

SUMMARY REPORT

MICHIGAN HIGH SCHOOL ATHLETIC ASSOCIATION HEAD INJURY REPORTING SYSTEM

2023-2024 School Year

I. Introduction & Methodology

1.1 Overview

Promotion of student-athlete health and safety is a core value of interscholastic athletics and one of the guiding principles of the Michigan High School Athletic Association in its mission to increase participation and raise the quality of the experience for all involved in school sports in the state of Michigan. Few issues regarding the health of young student-athletes and the safety of school sports have generated as much concern as head trauma and concussions. Although equipment advancements, increases in coaches' education, and safety-oriented changes to practice policies and game rules have made school sports safer than they have ever been, precise data on the frequency and severity of head injuries incurred during interscholastic athletic events is limited. Beginning in the 2015-16 school year, the MHSAA required that all head injuries sustained during MHSAA-sponsored activities be reported to the MHSAA through an online reporting system. The data generated from the MHSAA Head Injury Reporting System will establish a baseline, eventually allowing the MHSAA to determine progress year-to-year in Michigan school sports in this critical area of health and safety.

1.2 Aims

The specific objectives of the MHSAA Head Injury Reporting System are:

- A. Determine the incidence (total number) of head injuries sustained by athletes participating in MHSAA-sponsored activities.
- B. Calculate and compare head injury prevalence rates using head injury report counts and participation data for MHSAA-sponsored activities.
- C. Provide detailed information regarding head injuries sustained during MHSAA-sponsored activities, including athlete demographics, the circumstances of the injury event (date, practice or game, time during practice or game of injury, protective equipment worn, cause of injury event, initial examiner, etc.) as well as subsequent clearance/return to activity after the injury.
- D. Use the collected data to identify any patterns across variables.

1.3 Design

Beginning with the 2015-16 school year, head injury reporting became mandatory for MHSAA member schools. Under the MHSAA Concussion Protocol, **member schools must complete and submit an online report designated by the MHSAA to record and track head injury events when they occur in all levels of all sports during the season in practices and competitions.** The reporting mechanism developed by the MHSAA is identified in this report as the MHSAA Head Injury Reporting System.

Reporting by member schools requires completing two basic online report forms; the first report is completed after the initial head injury event, and the second is completed after the student has received clearance to return to activity after the head injury or the season in which the injury occurred has ended.

Definitions

The MHSAA Concussion Protocol and Head Injury Reporting System defined a head injury as:

An injury that occurred as a result of participation during an in-season practice, scrimmage, or game in one of the 28 sports for which the MHSAA provides a post-season tournament – namely baseball, boys and girls basketball, boys and girls bowling, girls competitive cheer, boys and girls cross country, football (11-player and 8-player), boys and girls golf, girls gymnastics, ice hockey, boys and girls alpine skiing, boys and girls lacrosse, boys and girls soccer, softball, boys and girls swimming & diving, boys and girls tennis, boys and girls track & field, volleyball, and wrestling – **and** – required the athlete be withheld from activity after exhibiting signs, symptoms, or behaviors consistent with a concussion (such as loss of consciousness, headache, dizziness, confusion or balance problems).

The MHSAA Concussion Protocol and Head Injury Reporting System defined clearance as:

Written authorization from an M.D., D.O., Nurse Practitioner, or Physician's Assistant to return to unrestricted activity.

Population

All male and female students in grades 9-12 of MHSAA member schools participating in MHSAA-sponsored activities during the 2023-24 school year.

The MHSAA is an association of approximately 1500 individual public, private and parochial high schools and junior high/middle schools. At the start of the 2023-24 school year, member schools include 753 high schools of various enrollments and resources (188 schools with enrollment of 807 students or above, 188 schools with enrollment between 806-380 students, 189 schools with enrollment between 379-177 students, and 188 schools with enrollment of 176 students or below) and 800+ member junior/middle schools*.

*Junior high/middle school head injury data is not included in this report. Injuries to 6th, 7th, and 8th graders participating on high school teams (allowable under specific circumstances for schools and cooperative programs with fewer than 100 students) were included.

1.4 Data Collection

As MHSAA member schools vary widely with respect to school personnel and resources (not all schools employ an athletic trainer or even a full-time athletic administrator), the MHSAA Head Injury Reporting System was designed for use by athletic trainers, school administrators, and coaches. The system was accessed through login to MHSAA.com. Only users identified within the system as an athletic trainer, school administrator (i.e., athletic director, athletic department secretary, principal, or superintendent), or coach had the ability to access the online system and submit and review reports for the school(s) with which they are associated. The MHSAA Concussion Protocol does not specifically define who at the school must complete and submit the report, nor does it specify a time frame to submit the report after a head injury event – local schools were left to make those decisions and create their own reporting protocol based on their personnel and resources. However, reports were procured by the end of each season.

The MHSAA Head Injury Reporting System process consisted of two parts: 1) an initial head injury report and 2) a subsequent follow-up report. After a head injury event, the school was required to complete and submit an initial head injury report. This initial report was an online form designed to collect general information about the student (i.e., grade, gender, level, sport) and the injury event, including event date, whether the injury

event occurred in practice or game, time of injury event during practice or game, protective equipment worn on the head at the time of the event, cause of the event (i.e., person to person contact, person to object contact, person to ground contact, or unknown), surface type, initial examiner, and removal from play decision.)

After the initial head injury report was submitted, the report was assigned a unique seven-digit ID code and was saved in a report listing. This served as an electronic record of the head injury reports submitted by the school into the system and where the school accessed and completed a follow-up report (details forthcoming). In addition to being saved in the report list, a PDF file of the report containing the ID code was generated and sent via email to the school. No personally identifiable information was included in the report in order to protect student privacy. Schools were instructed to print the PDF copy and record the injured student's name or student ID number to link the report with the specific student so that report could be referenced for completion of the second part of the reporting process: the follow-up report.

The final part of the reporting process required the completion of a follow-up report. The follow-up is a second online report form linked to the initial head injury report designed to collect general information regarding the student's return to activity after the head injury, including the official diagnosis of the head injury event, the date the student was authorized to return to activity, medical examiner authorizing a return to activity, facility in which the student was seen by the authorizing medical examiner, conditions to return, and missed school as a result of the injury event. The follow-up report was to be completed once the student received authorization to return to activity or the season ended.

1.5 Data Management

Initial head injury reports were reviewed by members of the MHSAA staff daily. The school was contacted if a clear reporting error or anomaly was identified during review. As schools were not allowed to edit reports once submitted, all changes or removal of reports were handled by the MHSAA staff.

Follow-up reports were also reviewed on a weekly basis. Schools were contacted approximately three weeks after the reported injury date and then each week in the two to three weeks prior to the end of the season. If the head injury report remained unresolved, reminders were sent to complete the follow-up report once the student received appropriate clearance or the season in which the injury occurred ended.

Head injury reports not diagnosed as concussions, and confirmed as no concussion in the follow-up report were marked and excluded from this report. Head injury reports with no follow-up report completed were included, however.

Schools with no head injury reports for a season (Fall, Winter, and Spring) were required to report this at the conclusion of each season by attesting to this information in the Head Injury Reporting System. Follow-up continued each season with all schools who had not reported concussion or zero concussion until data was received by no less than 99% of MHSAA member high schools.

1.6 Data Analysis

The data contained in this report is largely a summary of the data gathered by the MHSAA Head Injury Reporting System by sport.

Head injury prevalence rates were calculated by dividing head injury reports count by participation. For instance:

$$\text{Girls Soccer Head Injury Prevalence Rate} = \frac{\text{\# girls soccer head injury reports}}{\text{girls soccer participation \#}}$$

In order to more easily compare head injury prevalence rates between sports, the head injury prevalence rate was also expressed per 1,000 participants. Head injury prevalence rate per 1,000 participants was found by placing the head injury prevalence ratio (injury reports/participation) on one side of an equation and placing the ratio (X / 1,000 participants) on the other side of the equation and solving algebraically for X. Essentially, the head injury prevalence rate per 1,000 participants for each sport was found by multiplying the head injury prevalence rates by 1,000 and then rounding to the nearest whole number.

II. Overall Head Injury Reports

Table 2.1 Reported Head Injuries by Sport, MHSAA Head Injury Reporting System, 2023-24 School Year

Baseball	Varsity	24	Boys Golf	Varsity	1	Softball	Varsity	67
	Junior Varsity	16		Junior Varsity	0		Junior Varsity	45
	Freshman	1		Freshman	0		Freshman	1
	TOTAL	41		TOTAL	1		TOTAL	113
Boys Basketball	Varsity	81	Girls Golf	Varsity	0	Boys Swimming & Diving	Varsity	7
	Junior Varsity	47		Junior Varsity	0		Junior Varsity	0
	Freshman	28		Freshman	0		Freshman	0
	TOTAL	156		TOTAL	0		TOTAL	7
Girls Basketball	Varsity	129	Girls Gymnastics	Varsity	2	Girls Swimming & Diving	Varsity	22
	Junior Varsity	101		Junior Varsity	0		Junior Varsity	0
	Freshman	24		Freshman	0		Freshman	0
	TOTAL	254		TOTAL	2		TOTAL	22
Boys Bowling	Varsity	0	Ice Hockey	Varsity	72	Boys Tennis	Varsity	1
	Junior Varsity	0		Junior Varsity	6		Junior Varsity	1
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	0		TOTAL	78		TOTAL	2
Girls Bowling	Varsity	0	Boys Lacrosse	Varsity	62	Girls Tennis	Varsity	0
	Junior Varsity	0		Junior Varsity	21		Junior Varsity	1
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	0		TOTAL	83		TOTAL	1
Girls Competitive Cheer	Varsity	96	Girls Lacrosse	Varsity	25	Boys Track & Field	Varsity	5
	Junior Varsity	18		Junior Varsity	11		Junior Varsity	0
	Freshman	1		Freshman	0		Freshman	0
	TOTAL	115		TOTAL	36		TOTAL	5
Boys Cross Country	Varsity	3	Boys Skiing	Varsity	3	Girls Track & Field	Varsity	11
	Junior Varsity	0		Junior Varsity	0		Junior Varsity	0
	Freshman	0		Freshman	0		Freshman	0
	TOTAL	3		TOTAL	3		TOTAL	11
Girls Cross Country	Varsity	4	Girls Skiing	Varsity	1	Volleyball	Varsity	85
	Junior Varsity	0		Junior Varsity	0		Junior Varsity	50
	Freshman	0		Freshman	0		Freshman	22
	TOTAL	4		TOTAL	1		TOTAL	157
11-Player Football	Varsity	531	Boys Soccer	Varsity	136	Wrestling	Varsity	209
	Junior Varsity	514		Junior Varsity	51		Junior Varsity	48
	Freshman	179		Freshman	4		Freshman	0
	TOTAL	1224		TOTAL	191		TOTAL	257
8-Player Football	Varsity	52	Girls Soccer	Varsity	177			
	Junior Varsity	19		Junior Varsity	78			
	Freshman	0		Freshman	4			
	TOTAL	71		TOTAL	259			
						TOTAL REPORTS		3097

Table 2.2 Head Injury Prevalence Rates by Sport, MHSAA Head Injury Reporting System, 2023-24 School Year

SPORT	Boys*				Girls			
	PARTICIPANTS	HEAD INJURY REPORTS	HEAD INJURY REPORT PREVALENCE RATE	HEAD INJURY REPORTS PER THOUSAND PARTICIPANTS	PARTICIPANTS	HEAD INJURY REPORTS	HEAD INJURY REPORT PREVALENCE RATE	HEAD INJURY REPORTS PER THOUSAND PARTICIPANTS
Baseball	16,309	41	0.25%	3	-	-	-	-
Basketball	20,199	156	0.77%	8	13,113	254	1.94%	19
Bowling	4,292	0	0.00%	0	2,767	0	0.00%	0
Competitive Cheer	-	-	-	-	6,172	115	1.86%	19
Cross Country	7,886	3	0.04%	0	6,729	4	0.06%	1
Football - 11-player	32,574	1,224	3.76%	38	-	-	-	-
8-player	2,600	71	2.73%	27	-	-	-	-
Golf	7,222	1	0.01%	0	3,936	0	0.00%	0
Gymnastics	-	-	-	-	529	2	0.38%	4
Ice Hockey	3,128	78	2.49%	25	-	-	-	-
Lacrosse	5,236	83	1.59%	16	3,245	36	1.11%	11
Skiing	822	3	0.36%	4	786	1	0.13%	1
Soccer	13,953	191	1.37%	14	11,829	259	2.19%	22
Softball	-	-	-	-	11,544	113	0.98%	10
Swimming & Diving	4,038	7	0.17%	2	4,726	22	0.47%	5
Tennis	5,945	2	0.03%	0	8,911	1	0.01%	0
Track & Field	23,888	5	0.02%	0	17,325	11	0.06%	1
Volleyball	-	-	-	-	19,119	157	0.82%	8
Wrestling	11,814	257	2.18%	22	-	-	-	-

*Boys participation and head injury data includes both males AND females playing on primarily male teams.

