

The first step in recovering from a concussion is rest. Rest is essential to help the brain heal. Athletes 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. Athletes typically require 24-48 hours of rest, though some may require a longer period of time.

Return to Learn

Following a concussion, many athletes will have difficulty in school. These problems may last from days to weeks 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 during the short period of rest (typically no more than 1-2 days) followed by a lighter school schedule for a few days, or longer, if necessary. Decreasing the stress to the brain in the early phase after a concussion may lessen symptoms and shorten the recovery time. Additional academic adjustments may include decreasing homework, allowing extra time for assignments/tests, and taking breaks during class. Such academic adjustments are best made using a team approach collaborating with teachers, counselors, and school nurses.

Return to Play
After suffering a concussion, **no athlete should return to play or practice on that same day**.

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

Once an athlete no longer has signs or symptoms of a concussion **and is cleared to return to activity by an appropriate health-care professional**, they should proceed in a step-wise fashion to allow the brain to re-adjust to exercise. In most cases, the athlete should progress no more than one step each day, and at times each step may take more than one day. **Below is an example of a return to physical activity program**:

Progressive Return to Play Protocol
Step 1: Back to Regular Activities (such as school)
To enter into the stepwise return to play protocol the athlete should first be back to regular activities (such as school) and has been cleared by their appropriate health-care professional to begin the return to play process. In most all cases, the athlete should have all concussion-related academic adjustments removed prior to beginning the Return to Sports Activity Program

Step 2: Light Aerobic Activity
Begin with light aerobic exercise only to increase heart rate. This means about 5 to 10 minutes on an exercise bike, brisk walking, or light jogging. No anaerobic activity such as weight lifting should be done at this stage.

Step 3: Moderate Activity
Continue with activities that increase an athlete's heart rate while adding movement. This includes running and skating drills.

Step 4: Non-Contact Training Activity
Add sports specific, more intense, non-contact physical activity, such as such as passing in hockey, dribbling in basketball or soccer, high-intensity stationary biking, regular weightlifting routine.

Step 5: Practice and Full Contact
The athlete may return to practice and full contact (if appropriate for the sport) in a controlled practice setting where the skills can be assessed by the coaches.

Step 6: Competition
The athlete may return to competition.

If symptoms of a concussion recur, or if concussion signs and/or behaviors are observed at any time during the return-to-play program, the athlete must discontinue all activity immediately. The athlete may need to be re-evaluated by the appropriate health-care professional or may have to return to the previous step of the return-to-activity program, as pre-determined by the appropriate health-care professional.
Summary of 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.**

3. **Any athlete diagnosed with a concussion should have written clearance from 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 as outlined above with provisions for delayed RTP based upon return of any signs or symptoms.**

References:

Halstead ME, Walter KD, Moffatt K; COUNCIL ON SPORTS MEDICINE AND FITNESS. Sport-Related Concussion in Children and Adolescents. Pediatrics. 2018 Dec;142(6). pii: e20183074. doi: 10.1542/peds.2018-3074. Epub 2018 Nov 12.

McCrory P, Meeuwisse W, Dvořák J, Aubry M, Bailes J, Broglio S, Cantu RC, Cassidy D, Echemendia RJ, Castellani RJ, Davis GA, Ellenbogen R, Emery C, Engebretsen L, Feddermann-Demont N, Giza CC, Guskiewicz KM, Herring S, Iverson GL, Johnston KM, Kissick J, Kutcher J, Leddy JJ, Maddocks D, Makdissi M, Manley GT, McCrea M, Meehan WP, Nagahiro S, Patricios J, Putukian M, Schneider KJ, Sills A, Tator CH, Turner M, Vos PE. Consensus statement on concussion in sport-the 5th international conference on concussion in sport held in Berlin, October 2016. Br J Sports Med. 2017 Jun;51(11):838-847. doi: 10.1136/bjsports-2017-097699. Epub 2017 Apr 26.

Additional Resources:

Brain 101 – The Concussion Playbook.