Table 2.3 Head Injuries by Grade - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
7th	0	0.0%	0	0.0%	0	0.0%
8th	3	0.1%	3	0.3%	6	0.2%
9th	615	29.5%	281	27.7%	896	28.9%
10th	587	28.2%	304	30.0%	891	28.8%
11th	451	21.6%	227	22.4%	678	21.9%
12th	428	20.5%	198	19.5%	626	20.2%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.4 Head Injuries by Level of Competition - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Freshman	211	10.1%	53	5.2%	264	8.5%
Junior Varsity	714	34.3%	313	30.9%	1027	33.2%
Varsity	1159	55.6%	647	63.9%	1806	58.3%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.5 Head Injuries by Type of Exposure - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Practice	640	30.7%	353	34.8%	993	32.1%
Competition	1444	69.3%	660	65.2%	2104	67.9%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.6 Head Injuries by Time during Practice or Competition of Injury Event - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Start of practice	58	9.1%	34	9.6%	92	9.3%
Middle of practice	351	54.8%	207	58.6%	558	56.2%
End of practice	231	36.1%	112	31.7%	343	34.5%
PRACTICE TOTAL	640	100.0%	353	100.0%	993	100.0%
Start of competition	155	10.7%	88	13.3%	243	11.5%
Middle of competition	743	51.5%	371	56.2%	1114	52.9%
End of competition	546	37.8%	201	30.5%	747	35.5%
COMPETITION TOTAL	1444	100.0%	660	100.0%	2104	100.0%

Table 2.7 Activity Type for All Head Injury Events during Practice – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
During a drill	453	70.8%	277	78.5%	730	73.5%
During simulated competition-scrimmage	176	27.5%	64	18.1%	240	24.2%
Not specified	11	1.7%	12	3.4%	23	2.3%
TOTAL	640	100.0%	353	100.0%	993	100.0%

Table 2.8 Injury Occurred While Playing on Offense, Defense or Special Teams for All Head Injury Events during Practice – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Offense	439	21.1%	97	9.6%	536	17.3%
Defense	395	19.0%	181	17.9%	576	18.6%
Special Teams	81	3.9%	2	0.2%	83	2.7%
Unknown	734	35.2%	252	24.9%	986	31.8%
Not Applicable	435	20.9%	481	47.5%	916	29.6%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.9 Head Injuries by Cause of Injury Event - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Person to person contact	1239	59.5%	376	37.1%	1615	52.1%
Person to object contact (e.g. wall, equipment)	164	7.9%	354	34.9%	518	16.7%
Person to playing surface contact	452	21.7%	220	21.7%	672	21.7%
Uncertain as to the cause of the event	229	11.0%	63	6.2%	292	9.4%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.10 Head Injuries by Initial Examiner - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Athletic trainer	1036	49.7%	429	42.3%	1465	47.3%
Coach	190	9.1%	161	15.9%	351	11.3%
Sideline emergency personnel	11	0.5%	1	0.1%	12	0.4%
Other appropriate health care professional	11	0.5%	8	0.8%	19	0.6%
DO	3	0.1%	1	0.1%	4	0.1%
MD	13	0.6%	8	0.8%	21	0.7%
PA	3	0.1%	3	0.3%	6	0.2%
NP	4	0.2%	3	0.3%	7	0.2%
Athletic director	8	0.4%	3	0.3%	11	0.4%
Not examined at time of suspected head injury	455	21.8%	217	21.4%	672	21.7%
Multiple examiners	350	16.8%	179	17.7%	529	17.1%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.11 Athlete Removal from Activity at the Time of Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	1529	73.4%	744	73.4%	2273	73.4%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	24	1.2%	13	1.3%	37	1.2%
NOT removed from activity at the time of the injury event*	531	25.5%	256	25.3%	787	25.4%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 2.12 Athletes Reporting Previous Concussion after Head Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Reported at least one previous concussion	380	18.2%	168	16.6%	548	17.7%
No reported previous concussions	1704	81.8%	845	83.4%	2549	82.3%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.13 Most Recent Concussion for Athletes Reporting Previous Concussion after Head Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Within last month	19	5.0%	11	6.5%	30	5.5%
Within one to six months	46	12.1%	26	15.5%	72	13.1%
Within six months to one year	82	21.6%	30	17.9%	112	20.4%
Over one year	233	61.3%	101	60.1%	334	60.9%
TOTAL	380	100.0%	168	100.0%	548	100.0%

Table 2.14 Number of Previous Concussions for Athletes Reporting Previous Concussion after Head Injury Event – All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
1 concussion	263	69.2%	113	67.3%	376	68.6%
2 concussions	65	17.1%	31	18.5%	96	17.5%
3 concussions	23	6.1%	5	3.0%	28	5.1%
≥4 concussions	14	3.7%	4	2.4%	18	3.3%
Not specified	15	3.9%	15	8.9%	30	5.5%
TOTAL	380	100.0%	168	100.0%	548	100.0%

Table 2.15 Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Event Occurred - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Received written authorization to return by the end of season	1709	82.0%	824	81.3%	2533	81.8%
Did not receive written authorization to return by the end of season	357	17.1%	149	14.7%	506	16.3%
Follow-up Report not completed	18	0.9%	40	3.9%	58	1.9%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.16 Head Injuries by Medical Examiner Authorizing Return to Activity - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
MD	867	41.6%	405	40.0%	1272	41.1%
DO	351	16.8%	147	14.5%	498	16.1%
PA	192	9.2%	95	9.4%	287	9.3%
NP	299	14.3%	177	17.5%	476	15.4%
Medical examiner data not available*	375	18.0%	189	18.7%	564	18.2%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.17 Head Injuries by Facility where Medical Examiner Authorized Return to Activity - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Hospital	69	3.3%	26	2.6%	95	3.1%
Urgent or Ready Care business	196	9.4%	101	10.0%	297	9.6%
Primary care physician or pediatrician's office	1068	51.2%	556	54.9%	1624	52.4%
Neurologist's office	114	5.5%	40	3.9%	154	5.0%
Team doctor	262	12.6%	101	10.0%	363	11.7%
Medical facility data not available*	375	18.0%	189	18.7%	564	18.2%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.18 Head Injuries by Clearance Return to Activity Conditions - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
Unconditional return	1546	74.2%	756	74.6%	2302	74.3%
Conditions to return	163	7.8%	68	6.7%	231	7.5%
Return to activity data not available*	375	18.0%	189	18.7%	564	18.2%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.19 Head Injuries by Missed School Days after Injury Event Date - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
0 Days	1179	56.6%	509	50.2%	1688	54.5%
1-2 Days	393	18.9%	219	21.6%	612	19.8%
3-6 Days	118	5.7%	84	8.3%	202	6.5%
7-9 Days	9	0.4%	7	0.7%	16	0.5%
10-20 Days	7	0.3%	4	0.4%	11	0.4%
≥21 Days	3	0.1%	1	0.1%	4	0.1%
Missed school data not available*	375	18.0%	189	18.7%	564	18.2%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

Table 2.20 Head Injuries by Time between Injury Event Date and Authorization Date to Return - All MHSAA High School Sports Included, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys		Girls		Overall	
	n	%	n	%	n	%
1-2 Days	30	1.4%	11	1.1%	41	1.3%
3-5 Days	150	7.2%	66	6.5%	216	7.0%
6-10 Days	522	25.0%	265	26.2%	787	25.4%
11-15 Days	564	27.1%	234	23.1%	798	25.8%
16-20 Days	187	9.0%	97	9.6%	284	9.2%
≥21 Days	227	10.9%	135	13.3%	362	11.7%
Data not available**	404	19.4%	205	20.2%	609	19.7%
TOTAL	2084	100.0%	1013	100.0%	3097	100.0%

58 Missing Follow-up Reports*

506 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

45 Data entry errors**

III. Baseball Head Injury Reports

Table 3.1 Head Injury Prevalence Rate for Baseball, MHSAA Head Injury Reporting System, 2023-24 School Year

Baseball Participation	16,309
All Baseball Head Injuries	41
Baseball Head Injury Prevalence Rate (reported head injuries/total participants)	0.25%
Baseball Head Injury Prevalence Rate Per Thousand Participants	3

Table 3.2 Baseball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	24	58.5%
Junior Varsity	16	39.0%
Freshman	1	2.4%
TOTAL	41	100.0%

Table 3.3 Baseball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	18	43.9%
Competition	23	56.1%
TOTAL	41	100.0%

Table 3.4 Baseball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	3	16.7%
Middle of practice	10	55.6%
End of practice	5	27.8%
PRACTICE TOTAL	18	100.0%
Start of competition	2	8.7%
Middle of competition	12	52.2%
End of competition	9	39.1%
COMPETITION TOTAL	23	100.0%

Table 3.5 Activity Type for All Baseball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	16	88.9%
During simulated competition-scrimmage	2	11.1%
Not specified	0	0.0%
TOTAL	18	100.0%

Table 3.6, Injury Occurred While Playing on Offense, Defense, or Special Teams for Baseball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	6	14.6%
Defense	17	41.5%
Special Teams	0	0.0%
Unknown	4	9.8%
Not Applicable	14	34.1%
TOTAL	41	100.0%

Table 3.7 Baseball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	14	34.1%
Person to object contact (e.g. wall, equipment)	23	56.1%
Person to playing surface contact	3	7.3%
Uncertain as to the cause of the event	1	2.4%
TOTAL	41	100.0%

Table 3.8 Person to Playing Surface Contact Baseball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	1	33.3%
Artificial turf	2	66.7%
TOTAL	3	100.0%

Table 3.9 Baseball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	12	29.3%
Coach	10	24.4%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	2.4%
DO	0	0.0%
MD	2	4.9%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	5	12.2%
Multiple examiners	11	26.8%
TOTAL	41	100.0%

Table 3.10 Baseball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	35	85.4%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	6	14.6%
TOTAL	41	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 3.11 Baseball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	12	29.3%
No reported previous concussions	29	70.7%
TOTAL	41	100.0%

Table 3.12 Most Recent Concussion for Baseball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	5	41.7%
Over one year	7	58.3%
TOTAL	12	100.0%

Table 3.13 Number of Previous Concussions for Baseball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	9	75.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	1	8.3%
Not specified	2	16.7%
TOTAL	12	100.0%

Table 3.14 Baseball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	37	90.2%
Did not receive written authorization to return by the end of season	2	4.9%
Follow-up Report not completed	2	4.9%
TOTAL	41	100.0%

Table 3.15 Baseball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	20	48.8%
DO	6	14.6%
PA	2	4.9%
NP	9	22.0%
Medical examiner data not available*	4	9.8%
TOTAL	41	100.0%

Table 3.16 Baseball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	1	2.4%
Urgent or Ready Care business	3	7.3%
Primary care physician or pediatrician's office	31	75.6%
Neurologist's office	0	0.0%
Team doctor	2	4.9%
Medical facility data not available*	4	9.8%
TOTAL	41	100.0%

Table 3.17 Baseball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	34	82.9%
Conditions to return	3	7.3%
Return to activity data not available*	4	9.8%
TOTAL	41	100.0%

Table 3.18 Baseball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	21	51.2%
1-2 Days	9	22.0%
3-6 Days	6	14.6%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	1	2.4%
Missed school data not available*	4	9.8%

TOTAL	41	100.0%
--------------	-----------	---------------

Table 3.19 Baseball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	5	12.2%
6-10 Days	16	39.0%
11-15 Days	9	22.0%
16-20 Days	0	0.0%
≥21 Days	7	17.1%
Data not available**	4	9.8%
TOTAL	41	100.0%

2 Missing Follow-up Reports*

2 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

IV. Boys Basketball Head Injury Reports

Table 4.1 Head Injury Prevalence Rate for Boys Basketball, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Basketball Participation	20,199
All Reported Boys Basketball Head Injuries	156
Boys Basketball Head Injury Prevalence Rate (reported head injuries/total participants)	0.77%
Boys Basketball Head Injury Prevalence Rate Per Thousand Participants	8

Table 4.2 Boys Basketball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	81	51.9%
Junior Varsity	47	30.1%
Freshman	28	17.9%
TOTAL	156	100.0%

Table 4.3 Boys Basketball Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	155	99.4%
Female	1	0.6%
TOTAL	156	100.0%

Table 4.4 Boys Basketball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	49	31.4%
Competition	107	68.6%
TOTAL	156	100.0%

Table 4.5 Boys Basketball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	3	6.1%
Middle of practice	19	38.8%
End of practice	27	55.1%
PRACTICE TOTAL	49	100.0%
Start of competition	11	10.3%
Middle of competition	59	55.1%
End of competition	37	34.6%
COMPETITION TOTAL	107	100.0%

Table 4.6 Activity Type for Boys Basketball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	24	49.0%
During simulated competition-scrimmage	25	51.0%
Not specified	0	0.0%
TOTAL	49	100.0%

Table 4.7 Injury Occurred While Playing Offense, Defense, or Special Teams for Boys Basketball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	24	15.4%
Defense	28	17.9%
Special Teams	0	0.0%
Unknown	41	26.3%
Not Applicable	63	40.4%
TOTAL	156	100.0%

Table 4.8 Boys Basketball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	79	51.6%
Person to object contact (e.g. wall, equipment)	13	8.5%
Person to playing surface contact	61	39.9%
Uncertain as to the cause of the event	0	0.0%
TOTAL	153	100.0%

Table 4.9 Person to Playing Surface Contact Boys Basketball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Wooden gym floor	24	39.3%
Basketball court	17	27.9%
Gym	18	29.5%
Gym floor	2	3.3%
TOTAL	61	100.0%

Table 4.10 Boys Basketball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	64	41.0%
Coach	31	19.9%
Sideline emergency personnel	1	0.6%
Other appropriate health care professional	2	1.3%
DO	0	0.0%
MD	1	0.6%
PA	0	0.0%
NP	0	0.0%
Athletic director	1	0.6%
Not initially examined at the time of the suspected head injury	25	16.0%
Multiple examiners	31	19.9%
TOTAL	156	100.0%

Table 4.11 Athlete Removal from Activity at the Time of Injury Event – Boys Basketball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	122	78.2%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	1	0.6%
NOT removed from activity at the time of the injury event*	33	21.2%
TOTAL	156	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 4.12 Boys Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	36	23.1%
No reported previous concussions	120	76.9%
TOTAL	156	100.0%

Table 4.13 Most Recent Concussion for Boys Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	2	5.6%
Within one to six months	11	30.6%
Within six months to one year	6	16.7%
Over one year	17	47.2%
TOTAL	36	100.0%

Table 4.14 Number of Previous Concussions for Boys Basketball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	28	77.8%
2 concussions	7	19.4%
3 concussions	0	0.0%
≥4 concussions	1	2.8%
Not specified	0	0.0%
TOTAL	36	100.0%

Table 4.15 Boys Basketball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	138	88.5%
Did not receive written authorization to return by the end of season	17	10.9%
Follow-up Report not completed	1	0.6%
TOTAL	156	100.0%

Table 4.16 Boys Basketball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	61	39.1%
DO	26	16.7%
PA	22	14.1%
NP	29	18.6%
Medical examiner data not available*	18	11.5%
TOTAL	156	100.0%

Table 4.17 Boys Basketball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	8	5.1%
Urgent or Ready Care business	13	8.3%
Primary care physician or pediatrician's office	102	65.4%
Neurologist's office	6	3.8%
Team doctor	9	5.8%
Medical facility data not available*	18	11.5%
TOTAL	156	100.0%

Table 4.18 Boys Basketball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	126	80.8%
Conditions to return	12	7.7%
Return to activity data not available*	18	11.5%
TOTAL	156	100.0%

Table 4.19 Boys Basketball Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	81	51.9%
1-2 Days	42	26.9%
3-6 Days	11	7.1%
7-9 Days	3	1.9%
10-20 Days	1	0.6%
≥21 Days	0	0.0%
Missed school data not available*	18	11.5%
TOTAL	156	100.0%

Table 4.20 Boys Basketball Head Injuries by Time Between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	1	0.6%
3-5 Days	13	8.3%
6-10 Days	50	32.1%
11-15 Days	38	24.4%
16-20 Days	11	7.1%
≥21 Days	24	15.4%
Data not available**	19	12.2%
TOTAL	156	100.0%

1 Missing Follow-up Reports*

17 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

V. Girls Basketball Head Injury Reports

Table 5.1 Head Injury Prevalence Rate for Girls Basketball, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Basketball Participation	13,113
All Reported Girls Basketball Head Injuries	254
Girls Basketball Head Injury Prevalence Rate (reported head injuries/total participants)	1.94%
Girls Basketball Head Injury Prevalence Rate Per Thousand Participants	19

Table 5.2 Girls Basketball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	129	50.8%
Junior Varsity	101	39.8%
Freshman	24	9.4%
TOTAL	254	100.0%

Table 5.3 Girls Basketball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	52	20.5%
Competition	202	79.5%
TOTAL	254	100.0%

Table 5.4 Girls Basketball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	6	11.5%
Middle of practice	33	63.5%
End of practice	13	25.0%
PRACTICE TOTAL	52	100.0%
Start of competition	20	9.9%
Middle of competition	112	55.4%
End of competition	70	34.7%
COMPETITION TOTAL	202	100.0%

Table 5.5 Activity Type for Girls Basketball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	38	73.1%
During simulated competition-scrimmage	12	23.1%
Not specified	2	3.8%
TOTAL	52	100.0%

Table 5.6 Injury Occurred While Playing Offense, Defense, or Special Teams for Boys Basketball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	24	9.4%
Defense	56	22.0%
Special Teams	0	0.0%
Unknown	79	31.1%
Not Applicable	95	37.4%
TOTAL	254	100.0%

Table 5.7 Girls Basketball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	122	48.0%
Person to object contact (e.g. wall, equipment)	30	11.8%
Person to playing surface contact	87	34.3%
Uncertain as to the cause of the event	15	5.9%
TOTAL	254	100.0%

Table 5.8 Person to Playing Surface Contact Girls Basketball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Wooden gym floor	28	32.2%
Basketball court	21	24.1%
Gym floor	36	41.4%
Gymnasium	1	1.1%
Concrete	1	1.1%
TOTAL	87	100.0%

Table 5.9 Girls Basketball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	122	48.0%
Coach	35	13.8%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	2	0.8%
DO	0	0.0%
MD	3	1.2%
PA	1	0.4%
NP	1	0.4%
Athletic director	1	0.4%
Not initially examined at the time of the suspected head injury	48	18.9%
Multiple examiners	41	16.1%
TOTAL	254	100.0%

Table 5.10 Girls Basketball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	188	74.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	5	2.0%
NOT removed from activity at the time of the injury event*	61	24.0%
TOTAL	254	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 5.11 Girls Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	41	16.1%
No reported previous concussions	213	83.9%
TOTAL	254	100.0%

Table 5.12 Most Recent Concussion for Girls Basketball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	3	7.3%
Within one to six months	5	12.2%
Within six months to one year	12	29.3%
Over one year	21	51.2%
TOTAL	41	100.0%

Table 5.13 Number of Previous Concussions for Girls Basketball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	25	61.0%
2 concussions	7	17.1%
3 concussions	1	2.4%
≥4 concussions	2	4.9%
Not specified	6	14.6%
TOTAL	41	100.0%

Table 5.14 Girls Basketball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	216	85.0%
Did not receive written authorization to return by the end of season	36	14.2%
Follow-up Report not completed	2	0.8%
TOTAL	254	100.0%

Table 5.15 Girls Basketball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	118	46.5%
DO	33	13.0%
PA	24	9.4%
NP	41	16.1%
Medical examiner data not available*	38	15.0%

TOTAL	254	100.0%
--------------	------------	---------------

Table 5.16 Girls Basketball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	9	3.5%
Urgent or Ready Care business	27	10.6%
Primary care physician or pediatrician's office	145	57.1%
Neurologist's office	11	4.3%
Team doctor	24	9.4%
Medical facility data not available*	38	15.0%
TOTAL	254	100.0%

Table 5.17 Girls Basketball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	195	76.8%
Conditions to return	21	8.3%
Return to activity data not available*	38	15.0%
TOTAL	254	100.0%

Table 5.18 Girls Basketball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	129	50.8%
1-2 Days	67	26.4%
3-6 Days	17	6.7%
7-9 Days	2	0.8%
10-20 Days	1	0.4%

≥21 Days	0	0.0%
Missed school data not available*	38	15.0%
TOTAL	254	100.0%

Table 5.19 Girls Basketball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	3	1.2%
3-5 Days	21	8.3%
6-10 Days	64	25.2%
11-15 Days	56	22.0%
16-20 Days	23	9.1%
≥21 Days	43	16.9%
Data not available**	44	17.3%
TOTAL	254	100.0%

2 Missing Follow-up Reports*

36 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

6 Data entry errors**

VI. Boys Bowling Head Injury Reports

Table 6.1 Head Injury Prevalence Rate for Boys Bowling, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Bowling Participation	4,292
All Reported Boys Bowling Head Injuries	0
Boys Bowling Head Injury Prevalence Rate (reported head injuries/total participants)	0.00%
Boys Bowling Head Injury Prevalence Rate Per Thousand Participants	0

Table 6.2 Boys Bowling Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	0	0.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	0	0.0%

Table 6.3 Boys Bowling Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	0	0.0%
TOTAL	0	0.0%

Table 6.4 Boys Bowling Head Injuries by Time During Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 6.5 Activity Type for Boys Bowling Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 6.6 Boys Bowling Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	0	0.0%

Table 6.7 Person to Playing Surface Contact Boys Bowling Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Wooden floor	0	0.0%
TOTAL	0	0.0%

Table 6.8 Boys Bowling Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	0	0.0%

Table 6.9 Boys Bowling Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	0	0.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	0	0.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 6.10 Boys Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	0	0.0%
TOTAL	0	0.0%

Table 6.11 Most Recent Concussion for Boys Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 6.12 Number of Previous Concussions for Boys Bowling Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 6.13 Boys Bowling Head Injuries by Athlete Clearance to Return to Activity Before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	0	0.0%
Did not receive written authorization to return by the end of season	0	0.0%

Follow-up Report not completed	0	0.0%
TOTAL	0	0.0%

Table 6.14 Boys Bowling Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.15 Boys Bowling Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.16 Boys Bowling Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.17 Boys Bowling Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	0	0.0%

Table 6.18 Boys Bowling Head Injuries by Time Between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	0	0.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

VII. Girls Bowling Head Injury Reports

Table 7.1 Head Injury Prevalence Rate for Girls Bowling, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Bowling Participation	2,767
All Reported Girls Bowling Head Injuries	0
Girls Bowling Head Injury Prevalence Rate (reported head injuries/total participants)	0.00%
Girls Bowling Head Injury Prevalence Rate Per Thousand Participants	0

Table 7.2 Girls Bowling Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	0	0.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	0	0.0%

Table 7.3 Girls Bowling Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	0	0.0%
TOTAL	0	0.0%