Concussion in Sports- What you need to know.
https://nfhslearn.com/courses/61151/concussion-in-sports

Heads Up: Concussion in High School Sports
http://www.cdc.gov/concussion/headsup/high_school.html

REAP Concussion Management Program.
http://www.rockymountainhospitalforchildren.com/sports-medicine/concussion-management/reap-guidelines.htm

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April 2017
October 2013
January 2011
April 2009
October 2008
October 2005

National Federation of State
High School Associations

A PARENT'S / GUARDIAN'S GUIDE TO CONCUSSION

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

What is a concussion?

- A concussion is a traumatic brain injury that interferes with the normal function of the brain. Concussions were previously referred to as a "ding" or a "bell-ringer" but this undermines the seriousness of problem. Any suspected concussion must be taken very seriously. An athlete does not need to lose consciousness (be "knocked-out") to suffer a concussion. In fact, less than 5% of concussed athletes suffer a loss of consciousness.

Concussion Facts

- Structural injuries, like torn ligaments and broken bones, can be seen on an x-ray or on scans like an MRI. On the other hand, a concussion is a disruption of how the brain works, or its function, and not in its structure. That is why CAT scans and MRIs are typically normal. The injury affects the way the brain works, not how it looks.
- It is estimated that over 300,000 high school athletes across the United States suffer a concussion each year. (Data from the NFHS Injury Surveillance System, "High School RIO™")
- Concussions can happen in any sport. While they are more common in sports that involve collisions, athletes in all sports are at risk for a concussion. When researchers looked at 14 different high school sports, they found that over two-thirds of concussions result from contact with another athlete and the second leading cause of concussion, is player-to-surface contact. This includes falling and hitting the ground.
- An athlete may report many physical, behavioral, and cognitive symptoms. Physical symptoms include headaches, nausea, vomiting, dizziness, and sleep changes. Some behavioral changes include irritability, anxiety, and depression. Cognitive symptoms are changes in the way we think and include feeling sluggish, hazy, or foggy, difficulty concentrating or memory problems, and confusion.
- Many symptoms appear immediately after the injury, while others may develop over the next several days. The symptoms can interfere with normal daily life in addition to difficulty with school, work, and social life.
- Concussion symptoms may last from a few days to several months. It is important to remember that each student athlete responds and recovers differently.
- Athletes should not return to sports or activities that will put them at risk for another head injury until the concussion has completely resolved. To do so puts them at risk for worsening and prolonged symptoms and a more severe injury. While rare, a repeat concussion can also result in severe swelling and bleeding in the brain. This condition can lead to death or permanent disability.

What should I do if I think my child has had a concussion?
If your child sustains a head injury, it is good to be aware of the signs and symptoms of a concussion. If you suspect an athlete has a concussion, the athlete must be immediately removed from activity. Continuing to participate in a contact or collision sport while experiencing concussion symptoms can lead to worsening of symptoms, increased risk for further injury and sometimes death.

Parents and coaches should not make the diagnosis of a concussion. Any athlete suspected of having a concussion should be evaluated by a medical professional trained in the diagnosis and management of concussions.

When in doubt, sit them out!

All athletes who sustain a concussion need to be evaluated by an appropriate health-care professional who is experienced in concussion management. If your child's school has an athletic trainer (AT), please inform the AT of your concerns. You should also call your child's primary care provider and explain what has happened and follow the instructions you are given. Sometimes, an injury is more severe than it appears. If your child has persistent vomiting, a worsening headache, a seizure, or is acting differently, you should take your child to an emergency department for immediate attention.

What are the signs and symptoms of a concussion?

SIGNS OBSERVED BY PARENTS, ATHLETIC TRAINERS, FRIENDS, TEACHERS OR COACHES	SYMPTOMS REPORTED BY ATHLETE
• Dazed or stunned appearance. • Confusion about assignment or position. • Forgetfulness. • Uncertainty of game, score, or opponent. • Clumsy movements. • Slow response to questions.	• Headache or "pressure" in head. • Nausea • Balance problems or dizziness • Double or blurry vision • Sensitivity to light or noise • Feeling sluggish, hazy, foggy or groggy
• Mood, behavior or personality changes. • Can't recall events prior to or after hit or fall.	• Concentration or memory problems • Confusion • "Not feeling right" or "feeling down"

How can a concussion affect schoolwork?
Following a concussion, many students have difficulty in school due to difficulties with short-term memory, concentration, and organization.