Table 7.4 Girls Bowling Head Injuries by Time During Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 7.5 Activity Type for Girls Bowling Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 7.6 Girls Bowling Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	0	0.0%

Table 7.7 Person to Playing Surface Contact Girls Bowling Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Wooden floor	0	0.0%
TOTAL	0	0.0%

Table 7.8 Girls Bowling Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	0	0.0%

Table 7.9 Girls Bowling Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	0	0.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	0	0.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 7.10 Girls Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	0	0.0%
TOTAL	0	0.0%

Table 7.11 Most Recent Concussion for Girls Bowling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 7.12 Number of Previous Concussions for Girls Bowling Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 7.13 Girls Bowling Head Injuries by Athlete Clearance to Return to Activity Before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	0	0.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	0	0.0%

Table 7.14 Girls Bowling Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.15 Girls Bowling Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.16 Girls Bowling Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.17 Girls Bowling Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	0	0.0%

Table 7.18 Girls Bowling Head Injuries by Time Between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	0	0.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

VIII. Competitive Cheer Head Injury Reports

Table 8.1 Head Injury Prevalence Rate for Competitive Cheer, MHSAA Head Injury Reporting System, 2023-24 School Year

Competitive Cheer Participation	6,172
All Reported Competitive Cheer Head Injuries	115
Competitive Cheer Head Injury Prevalence Rate (reported head injuries/total participants)	1.86%
Competitive Cheer Head Injury Prevalence Rate Per Thousand Participants	19

Table 8.2 Competitive Cheer Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	96	83.5%
Junior Varsity	18	15.7%
Freshman	1	0.9%
TOTAL	115	100.0%

Table 8.3 Competitive Cheer Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	99	86.1%
Competition	16	13.9%
TOTAL	115	100.0%

Table 8.4 Competitive Cheer Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	2	2.0%
Middle of practice	54	54.5%
End of practice	43	43.4%
PRACTICE TOTAL	99	100.0%
Start of competition	5	31.3%
Middle of competition	4	25.0%
End of competition	7	43.8%
COMPETITION TOTAL	16	100.0%

Table 8.5 Activity Type for Competitive Cheer Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	74	74.7%
During simulated competition-scrimmage	23	23.2%
Not specified	2	2.0%
TOTAL	99	100.0%

Table 8.6 Competitive Cheer Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	71	61.7%
Person to object contact (e.g. wall, equipment)	3	2.6%
Person to playing surface contact	34	29.6%
Uncertain as to the cause of the event	7	6.1%
TOTAL	115	100.0%

Table 8.7 Person to Playing Surface Contact Competitive Cheer Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Cheer mat	29	85.3%
Wooden gym floor	1	2.9%
Wrestling type mat	1	2.9%
Gymnastics mat	1	2.9%
Athletic mat	1	2.9%
Indoor tile type floor	1	2.9%
TOTAL	34	100.0%

Table 8.8 Competitive Cheer Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	43	37.4%
Coach	26	22.6%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	2	1.7%
PA	0	0.0%
NP	1	0.9%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	29	25.2%
Multiple examiners	14	12.2%
TOTAL	115	100.0%

Table 8.9 Competitive Cheer Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	77	67.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	3	2.6%
NOT removed from activity at the time of the injury event*	35	30.4%
TOTAL	115	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 8.10 Competitive Cheer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	16	13.9%
No reported previous concussions	99	86.1%
TOTAL	115	100.0%

Table 8.11 Most Recent Concussion for Competitive Cheer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	1	6.3%
Within one to six months	3	18.8%
Within six months to one year	2	12.5%
Over one year	10	62.5%
TOTAL	16	100.0%

Table 8.12 Number of Previous Concussions for Competitive Cheer Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	13	81.3%
2 concussions	1	6.3%
3 concussions	0	0.0%
≥4 concussions	1	6.3%
Not specified	1	6.3%
TOTAL	16	100.0%

Table 8.13 Competitive Cheer Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	93	80.9%
Did not receive written authorization to return by the end of season	22	19.1%
Follow-up Report not completed	0	0.0%
TOTAL	115	100.0%

Table 8.14 Competitive Cheer Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	39	33.9%
DO	18	15.7%
PA	9	7.8%
NP	27	23.5%
Medical examiner data not available*	22	19.1%
TOTAL	115	100.0%

Table 8.15 Competitive Cheer Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	3	2.6%
Urgent or Ready Care business	11	9.6%
Primary care physician or pediatrician's office	65	56.5%
Neurologist's office	2	1.7%
Team doctor	12	10.4%
Medical facility data not available*	22	19.1%
TOTAL	115	100.0%

Table 8.16 Competitive Cheer Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	86	74.8%
Conditions to return	7	6.1%
Return to activity data not available*	22	19.1%
TOTAL	115	100.0%

Table 8.17 Competitive Cheer Head Injuries by Missed School Days After Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	60	52.2%
1-2 Days	16	13.9%
3-6 Days	16	13.9%
7-9 Days	0	0.0%
10-20 Days	1	0.9%
≥21 Days	0	0.0%
Missed school data not available*	22	19.1%
TOTAL	115	100.0%

Table 8.18 Competitive Cheer Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	2	1.7%
3-5 Days	6	5.2%
6-10 Days	18	15.7%
11-15 Days	20	17.4%
16-20 Days	12	10.4%
≥21 Days	32	27.8%
Data not available**	25	21.7%
TOTAL	115	100.0%

0 Missing Follow-up Reports*

22 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

3 Data entry errors**

IX. Boys Cross Country Head Injury Reports

Table 9.1 Head Injury Prevalence Rate for Boys Cross Country, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Cross Country Participation	7,886
All Reported Boys Cross Country Head Injuries	3
Boys Cross Country Head Injury Prevalence Rate (reported head injuries/total participants)	0.04%
Boys Cross Country Head Injury Prevalence Rate Per Thousand Participants	0

Table 9.2 Boys Cross Country Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	3	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	3	100.0%

Table 9.3 Boys Cross Country Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	1	33.3%
Competition	2	66.7%
TOTAL	3	100.0%

Table 9.4 Boys Cross Country Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	1	100.0%
End of practice	0	0.0%
PRACTICE TOTAL	1	100.0%
Start of competition	0	0.0%
Middle of competition	1	33.3%
End of competition	1	33.3%
COMPETITION TOTAL	2	66.7%

Table 9.5 Activity Type for Boys Cross Country Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	1	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 9.6 Boys Cross Country Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	1	33.3%
Person to object contact (e.g. wall, equipment)	1	33.3%
Person to playing surface contact	1	33.3%
Uncertain as to the cause of the event	0	0.0%
TOTAL	3	100.0%

Table 9.7 Person to Playing Surface Contact Boys Cross Country Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Ground	1	100.0%
TOTAL	1	100.0%

Table 9.8 Boys Cross Country Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	1	33.3%
Coach	1	33.3%
Sideline emergency personnel	1	33.3%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	3	100.0%

Table 9.9 Boys Cross Country Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	3	100.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	3	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 9.10 Boys Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	3	100.0%
TOTAL	3	100.0%

Table 9.11 Most Recent Concussion for Boys Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 9.12 Number of Previous Concussions for Boys Cross Country Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 9.13 Boys Cross Country Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	3	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	3	100.0%

Table 9.14 Boys Cross Country Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	2	66.7%
DO	0	0.0%
PA	0	0.0%
NP	1	33.3%
Medical examiner data not available*	0	0.0%
TOTAL	3	100.0%

Table 9.15 Boys Cross Country Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	3	100.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	3	100.0%

Table 9.16 Boys Cross Country Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	1	33.3%
Conditions to return	2	66.7%
Return to activity data not available*	0	0.0%
TOTAL	3	100.0%

Table 9.17 Boys Cross Country Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	3	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	3	100.0%

Table 9.18 Boys Cross Country Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	1	33.3%
6-10 Days	1	33.3%
11-15 Days	1	33.3%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	3	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

X. Girls Cross Country Head Injury Reports

Table 10.1 Head Injury Prevalence Rate for Girls Cross Country, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Cross Country Participation	6,729
All Reported Girls Cross Country Head Injuries	4
Girls Cross Country Head Injury Prevalence Rate (reported head injuries/total participants)	0.06%
Girls Cross Country Head Injury Prevalence Rate Per Thousand Participants	1

Table 10.2 Girls Cross Country Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	4	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	4	100.0%

Table 10.3 Girls Cross Country Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	2	50.0%
Competition	2	50.0%
TOTAL	4	100.0%

Table 10.4 Girls Cross Country Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	2	100.0%
End of practice	0	0.0%
PRACTICE TOTAL	2	100.0%
Start of competition	0	0.0%
Middle of competition	2	50.0%
End of competition	0	0.0%
COMPETITION TOTAL	2	50.0%

Table 10.5 Activity Type for Girls Cross Country Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	2	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 10.6 Girls Cross Country Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	2	50.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	1	25.0%
Uncertain as to the cause of the event	1	25.0%
TOTAL	4	100.0%

Table 10.7 Person to Playing Surface Contact Girls Cross Country Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	1	100.0%
TOTAL	1	100.0%

Table 10.8 Girls Cross Country Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	2	50.0%
Coach	1	25.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	1	25.0%
Multiple examiners	0	0.0%
TOTAL	4	100.0%

Table 10.9 Girls Cross Country Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	4	100.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	4	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 10.10 Girls Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	4	100.0%
TOTAL	4	100.0%

Table 10.11 Most Recent Concussion for Girls Cross Country Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 10.12 Number of Previous Concussions for Girls Cross Country Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 10.13 Girls Cross Country Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	4	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	4	100.0%

Table 10.14 Girls Cross Country Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	2	50.0%
DO	2	50.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	4	100.0%

Table 10.15 Girls Cross Country Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	3	75.0%
Neurologist's office	1	25.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	4	100.0%

Table 10.16 Girls Cross Country Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	3	75.0%
Conditions to return	1	25.0%
Return to activity data not available*	0	0.0%
TOTAL	4	100.0%

Table 10.17 Girls Cross Country Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	4	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	4	100.0%

Table 10.18 Girls Cross Country Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	2	50.0%
16-20 Days	1	25.0%
≥21 Days	1	25.0%
Data not available**	0	0.0%
TOTAL	4	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XI. 11-Player Football Head Injury Reports

Table 11.1 Head Injury Prevalence Rate for 11-Player Football, MHSAA Head Injury Reporting System, 2023-24 School Year

11-Player Football Participation	32,574
All Reported 11-Player Football Head Injuries	1,224
11-Player Football Head Injury Prevalence Rate (reported head injuries/total participants)	3.76%
11-Player Football Head Injury Prevalence Rate Per Thousand Participants	38

Table 11.2 11-Player Football Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	1217	99.4%
Female	7	0.6%
TOTAL	1224	100.0%

Table 11.3 11-Player Football Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	531	43.4%
Junior Varsity	514	42.0%
Freshman	179	14.6%
TOTAL	1224	100.0%

Table 11.4 11-Player Football Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	398	32.5%
Competition	826	67.5%
TOTAL	1224	100.0%

Table 11.5 11-Player Football Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	36	9.0%
Middle of practice	223	56.0%
End of practice	139	34.9%
PRACTICE TOTAL	398	100.0%
Start of competition	78	9.4%
Middle of competition	419	50.7%
End of competition	329	39.8%
COMPETITION TOTAL	826	100.0%

Table 11.6 Activity Type for 11-Player Football Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	295	74.1%
During simulated competition-scrimmage	94	23.6%
Not specified	9	2.3%
TOTAL	398	100.0%

Table 11.7 Injury Occurred While Playing Offense, Defense, or Special Teams for 11-Player Football Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	330	27.0%
Defense	273	22.3%
Special Teams	72	5.9%
Unknown	510	41.7%
Not Applicable	39	3.2%
TOTAL	1224	100.0%

Table 11.8 11-Player Football Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	857	70.0%
Person to object contact (e.g. wall, equipment)	9	0.7%
Person to playing surface contact	194	15.8%
Uncertain as to the cause of the event	164	13.4%
TOTAL	1224	100.0%

Table 11.9 Person to Playing Surface Contact 11-Player Football Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	79	40.7%
Artificial turf	109	56.2%
Football field	3	1.5%
Other	3	1.5%
TOTAL	194	100.0%

Table 11.10 11-Player Football Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	635	51.9%
Coach	76	6.2%
Sideline emergency personnel	3	0.2%
Other appropriate health care professional	6	0.5%
DO	2	0.2%
MD	7	0.6%
PA	1	0.1%
NP	3	0.2%
Athletic director	5	0.4%
Not initially examined at the time of the suspected head injury	305	24.9%
Multiple examiners	181	14.8%
TOTAL	1224	100.0%

Table 11.11 11-Player Football Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	870	71.1%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	12	1.0%
NOT removed from activity at the time of the injury event*	342	27.9%
TOTAL	1224	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 11.12 11-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	201	16.4%
No reported previous concussions	1023	83.6%
TOTAL	1224	100.0%

Table 11.13 Most Recent Concussion for 11-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	12	6.0%
Within one to six months	15	7.5%
Within six months to one year	45	22.4%
Over one year	129	64.2%
TOTAL	201	100.0%

Table 11.14 Number of Previous Concussions for 11-Player Football Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	142	70.6%
2 concussions	35	17.4%
3 concussions	13	6.5%
≥4 concussions	5	2.5%
Not specified	6	3.0%
TOTAL	201	100.0%

Table 11.15 11-Player Football Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	982	80.2%
Did not receive written authorization to return by the end of season	239	19.5%
Follow-up Report not completed	3	0.2%
TOTAL	1224	100.0%

Table 11.16 11-Player Football Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	505	41.3%
DO	198	16.2%
PA	113	9.2%
NP	166	13.6%
Medical examiner data not available*	242	19.8%
TOTAL	1224	100.0%

Table 11.17 11-Player Football Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	42	3.4%
Urgent or Ready Care business	121	9.9%
Primary care physician or pediatrician's office	578	47.2%
Neurologist's office	79	6.5%
Team doctor	162	13.2%
Medical facility data not available*	242	19.8%
TOTAL	1224	100.0%

Table 11.18 11-Player Football Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	883	72.1%
Conditions to return	99	8.1%
Return to activity data not available*	242	19.8%
TOTAL	1224	100.0%

Table 11.19 11-Player Football Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	703	57.4%
1-2 Days	208	17.0%
3-6 Days	60	4.9%
7-9 Days	6	0.5%
10-20 Days	4	0.3%
≥21 Days	1	0.1%
Missed school data not available*	242	19.8%
TOTAL	1224	100.0%

Table 11.20 11-Player Football Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	18	1.5%
3-5 Days	83	6.8%
6-10 Days	262	21.4%
11-15 Days	382	31.2%
16-20 Days	112	9.2%
≥21 Days	110	9.0%
Data not available**	257	21.0%
TOTAL	1224	100.0%

3 Missing Follow-up Reports*

239 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

15 Data entry errors**

XII. 8-Player Football Head Injuries Reports

Table 12.1 Head Injury Prevalence Rate for 8-Player Football, MHSAA Head Injury Reporting System, 2023-24 School Year

8-Player Football Participation	2,600
All Reported 8-Player Football Head Injuries	71
8-Player Football Head Injury Prevalence Rate (reported head injuries/total participants)	2.73%
8-Player Football Head Injury Prevalence Rate Per Thousand Participants	27

Table 12.2 8-Player Football Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	70	98.6%
Female	1	1.4%
TOTAL	71	100.0%

Table 12.3 8-Player Football Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	52	73.2%
Junior Varsity	19	26.8%
Freshman	0	0.0%
TOTAL	71	100.0%

Table 12.4 8-Player Football Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	9	12.7%
Competition	62	87.3%
TOTAL	71	100.0%

Table 12.5 8-Player Football Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	2	22.2%
Middle of practice	3	33.3%
End of practice	4	44.4%
PRACTICE TOTAL	9	100.0%
Start of competition	9	14.5%
Middle of competition	20	32.3%
End of competition	33	53.2%
COMPETITION TOTAL	62	100.0%

Table 12.6 Activity Type for 8-Player Football Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	6	66.7%
During simulated competition-scrimmage	3	33.3%
Not specified	0	0.0%
TOTAL	9	100.0%

Table 12.7 Injury Occurred While Playing Offense, Defense, or Special Teams for 8-Player Football Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	14	19.7%
Defense	22	31.0%
Special Teams	8	11.3%
Unknown	25	35.2%
Not Applicable	2	2.8%
TOTAL	71	100.0%

Table 12.8 8-Player Football Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	50	70.4%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	11	15.5%
Uncertain as to the cause of the event	10	14.1%
TOTAL	71	100.0%

Table 12.9 Person to Playing Surface Contact 8-Player Football Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	8	72.7%
Artificial turf	0	0.0%
Football field	2	15.5%
Other	1	14.1%
TOTAL	11	100.0%

Table 12.10 8-Player Football Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	27	38.0%
Coach	12	16.9%
Sideline emergency personnel	5	7.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
NOT initially examined at the time of the suspected head injury	11	15.5%
Multiple examiners	16	22.5%
TOTAL	71	100.0%

Table 12.11 8-Player Football Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	53	74.6%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	1	1.4%
NOT removed from activity at the time of the injury event*	17	23.9%
TOTAL	71	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 12.12 8-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	11	15.5%
No reported previous concussions	60	84.5%
TOTAL	71	100.0%

Table 12.13 Most Recent Concussion for 8-Player Football Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	2	18.2%
Within six months to one year	3	27.3%
Over one year	6	54.5%
TOTAL	11	100.0%

Table 12.14 Number of Previous Concussions for 8-Player Football Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	5	45.5%
2 concussions	2	18.2%
3 concussions	1	9.1%
≥4 concussions	0	0.0%
Not specified	3	27.3%
TOTAL	11	100.0%

Table 12.15 8-Player Football Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	63	88.7%
Did not receive written authorization to return by the end of season	8	11.3%
Follow-up Report not completed	0	0.0%
TOTAL	71	100.0%

Table 12.16 8-Player Football Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	36	50.7%
DO	7	9.9%
PA	12	16.9%
NP	8	11.3%
Medical examiner data not available*	8	11.3%
TOTAL	71	100.0%

Table 12.17 8-Player Football Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	4	5.6%
Urgent or Ready Care business	3	4.2%
Primary care physician or pediatrician's office	43	60.6%
Neurologist's office	1	1.4%
Team doctor	12	16.9%
Medical facility data not available*	8	11.3%
TOTAL	71	100.0%

Table 12.18 8-Player Football Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	54	76.1%
Conditions to return	9	12.7%
Return to activity data not available*	8	11.3%
TOTAL	71	100.0%

Table 12.19 8-Player Football Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	40	56.3%
1-2 Days	19	26.8%
3-6 Days	4	5.6%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	8	11.3%
TOTAL	71	100.0%

Table 12.20 8-Player Football Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	1	1.4%
3-5 Days	4	5.6%
6-10 Days	19	26.8%
11-15 Days	23	32.4%
16-20 Days	4	5.6%
≥21 Days	9	12.7%
Data not available**	11	15.5%
TOTAL	71	100.0%

0 Missing Follow-up Reports*

8 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

3 Data entry errors**

XIII. Boys Golf Head Injury Reports

Table 13.1 Head Injury Prevalence Rate for Boys Golf, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Golf Participation	7,222
All Boys Golf Head Injuries	1
Boys Golf Head Injury Prevalence Rate (reported head injuries/total participants)	0.01%
Boys Golf Head Injury Prevalence Rate Per Thousand Participants	0

Table 13.2 Boys Golf Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	1	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	1	100.0%

Table 13.3 Boys Golf Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	1	100.0%
TOTAL	1	100.0%

Table 13.4 Boys Golf Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	100.0%
Middle of competition	1	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 13.5 Activity Type for Boys Golf Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 13.6 Boys Golf Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	1	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	1	100.0%

Table 13.7 Person to Playing Surface Contact Boys Golf Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Grass	0	0.0%
TOTAL	0	0.0%

Table 13.8 Boys Golf Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	100.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	1	100.0%

Table 13.9 Boys Golf Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	1	100.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	1	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 13.10 Boys Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	1	100.0%
TOTAL	1	100.0%

Table 13.11 Most Recent Concussion for Boys Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 13.12 Number of Previous Concussions for Boys Golf Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 13.13 Boys Golf Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	1	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	1	100.0%

Table 13.14 Boys Golf Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	1	100.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.15 Boys Golf Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	1	100.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.16 Boys Golf Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	1	100.0%
Return to activity data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.17 Boys Golf Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	1	100.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	1	100.0%

Table 13.18 Boys Golf Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	1	100.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	1	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XIV. Girls Golf Head Injury Reports

Table 14.1 Head Injury Prevalence Rate for Girls Golf, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Golf Participation	3,936
All Reported Girls Golf Head Injuries	0
Girls Golf Head Injury Prevalence Rate (reported head injuries/total participants)	0.00%
Girls Golf Head Injury Prevalence Rate Per Thousand Participants	0

Table 14.2 Girls Golf Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	0	0.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	0	0.0%

Table 14.3 Girls Golf Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	0	0.0%
TOTAL	0	0.0%

Table 14.4 Girls Golf Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 14.5 Activity Type for Girls Golf Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 14.6 Girls Golf Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	0	0.0%

Table 14.7 Person to Playing Surface Contact Girls Golf Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
n/a	0	0.0%
TOTAL	0	0.0%

Table 14.8 Girls Golf Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	0	0.0%

Table 14.9 Girls Golf Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	0	0.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	0	0.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 14.10 Girls Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	0	0.0%
TOTAL	0	0.0%

Table 14.11 Most Recent Concussion for Girls Golf Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 14.12 Number of Previous Concussions for Girls Golf Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 14.13 Girls Golf Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	0	0.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	0	0.0%

Table 14.14 Girls Golf Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	0	0.0%

Table 14.15 Girls Golf Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	0	0.0%

Table 14.16 Girls Golf Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	0	0.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	0	0.0%

Table 14.17 Girls Golf Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	0	0.0%

Table 14.18 Girls Golf Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	0	0.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XV. Gymnastics Head Injury Reports

Table 15.1 Head Injury Prevalence Rate for Gymnastics, MHSAA Head Injury Reporting System, 2023-24 School Year

Gymnastics Participation	529
All Reported Gymnastics Head Injuries	2
Gymnastics Head Injury Prevalence Rate (reported head injuries/total participants)	0.38%
Gymnastics Head Injury Prevalence Rate Per Thousand Participants	4

Table 15.2 Gymnastics Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	2	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	2	100.0%

Table 15.3 Gymnastics Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	2	100.0%
Competition	0	0.0%
TOTAL	2	100.0%

Table 15.4 Gymnastics Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	1	50.0%
End of practice	1	50.0%
PRACTICE TOTAL	2	100.0%
Start of competition	0	0.0%
Middle of competition	0	0.0%
End of competition	0	0.0%
COMPETITION TOTAL	0	0.0%

Table 15.5 Activity Type for Gymnastics Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	1	50.0%
During simulated competition-scrimmage	1	50.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 15.6 Gymnastics Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	1	50.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	1	50.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	2	100.0%

Table 15.7 Person to Playing Surface Contact Gymnastics Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic mat	1	100.0%
TOTAL	1	100.0%

Table 15.8 Gymnastics Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	1	50.0%
Coach	1	50.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	2	100.0%

Table 15.9 Gymnastics Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	2	100.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	2	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 15.10 Gymnastics Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	2	100.0%
TOTAL	2	100.0%

Table 15.11 Most Recent Concussion for Gymnastics Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 15.12 Number of Previous Concussions for Gymnastics Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	10.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 15.13 Gymnastics Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	1	50.0%
Did not receive written authorization to return by the end of season	1	50.0%
Follow-up Report not completed	0	0.0%
TOTAL	2	100.0%

Table 15.14 Gymnastics Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	1	50.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	1	50.0%
TOTAL	2	100.0%

Table 15.15 Gymnastics Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	1	50.0%
Team doctor	0	0.0%
Medical facility data not available*	1	50.0%
TOTAL	2	100.0%

Table 15.16 Gymnastics Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	1	50.0%
Conditions to return	0	0.0%
Return to activity data not available*	1	50.0%
TOTAL	2	100.0%