In many cases after the injury, it is best to decrease the athlete's class load early in the recovery phase. This may include staying home from school for no more than 1 or 2 days, followed by academic adjustments (such as a reduced class schedule), until the athlete has fully recovered. Decreasing the stress on the brain and not allowing the athlete to push through symptoms will shorten the recovery time and ensure total resolution of symptoms. The academic adjustments are best managed by a school concussion team. Speak with the school guidance counselor, school nurse, or athletic trainer to help with this process.

When can an athlete return to play following a concussion?
After suffering a concussion, or if you suspect an athlete has a concussion, **no athlete should EVER return to play or practice on that same day**.

Concerns over athletes returning to play too quickly led lawmakers in all 50 states and the District of Columbia to pass laws stating that **no player shall return to play the day of a concussion, and the athlete must be cleared by an appropriate health-care professional before being allowed to return to play in either games or practices.** Many of these laws require players, parents and coaches to receive education on the dangers of concussion in addition to recognizing the signs and symptoms of concussion. **Click here to see what your state law requires:**
http://www.ucdenver.edu/academics/colleges/medicalschool/departments/pmr/documents/concussion_toolkit/laws/state.htm

Once an athlete no longer has symptoms of a concussion AND is cleared by an appropriate health-care professional to begin a return to play progression, the athlete must proceed with activity in a step-wise fashion in a carefully controlled and monitored environment to allow the brain and body to re-adjust to exertion. On average, the athlete will complete a new step every 24-48 hours. An example of a typical return-to-play schedule is shown below:

Return to Play Progression:

Step 1: Back to Regular Activities
To enter into the return to play protocol the athlete should first be back to regular activities (such as school) and has the cleared by their health-care professional to begin the return to play process. In most all cases, the athlete should have all concussion-related academic adjustments removed prior to beginning the Return to Play Program.

Step 2: Light Aerobic Activity
Begin with light aerobic exercise only to increase heart rate. This means about 5 to 10 minutes on an exercise bike, brisk walking, or light jogging. No anaerobic activity such as weight lifting should be done at this stage.

Step 3: Moderate Activity
Continue with activities that increase an athlete's heart rate while adding movement. This includes running and skating drills.

Step 4: Non-Contact Training Activity
Add sports specific, more intense, non-contact physical activity, such as such as passing in hockey, dribbling in basketball or soccer, high-intensity stationary biking, regular weightlifting routine.

Step 5: Practice and Full Contact
The athlete may return to practice and full contact (if appropriate for the sport) in a controlled practice setting where the skills can be assessed by the coaches.

Step 6: Competition
The athlete may return to competition.

If symptoms occur at any step, the athlete should immediately stop activity and consult with a qualified appropriate health-care professional before moving on to the next step.

What can I do?

- Both you and your child should learn to recognize the "Signs and Symptoms" of concussion as listed above.
- Encourage your child to tell the medical and/or coaching staff if any of these signs and symptoms appear after a blow to the head or body.
- Emphasize to administrators, coaches, physicians, athletic trainers, teachers and other parents your concerns and expectations about concussion and safe play.
- Encourage your child to tell the medical and coaching staff if there is suspicion that a teammate has suffered a concussion.
- Ask teachers to monitor any decrease in grades or changes in behavior in students that could indicate a concussion.
- Report concussions that occurred during the school year to appropriate school staff. This will help in monitoring injured athletes as they move to the next season's sports.