Table 15.17 Gymnastics Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	1	50.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	1	50.0%
TOTAL	2	100.0%

Table 15.18 Gymnastics Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	0	0.0%
16-20 Days	1	50.0%
≥21 Days	0	0.0%
Data not available**	1	50.0%
TOTAL	2	100.0%

0 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XVI. Ice Hockey Head Injury Reports

Table 16.1 Head Injury Prevalence Rate for Ice Hockey, MHSAA Head Injury Reporting System, 2023-24 School Year

Ice Hockey Participation	3,128
All Reported Ice Hockey Head Injuries	78
Ice Hockey Head Injury Prevalence Rate (reported head injuries/total participants)	2.49%
Ice Hockey Head Injury Prevalence Rate Per Thousand Participants	25

Table 16.2 Ice Hockey Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	78	100.0%
Female	0	0.0%
TOTAL	78	100.0%

Table 16.3 Ice Hockey Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	72	92.3%
Junior Varsity	6	7.7%
Freshman	0	0.0%
TOTAL	78	100.0%

Table 16.4 Ice Hockey Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	8	10.3%
Competition	70	89.7%
TOTAL	78	100.0%

Table 16.5 Ice Hockey Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	5	62.5%
End of practice	3	37.5%
PRACTICE TOTAL	8	100.0%
Start of competition	11	15.7%
Middle of competition	39	55.7%
End of competition	20	28.6%
COMPETITION TOTAL	70	100.0%

Table 16.6 Activity Type for Ice Hockey Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	5	62.5%
During simulated competition-scrimmage	3	37.5%
Not specified	0	0.0%
TOTAL	8	100.0%

Table 16.7 Injury Occurred While Playing Offense, Defense, or Special Teams for Ice Hockey Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	17	21.8%
Defense	6	7.7%
Special Teams	0	0.0%
Unknown	34	43.6%
Not Applicable	21	26.9%
TOTAL	78	100.0%

Table 16.8 Ice Hockey Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	36	46.2%
Person to object contact (e.g. wall, equipment)	21	26.9%
Person to playing surface contact	11	14.1%
Uncertain as to the cause of the event	10	12.8%
TOTAL	78	100.0%

Table 16.9 Person to Playing Surface Contact Ice Hockey Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Ice	10	90.9%
Boards	1	9.1%
TOTAL	11	90.9%

Table 16.10 Ice Hockey Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	47	60.3%
Coach	7	9.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	2	2.6%
DO	0	0.0%
MD	2	2.6%
PA	0	0.0%
NP	1	1.3%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	7	9.0%
Multiple examiners	12	15.4%
TOTAL	78	100.0%

Table 16.11 Ice Hockey Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	69	88.5%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	1	1.3%
NOT removed from activity at the time of the injury event*	8	10.3%
TOTAL	78	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 16.12 Ice Hockey Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	23	29.5%
No reported previous concussions	55	70.5%
TOTAL	78	100.0%

Table 16.13 Most Recent Concussion for Ice Hockey Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	4	17.4%
Within six months to one year	4	17.4%
Over one year	15	65.2%
TOTAL	23	100.0%

Table 16.14 Number of Previous Concussions for Ice Hockey Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	11	47.8%
2 concussions	5	21.7%
3 concussions	5	21.7%
≥4 concussions	2	8.7%
Not specified	0	0.0%
TOTAL	23	100.0%

Table 16.15 Ice Hockey Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	74	94.9%
Did not receive written authorization to return by the end of season	3	3.8%
Follow-up Report not completed	1	1.3%
TOTAL	78	100.0%

Table 16.16 Ice Hockey Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	41	52.6%
DO	21	26.9%
PA	4	5.1%
NP	8	10.3%
Medical examiner data not available*	4	5.1%
TOTAL	78	100.0%

Table 16.17 Ice Hockey Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	2	2.6%
Urgent or Ready Care business	5	6.4%
Primary care physician or pediatrician's office	45	57.7%
Neurologist's office	4	5.1%
Team doctor	18	23.1%
Medical facility data not available*	4	5.1%
TOTAL	78	100.0%

Table 16.18 Ice Hockey Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	70	89.7%
Conditions to return	4	5.1%
Return to activity data not available*	4	5.1%
TOTAL	78	100.0%

Table 16.19 Ice Hockey Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	57	73.1%
1-2 Days	13	16.7%
3-6 Days	3	3.8%
7-9 Days	0	0.0%
10-20 Days	1	1.3%
≥21 Days	0	0.0%
Missed school data not available*	4	5.1%
TOTAL	78	100.0%

Table 16.20 Ice Hockey Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	3	3.8%
3-5 Days	6	7.7%
6-10 Days	25	32.1%
11-15 Days	20	25.6%
16-20 Days	7	9.0%
≥21 Days	11	14.1%
Data not available**	6	7.7%
TOTAL	78	100.0%

1 Missing Follow-up Reports*

3 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XVII. Boys Lacrosse Head Injury Reports

Table 17.1 Head Injury Prevalence Rate for Boys Lacrosse, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Lacrosse Participation	5,236
All Boys Lacrosse Head Injuries	83
Boys Lacrosse Head Injury Prevalence Rate (reported head injuries/total participants)	1.59%
Boys Lacrosse Head Injury Prevalence Rate Per Thousand Participants	16

Table 17.2 Boys Lacrosse Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	82	98.8%
Female	1	1.2%
TOTAL	83	100.0%

Table 17.3 Boys Lacrosse Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	62	74.7%
Junior Varsity	21	25.3%
Freshman	0	0.0%
TOTAL	83	100.0%

Table 17.4 Boys Lacrosse Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	14	16.9%
Competition	69	83.1%
TOTAL	83	100.0%

Table 17.5 Boys Lacrosse Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	1	7.1%
Middle of practice	10	71.4%
End of practice	3	21.4%
PRACTICE TOTAL	14	100.0%
Start of competition	6	8.7%
Middle of competition	36	52.2%
End of competition	27	39.1%
COMPETITION TOTAL	69	100.0%

Table 17.6 Activity Type for Boys Lacrosse Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	8	57.1%
During simulated competition-scrimmage	5	35.7%
Not specified	1	7.1%
TOTAL	14	100.0%

Table 17.7 Injury Occurred While Playing Offense, Defense, or Special Teams for Boys Lacrosse Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	24	29.3%
Defense	17	20.7%
Special Teams	0	0.0%
Unknown	29	35.4%
Not Applicable	12	14.6%
TOTAL	82	100.0%

Table 17.8 Boys Lacrosse Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	42	50.6%
Person to object contact (e.g. wall, equipment)	23	27.7%
Person to playing surface contact	9	10.8%
Uncertain as to the cause of the event	9	10.8%
TOTAL	83	100.0%

Table 17.9 Person to Playing Surface Contact Boys Lacrosse Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Artificial turf	7	77.8%
Natural grass	1	11.1%
Other	1	11.1%
TOTAL	9	22.2%

Table 17.10 Boys Lacrosse Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	47	56.6%
Coach	9	10.8%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	18	21.7%
Multiple examiners	9	10.8%
TOTAL	83	100.0%

Table 17.11 Boys Lacrosse Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	62	74.7%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	21	25.3%
TOTAL	83	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 17.12 Boys Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	22	26.5%
No reported previous concussions	61	73.5%
TOTAL	83	100.0%

Table 17.13 Most Recent Concussion for Boys Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	1	4.5%
Within one to six months	2	9.1%
Within six months to one year	6	27.3%
Over one year	13	59.1%
TOTAL	22	100.0%

Table 17.14 Number of Previous Concussions for Boys Lacrosse Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	15	68.2%
2 concussions	4	18.2%
3 concussions	2	9.1%
≥4 concussions	0	0.0%
Not specified	1	4.5%
TOTAL	22	100.0%

Table 17.15 Boys Lacrosse Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	68	81.9%
Did not receive written authorization to return by the end of season	8	9.6%
Follow-up Report not completed	7	8.4%
TOTAL	83	100.0%

Table 17.16 Boys Lacrosse Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	33	39.8%
DO	14	16.9%
PA	8	9.6%
NP	13	15.7%
Medical examiner data not available*	15	18.1%
TOTAL	83	100.0%

Table 17.17 Boys Lacrosse Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	3	3.6%
Urgent or Ready Care business	6	7.2%
Primary care physician or pediatrician's office	48	57.8%
Neurologist's office	6	7.2%
Team doctor	5	6.0%
Medical facility data not available*	15	18.1%
TOTAL	83	100.0%

Table 17.18 Boys Lacrosse Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	63	75.9%
Conditions to return	5	6.0%
Return to activity data not available*	15	18.1%
TOTAL	83	100.0%

Table 17.19 Boys Lacrosse Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	42	50.6%
1-2 Days	19	22.9%
3-6 Days	6	7.2%
7-9 Days	0	0.0%
10-20 Days	1	1.2%
≥21 Days	0	0.0%
Missed school data not available*	15	18.1%
TOTAL	83	100.0%

Table 17.20 Boys Lacrosse Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	8	9.6%
6-10 Days	29	34.9%
11-15 Days	14	16.9%
16-20 Days	7	8.4%
≥21 Days	8	9.6%
Data not available**	17	20.5%
TOTAL	83	100.0%

7 Missing Follow-up Reports*

8 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XVIII. Girls Lacrosse Head Injuries

Table 18.1 Head Injury Prevalence Rate for Girls Lacrosse, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Lacrosse Participation	3,245
All Girls Lacrosse Head Injuries	36
Girls Lacrosse Head Injury Prevalence Rate (reported head injuries/total participants)	1.11%
Girls Lacrosse Head Injury Prevalence Rate Per Thousand Participants	11

Table 18.2 Girls Lacrosse Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	25	69.4%
Junior Varsity	11	30.6%
Freshman	0	0.0%
TOTAL	36	100.0%

Table 18.3 Girls Lacrosse Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	5	13.9%
Competition	31	86.1%
TOTAL	36	100.0%

Table 18.4 Girls Lacrosse Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	1	20.0%
Middle of practice	2	40.0%
End of practice	2	40.0%
PRACTICE TOTAL	5	100.0%
Start of competition	3	9.7%
Middle of competition	19	61.3%
End of competition	9	29.0%
COMPETITION TOTAL	31	100.0%

Table 18.5 Activity Type for Girls Lacrosse Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	5	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	5	100.0%

Table 18.6 Injury Occurred While Playing Offense, Defense, or Special Teams for Girls Lacrosse Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	7	19.4%
Defense	12	33.3%
Special Teams	0	0.0%
Unknown	14	38.9%
Not Applicable	3	8.3%
TOTAL	36	100.0%

Table 18.7 Girls Lacrosse Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	5	13.9%
Person to object contact (e.g. wall, equipment)	27	75.0%
Person to playing surface contact	3	8.3%
Uncertain as to the cause of the event	1	2.8%
TOTAL	36	100.0%

Table 18.8 Person to Playing Surface Contact Girls Lacrosse Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Artificial turf	3	100.0%
TOTAL	3	0.0%

Table 18.9 Girls Lacrosse Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	19	52.8%
Coach	1	2.8%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	2.8%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	7	19.4%
Multiple examiners	8	22.2%
TOTAL	36	100.0%

Table 18.10 Girls Lacrosse Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	28	77.8%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	8	22.2%
TOTAL	36	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 18.11 Girls Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	11	30.6%
No reported previous concussions	25	69.4%
TOTAL	36	100.0%

Table 18.12 Most Recent Concussion for Girls Lacrosse Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	1	9.1%
Within one to six months	4	36.4%
Within six months to one year	3	27.3%
Over one year	3	27.3%
TOTAL	11	100.0%

Table 18.13 Number of Previous Concussions for Girls Lacrosse Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	6	54.5%
2 concussions	2	18.2%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	3	27.3%
TOTAL	11	100.0%

Table 18.14 Girls Lacrosse Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	26	72.2%
Did not receive written authorization to return by the end of season	7	19.4%
Follow-up Report not completed	3	8.3%
TOTAL	36	100.0%