Click here for more information about returning to school after a concussion:
http://www.cdc.gov/headsup/basics/return_to_school.html

Other Frequently Asked Questions:

Why is it so important that athletes not return to play until they have completely recovered from a concussion?
Students that return to play too soon may worsen concussion symptoms, prolong the recovery time, and they also risk catastrophic consequences if they suffer another head injury. These consequences are preventable if each athlete is allowed time to recover from their concussion including completing the stepwise return-to-play protocol. No athlete should return to sport or other at-risk activity when signs or symptoms of concussion are present and recovery is ongoing.

Is a "CAT scan" or MRI needed to diagnose a concussion?
No! The diagnosis of a concussion is based upon the athlete's history of the injury and an appropriate health-care professional's physical examination and testing. CT and MRI scans are rarely needed following a

concussion since this is a functional injury and not a structural one. However, they are helpful in identifying life-threatening head and brain injuries such as skull fractures, bleeding or swelling.

What is the best treatment to help my child recover quickly from a concussion?
Treatment for concussion varies from one person to the next. Immediately after a concussion, the best treatment is physical and cognitive rest. Exposure to loud noises, bright lights, computers, tablets, video games, television and smart phones may worsen the symptoms of a concussion. You should allow your child to rest in the days following a concussion. As the symptoms lessen, an appropriate health-care professional may allow increased physical and cognitive activity, but this has to be monitored closely for a recurrence of symptoms.

There are no medications to treat concussions, but an appropriate health-care professional may prescribe medications and therapies to treat symptoms of a concussion, such as headache, dizziness, sleep changes, etc. Some athletes may require rehabilitative therapies, such as physical, occupational, vestibular, ocular or speech/cognitive. Others may require treatment for mood and behavior changes. All of these interventions are done on a personalized basis.

How long do the symptoms of a concussion usually last?
For most concussions, symptoms will usually go away within 2–3 weeks after the initial injury. You should anticipate that your child will not fully participate in sports for several weeks following a concussion. In some cases, symptoms may last longer, sometimes several months. Since recovery differs from person to person, all concussions should be carefully managed.

How many concussions can an athlete have before we should consider retiring from playing sports?
There is no "magic number" of concussions that determine when an athlete should give up playing sports that put one at high risk for a concussion. The circumstances that surround each individual injury, such as how the injury occurred as well as the number and duration of symptoms following the concussion, are very important. These circumstances must be individually considered when assessing an athlete's risk for potential long-term consequences and potentially more serious brain injuries. The decision to "retire" from sports is a decision best reached after a complete evaluation by your child's primary care provider and consultation with an appropriate health-care professional who specializes in treating concussions.

I've read recently that concussions may cause long-term brain damage in athletes, especially professional football players. Is this a risk for high school athletes who have had a concussion?
Recently, increasing attention has been directed at CTE or Chronic Traumatic Encephalopathy. CTE is a *brain disease* that results from changes in the brain. These changes can affect how a person thinks, feels, acts, and moves. The cause of CTE has not been definitively established. Traumatic brain injuries, including concussions, and repeated hits to the head, called sub-concussive head impacts, may contribute to CTE.

Sub-concussive head impacts are impacts to the head that do not cause a concussion. Unlike concussions, which cause symptoms, sub-concussive head impacts do not cause symptoms. A collision while playing sports is one way a person can get a sub-concussive head impact.

Early evidence suggested that the more years a person has repeated sub-concussive head impacts or other brain injuries, the higher the chance they have of getting CTE. However, we have now learned that CTE does

not just occur in athletes. And, most people with head impacts or brain injuries will not get CTE. Furthermore, CTE has been diagnosed in people who have never had any history of brain trauma.

In light of the suggestion of a correlation between head impacts and CTE, the NFHS SMAC recommends limiting full contact during practice sessions and limiting the total number of quarters or periods played per week in sports at high risk for head impacts, such as football and ice hockey. These recommendations and guidelines were defined in the report from the July 2014 NFHS Concussion Summit Task Force. The guiding principles used to develop this report were to reasonably limit the opportunity for multiple hits to the head and to minimize concussion risk. The goal is also to maintain the integrity of the games and avoid unintended consequences. The report can be read in its entirety in the Resources section on the Sports Medicine page of the NFHS Website.