Table 18.15 Girls Lacrosse Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	14	38.9%
DO	5	13.9%
PA	1	2.8%
NP	6	16.7%
Medical examiner data not available*	10	27.8%
TOTAL	36	100.0%

Table 18.16 Girls Lacrosse Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	1	2.8%
Urgent or Ready Care business	1	2.8%
Primary care physician or pediatrician's office	18	50.0%
Neurologist's office	2	5.6%
Team doctor	4	11.1%
Medical facility data not available*	10	27.8%
TOTAL	36	100.0%

Table 18.17 Girls Lacrosse Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	26	72.2%
Conditions to return	0	0.0%
Return to activity data not available*	10	27.8%
TOTAL	36	100.0%

Table 18.18 Girls Lacrosse Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	13	36.1%
1-2 Days	8	22.2%
3-6 Days	5	13.9%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	10	27.8%
TOTAL	36	100.0%

Table 18.19 Girls Lacrosse Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	2	5.6%
6-10 Days	10	27.8%
11-15 Days	4	11.1%
16-20 Days	6	16.7%
≥21 Days	4	11.1%
Data not available**	10	27.8%
TOTAL	36	100.0%

3 Missing Follow-up Reports*

7 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XIX. Boys Skiing Head Injury Reports

Table 19.1 Head Injury Prevalence Rate for Boys Skiing, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Skiing Participation	882
All Reported Boys Skiing Head Injuries	3
Boys Skiing Head Injury Prevalence Rate (reported head injuries/total participants)	0.34%
Boys Skiing Head Injury Prevalence Rate Per Thousand Participants	3

Table 19.2 Boys Skiing Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	3	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	3	100.0%

Table 19.3 Boys Skiing Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	2	66.7%
Competition	1	33.3%
TOTAL	3	100.0%

Table 19.4 Boys Skiing Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	1	50.0%
Middle of practice	1	50.0%
End of practice	0	0.0%
PRACTICE TOTAL	2	100.0%
Start of competition	0	0.0%
Middle of competition	1	100.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 19.5 Activity Type for Boys Skiing Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	1	50.0%
During simulated competition-scrimmage	1	50.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 19.6 Boys Skiing Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	1	33.3%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	2	66.7%
Uncertain as to the cause of the event	0	0.0%
TOTAL	3	100.0%

Table 19.7 Person to Playing Surface Contact Boys Skiing Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Snow/ice covered ground	2	100.0%
TOTAL	2	100.0%

Table 19.8 Boys Skiing Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	1	33.3%
Sideline emergency personnel	1	33.3%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	1	33.3%
TOTAL	3	100.0%

Table 19.9 Boys Skiing Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	3	100.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	3	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 19.10 Boys Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	1	33.3%
No reported previous concussions	2	66.7%
TOTAL	3	100.0%

Table 19.11 Most Recent Concussion for Boys Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	1	100.0%
TOTAL	1	100.0%

Table 19.12 Number of Previous Concussions for Boys Skiing Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	1	100.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 19.13 Boys Skiing Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	3	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	3	100.0%

Table 19.14 Boys Skiing Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	1	33.3%
DO	2	66.7%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	3	100.0%

Table 19.15 Boys Skiing Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	1	33.3%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	1	33.3%
Team doctor	1	33.3%
Medical facility data not available*	0	0.0%
TOTAL	3	100.0%

Table 19.16 Boys Skiing Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	3	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	3	100.0%

Table 19.17 Boys Skiing Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	1	33.3%
1-2 Days	1	33.3%
3-6 Days	1	33.3%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	3	100.0%

Table 19.18 Boys Skiing Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	1	33.3%
6-10 Days	1	33.3%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	1	33.3%
Data not available**	0	0.0%
TOTAL	3	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XX. Girls Skiing Head Injury Reports

Table 20.1 Head Injury Prevalence Rate for Girls Skiing, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Skiing Participation	786
All Reported Girls Skiing Head Injuries	1
Girls Skiing Head Injury Prevalence Rate (reported head injuries/total participants)	0.13%
Girls Skiing Head Injury Prevalence Rate Per Thousand Participants	1

Table 20.2 Girls Skiing Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	1	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	1	100.0%

Table 20.3 Girls Skiing Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	1	100.0%
TOTAL	1	100.0%

Table 20.4 Girls Skiing Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	1	100.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 20.5 Activity Type for Girls Skiing Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 20.6 Girls Skiing Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	1	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	1	100.0%

Table 20.7 Person to Playing Surface Contact Girls Skiing Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Snow/ice covered ground	0	0.0%
TOTAL	0	0.0%

Table 20.8 Girls Skiing Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	1	100.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	0	0.0%
Multiple examiners	0	0.0%
TOTAL	1	100.0%

Table 20.9 Girls Skiing Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	1	100.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	0	0.0%
TOTAL	1	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 20.10 Girls Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	1	100.0%
TOTAL	1	100.0%

Table 20.11 Most Recent Concussion for Girls Skiing Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 20.12 Number of Previous Concussions for Girls Skiing Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 20.13 Girls Skiing Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	1	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	1	100.0%

Table 20.14 Girls Skiing Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	0	0.0%
DO	1	100.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	1	100.0%

Table 20.15 Girls Skiing Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	1	100.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	1	100.0%

Table 20.16 Girls Skiing Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	1	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	1	100.0%

Table 20.17 Girls Skiing Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	1	100.0%
1-2 Days	0	0.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	1	100.0%

Table 20.18 Girls Skiing Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	1	100.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	1	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXI. Boys Soccer Head Injury Reports

Table 21.1 Head Injury Prevalence Rate for Boys Soccer, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Soccer Participation	13,953
All Reported Boys Soccer Head Injuries	191
Boys Soccer Head Injury Prevalence Rate (reported head injuries/total participants)	1.37%
Boys Soccer Head Injury Prevalence Rate Per Thousand Participants	14

Table 21.2 Boys Soccer Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	190	99.5%
Female	1	0.5%
TOTAL	191	100.0%

Table 21.3 Boys Soccer Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	136	71.2%
Junior Varsity	51	26.7%
Freshman	4	2.1%
TOTAL	191	100.0%

Table 21.4 Boys Soccer Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	22	11.5%
Competition	169	88.5%
TOTAL	191	100.0%

Table 21.5 Boys Soccer Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	5	22.7%
Middle of practice	12	54.5%
End of practice	5	22.7%
PRACTICE TOTAL	22	100.0%
Start of competition	18	10.7%
Middle of competition	96	56.8%
End of competition	55	32.5%
COMPETITION TOTAL	169	100.0%

Table 21.6 Activity Type for Boys Soccer Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	17	77.3%
During simulated competition-scrimmage	5	22.7%
Not specified	0	0.0%
TOTAL	22	100.0%

Table 21.7 Injury Occurred While Playing Offense, Defense, or Special Teams for Boys Soccer Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	17	77.3%
During simulated competition-scrimmage	5	22.7%
Not specified	0	0.0%
TOTAL	22	100.0%

Table 21.8 Boys Soccer Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	78	40.8%
Person to object contact (e.g. wall, equipment)	61	31.9%
Person to playing surface contact	38	19.9%
Uncertain as to the cause of the event	14	7.3%
TOTAL	191	100.0%

Table 21.9 Person to Playing Surface Contact Boys Soccer Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	17	44.7%
Artificial turf	19	50.0%
Playing surface	2	5.3%
TOTAL	38	100.0%

Table 21.10 Boys Soccer Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	94	49.2%
Coach	18	9.4%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	1	0.5%
MD	1	0.5%
PA	1	0.5%
NP	0	0.0%
Athletic director	2	1.0%
Not initially examined at the time of the suspected head injury	31	16.2%
Multiple examiners	43	22.5%
TOTAL	191	100.0%

Table 21.11 Boys Soccer Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	143	74.9%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	7	3.7%
NOT removed from activity at the time of the injury event*	41	21.5%
TOTAL	191	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 21.12 Boys Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	29	15.2%
No reported previous concussions	162	84.8%
TOTAL	191	100.0%

Table 21.13 Most Recent Concussion for Boys Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	2	6.9%
Within one to six months	1	3.4%
Within six months to one year	7	24.1%
Over one year	19	65.5%
TOTAL	29	100.0%

Table 21.14 Number of Previous Concussions for Boys Soccer Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	23	79.3%
2 concussions	3	10.3%
3 concussions	0	0.0%
≥4 concussions	2	6.9%
Not specified	1	3.4%
TOTAL	29	100.0%

Table 21.15 Boys Soccer Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	166	86.9%
Did not receive written authorization to return by the end of season	25	13.1%
Follow-up Report not completed	0	0.0%
TOTAL	191	100.0%

Table 21.16 Boys Soccer Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	83	43.5%
DO	37	19.4%
PA	18	9.4%
NP	28	14.7%
Medical examiner data not available*	25	13.1%
TOTAL	191	100.0%

Table 21.17 Boys Soccer Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	5	2.6%
Urgent or Ready Care business	20	10.5%
Primary care physician or pediatrician's office	106	55.5%
Neurologist's office	9	4.7%
Team doctor	26	13.6%
Medical facility data not available*	25	13.1%
TOTAL	191	100.0%

Table 21.18 Boys Soccer Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	151	79.1%
Conditions to return	15	7.9%
Return to activity data not available*	25	13.1%
TOTAL	191	100.0%

Table 21.19 Boys Soccer Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	113	59.2%
1-2 Days	38	19.9%
3-6 Days	14	7.3%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	1	0.5%
Missed school data not available*	25	13.1%
TOTAL	191	100.0%

Table 21.20 Boys Soccer Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	3	1.6%
3-5 Days	16	8.4%
6-10 Days	71	37.2%
11-15 Days	33	17.3%
16-20 Days	22	11.5%
≥21 Days	18	9.4%
Data not available**	28	14.7%
TOTAL	191	100.0%

0 Missing Follow-up Reports*

25 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

3 Data entry errors**

XXII. Girls Soccer Head Injury Reports

Table 22.1 Head Injury Prevalence Rate for Girls Soccer, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Soccer Participation	11,829
All Girls Soccer Head Injuries	259
Girls Soccer Head Injury Prevalence Rate (reported head injuries/total participants)	2.19%
Girls Soccer Head Injury Prevalence Rate Per Thousand Participants	22

Table 22.2 Girls Soccer Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	177	68.3%
Junior Varsity	78	30.1%
Freshman	4	1.5%
TOTAL	259	100.0%

Table 22.3 Girls Soccer Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	26	10.0%
Competition	233	90.0%
TOTAL	259	100.0%

Table 22.4 Girls Soccer Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	3	11.5%
Middle of practice	14	53.8%
End of practice	9	34.6%
PRACTICE TOTAL	26	100.0%
Start of competition	17	7.3%
Middle of competition	143	61.4%
End of competition	73	31.3%
COMPETITION TOTAL	233	100.0%

Table 22.5 Activity Type for Girls Soccer Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	16	61.5%
During simulated competition-scrimmage	9	34.6%
Not specified	1	3.8%
TOTAL	26	100.0%

Table 22.6 Injury Occurred While Playing Offense, Defense, or Special Teams for Boys Basketball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	38	14.7%
Defense	54	20.9%
Special Teams	1	0.4%
Unknown	83	32.2%
Not Applicable	82	31.8%
TOTAL	258	100.0%

Table 22.6 Girls Soccer Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	84	32.4%
Person to object contact (e.g. wall, equipment)	118	45.6%
Person to playing surface contact	39	15.1%
Uncertain as to the cause of the event	18	6.9%
TOTAL	259	100.0%

Table 22.7 Person to Playing Surface Contact Girls Soccer Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	14	35.9%
Artificial turf	24	61.5%
Ground	1	2.6%
Unknown	0	0.0%
TOTAL	39	100.0%

Table 22.8 Girls Soccer Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	112	43.2%
Coach	34	13.1%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	3	1.2%
DO	0	0.0%
MD	1	0.4%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	65	25.1%
Multiple examiners	44	17.0%
TOTAL	259	100.0%

Table 22.9 Girls Soccer Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	189	73.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	3	1.2%
NOT removed from activity at the time of the injury event*	67	25.9%
TOTAL	259	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 22.10 Girls Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	54	20.8%
No reported previous concussions	205	79.2%
TOTAL	259	100.0%