We cannot eliminate all of the risk of concussion from sports. However, we can take what we learn from science to reduce the chance for injury and set policy to ensure that students with a concussion get the care they need.

Everyone involved in high school sports plays an active role in educating others about concussion and other serious brain injuries. Please check out the Resource section on the Sports Medicine page of the NFHS Website for more information on how you can take an active role and get involved in keeping students safe, healthy and active.

Some of this information has been adapted from the CDC's "Heads Up: Concussion in High School Sports" materials by the NFHS's Sports Medicine Advisory Committee. Please go to **www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm** for more information.

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April 2013
April 2010

MSHSAA Concussion Return to Play Form

If diagnosed with a concussion, an athlete must be cleared for progression to activity by an approved healthcare provider, MD/DO/PAC/LAT/ARNP/Neuropsychologist (**Emergency Room physician cannot clear for progression**).

Athlete's Name: _____ DOB: _____ Date of Injury: _____

THIS RETURN TO PLAY IS BASED ON TODAY'S EVALUATION

Date of Evaluation: _____ Return to School On (Date): _____

The following are the return to physical activities recommendations at the present time:

- □ Diagnosed with a concussion: Cannot return to physical activity, sport or competition (must be re-evaluated).
- □ Diagnosed with a concussion: May return to sports participation under the supervision of your school's administration after completing the return to play protocol (see below).
- □ Not diagnosed with a concussion. Patient has diagnosis of _____ and MAY/MAY NOT return to play at this time.

Medical Office Information (Please Print/Stamp):

Evaluator's Name: _____ Office Phone: _____

Evaluator's Specialty: _____

Evaluator's Signature: _____

Evaluator's Address: _____

Return to Play (RTP) Procedures After a Concussion

Return to activity and play is a medical decision. Progression is individualized, must be closely supervised according to the school's policies and procedures, and will be determined on a case-by-case basis. Factors that may affect the rate of progression include: previous history of concussion, duration and type of symptoms, age of the athlete, and sport/activity in which the athlete participates. An athlete with a prior history of concussion, one who has had an extended duration of symptoms, or one who is participating in a collision or contact sport may be progressed more slowly as determined by the healthcare provider who has evaluated the athlete. After the student has not experienced symptoms attributable to the concussion for a **minimum of 24 hours** and has returned to school on a full-time basis (if school is in session), the stepwise progression below shall be followed:

Step 1: Light cardiovascular exercise.
Step 2: Running in the gym or on the field. No helmet or other equipment.
Step 3: Non-contact training drills in full equipment. Weight-training can begin.
Step 4: Full, normal practice or training (a walk-through practice does not count as a full, normal practice).
Step 5: **Full participation.** Must be cleared by MD/DO/PAC/LAT/ARNP/Neuropsychologist before returning to play.

The athlete should spend a minimum of one day at each step before advancing to the next. If concussion symptoms return with any step, the athlete must stop the activity and the treating healthcare provider must be contacted. Depending upon the specific type and severity of the symptoms, the athlete may be told to rest for 24 hours and then resume activity at a level one step below where he or she was at when the symptoms returned.

Return to Play Protocol (Steps 1-4) Completed (Date/Signature): _____

Cleared for Return to Play (Step 5) by: _____ **Date:** _____

I accept responsibility for reporting all injuries and illnesses to my school and medical staff (athletic trainer/team physician) including any signs and symptoms of a CONCUSSION.

Signature of Student Athlete: _____ **Date:** _____

May be advanced back to competition after phone conversation with the healthcare professional that evaluated the athlete (MD/DO/PAC/LAT/ARNP/Neuropsychologist) and documented above.

This form is adapted from the Acute Concussion Evaluation (ACE) care plan on the CDC website (www.cdc.gov/injury). All medical providers are encouraged to review this site if they have questions regarding the latest information on the evaluation and care of the scholastic athlete following a concussion injury.

Missouri State High School Activities Association

Centennial

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MSHSAA Centennial National Anthem

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