Table 22.11 Most Recent Concussion for Girls Soccer Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	2	3.7%
Within one to six months	7	13.0%
Within six months to one year	5	9.3%
Over one year	40	74.1%
TOTAL	54	100.0%

Table 22.12 Number of Previous Concussions for Girls Soccer Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	35	64.8%
2 concussions	12	22.2%
3 concussions	4	7.4%
≥4 concussions	0	0.0%
Not specified	3	5.6%
TOTAL	54	100.0%

Table 22.13 Girls Soccer Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	192	74.1%
Did not receive written authorization to return by the end of season	45	17.4%
Follow-up Report not completed	22	8.5%
TOTAL	259	100.0%

Table 22.14 Girls Soccer Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	85	32.8%
DO	44	17.0%
PA	22	8.5%
NP	41	15.8%
Medical examiner data not available*	67	25.9%
TOTAL	259	100.0%

Table 22.15 Girls Soccer Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	4	1.5%
Urgent or Ready Care business	28	10.8%
Primary care physician or pediatrician's office	123	47.5%
Neurologist's office	9	3.5%
Team doctor	28	10.8%
Medical facility data not available*	67	25.9%
TOTAL	259	100.0%

Table 22.16 Girls Soccer Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	179	69.1%
Conditions to return	13	5.0%
Return to activity data not available*	67	25.9%
TOTAL	259	100.0%

Table 22.17 Girls Soccer Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	108	41.7%
1-2 Days	66	25.5%
3-6 Days	16	6.2%
7-9 Days	1	0.4%
10-20 Days	1	0.4%
≥21 Days	0	0.0%
Missed school data not available*	67	25.9%
TOTAL	259	100.0%

Table 22.18 Girls Soccer Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	3	1.2%
3-5 Days	12	4.6%
6-10 Days	75	29.0%
11-15 Days	58	22.4%
16-20 Days	27	10.4%
≥21 Days	15	5.8%
Data not available**	69	26.6%
TOTAL	259	100.0%

22 Missing Follow-up Reports*

45 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XXIII. Softball Head Injury Reports

Table 23.1 Head Injury Prevalence Rate for Softball, MHSAA Head Injury Reporting System, 2023-24 School Year

Softball Participation	11,544
All Softball Head Injuries	113
Softball Head Injury Prevalence Rate (reported head injuries/total participants)	0.98%
Softball Head Injury Prevalence Rate Per Thousand Participants	10

Table 23.2 Softball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	67	59.3%
Junior Varsity	45	39.8%
Freshman	1	0.9%
TOTAL	113	100.0%

Table 23.3 Softball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	48	42.5%
Competition	65	57.5%
TOTAL	113	100.0%

Table 23.4 Softball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	7	14.6%
Middle of practice	30	62.5%
End of practice	11	22.9%
PRACTICE TOTAL	48	100.0%
Start of competition	19	29.2%
Middle of competition	29	44.6%
End of competition	17	26.2%
COMPETITION TOTAL	65	100.0%

Table 23.5 Activity Type for Softball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	41	85.4%
During simulated competition-scrimmage	3	6.3%
Not specified	4	8.3%
TOTAL	48	100.0%

Table 23.6 Injury Occurred While Playing Offense, Defense, or Special Teams for Softball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	14	12.4%
Defense	43	38.1%
Special Teams	0	0.0%
Unknown	14	12.4%
Not Applicable	42	37.2%
TOTAL	113	100.0%

Table 23.7 Softball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	29	25.7%
Person to object contact (e.g. wall, equipment)	74	65.5%
Person to playing surface contact	3	2.7%
Uncertain as to the cause of the event	7	6.2%
TOTAL	113	100.0%

Table 23.8 Person to Playing Surface Contact Softball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Natural grass	1	33.3%
Ground	1	33.3%
Wooden gym floor	1	33.3%
TOTAL	3	100.0%

Table 23.9 Softball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	41	36.3%
Coach	29	25.7%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	1	0.9%
Not initially examined at the time of the suspected head injury	17	15.0%
Multiple examiners	25	22.1%
TOTAL	113	100.0%

Table 23.10 Softball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	87	77.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	26	23.0%
TOTAL	113	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 23.11 Softball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	14	12.4%
No reported previous concussions	99	87.6%
TOTAL	113	100.0%

Table 23.12 Most Recent Concussion for Softball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	2	14.3%
Within six months to one year	1	7.1%
Over one year	11	78.6%
TOTAL	14	100.0%

Table 23.13 Number of Previous Concussions for Softball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	13	92.9%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	1	7.1%
TOTAL	14	100.0%

Table 23.14 Softball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	88	77.9%
Did not receive written authorization to return by the end of season	15	13.3%
Follow-up Report not completed	10	8.8%
TOTAL	113	100.0%

Table 23.15 Softball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	39	34.5%
DO	14	12.4%
PA	12	10.6%
NP	23	20.4%
Medical examiner data not available*	25	22.1%
TOTAL	113	100.0%

Table 23.16 Softball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	2	1.8%
Urgent or Ready Care business	14	12.4%
Primary care physician or pediatrician's office	59	52.2%
Neurologist's office	4	3.5%
Team doctor	9	8.0%
Medical facility data not available*	25	22.1%
TOTAL	113	100.0%

Table 23.17 Softball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	82	72.6%
Conditions to return	6	5.3%
Return to activity data not available*	25	22.1%
TOTAL	113	100.0%

Table 23.18 Softball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	56	49.6%
1-2 Days	16	14.2%
3-6 Days	12	10.6%
7-9 Days	2	1.8%
10-20 Days	1	0.9%
≥21 Days	1	0.9%
Missed school data not available*	25	22.1%
TOTAL	113	100.0%

Table 23.19 Softball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	8	7.1%
6-10 Days	34	30.1%
11-15 Days	25	22.1%
16-20 Days	9	8.0%
≥21 Days	11	9.7%
Data not available**	26	23.0%
TOTAL	113	100.0%

10 Missing Follow-up Reports*

15 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

1 Data entry errors**

XXIV. Boys Swimming & Diving Head Injury Reports

**Table 24.1 Head Injury Prevalence Rate for Boys Swimming & Diving,
MHSAA Head Injury Reporting System, 2023-24 School Year**

Boys Swimming & Diving Participation	4,038
All Reported Boys Swimming & Diving Head Injuries	7
Boys Swimming & Diving Head Injury Prevalence Rate (reported head injuries/total participants)	0.17%
Boys Swimming & Diving Head Injury Prevalence Rate Per Thousand Participants	2

**Table 24.2 Boys Swimming & Diving Head Injuries by Level of Competition,
MHSAA Head Injury Reporting System, 2023-24 School Year**

	n	%
Varsity	7	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	7	100.0%

**Table 24.3 Boys Swimming & Diving Head Injuries by Type of Exposure,
MHSAA Head Injury Reporting System, 2023-24 School Year**

	n	%
Practice	6	85.7%
Competition	1	14.3%
TOTAL	7	100.0%

Table 24.4 Boys Swimming & Diving Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	1	16.7%
Middle of practice	3	50.0%
End of practice	2	33.3%
PRACTICE TOTAL	6	100.0%
Start of competition	0	0.0%
Middle of competition	1	14.3%
End of competition	0	0.0%
COMPETITION TOTAL	1	14.3%

Table 24.5 Activity Type for Boys Swimming & Diving Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	3	50.0%
During simulated competition-scrimmage	2	33.3%
Not specified	1	16.7%
TOTAL	6	100.0%

Table 24.6 Boys Swimming & Diving Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	2	28.6%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	5	71.4%
Uncertain as to the cause of the event	0	0.0%
TOTAL	7	100.0%

Table 24.7 Person to Playing Surface Contact Boys Swimming & Diving Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Water	3	60.0%
Pool tile	1	20.0%
Diving board	1	20.0%
TOTAL	5	60.0%

Table 24.8 Boys Swimming & Diving Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	2	28.6%
Coach	3	42.9%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	1	14.3%
Multiple examiners	1	14.3%
TOTAL	7	100.0%

Table 24.9 Boys Swimming & Diving Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	5	71.4%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	2	28.6%
TOTAL	7	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 24.10 Boys Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	7	100.0%
TOTAL	7	100.0%

Table 24.11 Most Recent Concussion for Boys Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 24.12 Number of Previous Concussions for Boys Swimming & Diving Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 24.13 Boys Swimming & Diving Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	6	85.7%
Did not receive written authorization to return by the end of season	1	14.3%
Follow-up Report not completed	0	0.0%
TOTAL	7	100.0%

Table 24.14 Boys Swimming & Diving Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	4	57.1%
DO	0	0.0%
PA	0	0.0%
NP	2	28.6%
Medical examiner data not available*	1	14.3%
TOTAL	7	100.0%

Table 24.15 Boys Swimming & Diving Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	6	85.7%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	1	14.3%
TOTAL	7	100.0%

Table 24.16 Boys Swimming & Diving Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	6	85.7%
Conditions to return	0	0.0%
Return to activity data not available*	1	14.3%
TOTAL	7	100.0%

Table 24.17 Boys Swimming & Diving Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	3	42.9%
1-2 Days	2	28.6%
3-6 Days	1	14.3%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	1	14.3%
TOTAL	7	100.0%

Table 24.18 Boys Swimming & Diving Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	2	28.6%
11-15 Days	2	28.6%
16-20 Days	0	0.0%
≥21 Days	2	28.6%
Data not available**	1	14.3%
TOTAL	7	100.0%

0 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

**XXV. Girls Swimming & Diving
Head Injury Reports**

**Table 25.1 Head Injury Prevalence Rate for Girls Swimming & Diving,
MHSAA Head Injury Reporting System, 2023-24 School Year**

Girls Swimming & Diving Participation	4,726
All Reported Girls Swimming & Diving Head Injuries	22
Girls Swimming & Diving Head Injury Prevalence Rate (reported head injuries/total participants)	0.47%
Girls Swimming & Diving Head Injury Prevalence Rate Per Thousand Participants	5

**Table 25.2 Girls Swimming & Diving Head Injuries by Level of Competition,
MHSAA Head Injury Reporting System, 2023-24 School Year**

	n	%
Varsity	22	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	22	100.0%

**Table 25.3 Girls Swimming & Diving Head Injuries by Type of Exposure,
MHSAA Head Injury Reporting System, 2023-24 School Year**

	n	%
Practice	19	86.4%
Competition	3	13.6%
TOTAL	22	100.0%

Table 25.4 Girls Swimming & Diving Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	2	10.5%
Middle of practice	13	68.4%
End of practice	4	21.1%
PRACTICE TOTAL	19	100.0%
Start of competition	0	0.0%
Middle of competition	3	13.6%
End of competition	0	0.0%
COMPETITION TOTAL	3	13.6%

Table 25.5 Activity Type for Girls Swimming & Diving Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	16	84.2%
During simulated competition-scrimmage	2	10.5%
Not specified	1	5.3%
TOTAL	19	100.0%

Table 25.6 Girls Swimming & Diving Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	5	22.7%
Person to object contact (e.g. wall, equipment)	8	36.4%
Person to playing surface contact	9	40.9%
Uncertain as to the cause of the event	0	0.0%
TOTAL	22	100.0%

Table 25.7 Person to Playing Surface Contact Girls Swimming & Diving Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Pool	2	22.2%
Pool wall	1	11.1%
Pool deck	2	22.2%
Water	4	44.4%
TOTAL	9	22.2%

Table 25.8 Girls Swimming & Diving Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	6	27.3%
Coach	1	4.5%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	1	4.5%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	7	31.8%
Multiple examiners	7	31.8%
TOTAL	22	100.0%

Table 25.9 Girls Swimming & Diving Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	13	59.1%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	1	4.5%
NOT removed from activity at the time of the injury event*	8	36.4%
TOTAL	22	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 25.10 Girls Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	2	9.1%
No reported previous concussions	20	90.9%
TOTAL	22	100.0%

Table 25.11 Most Recent Concussion for Girls Swimming & Diving Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	1	50.0%
Within six months to one year	0	0.0%
Over one year	1	50.0%
TOTAL	2	100.0%

Table 25.12 Number of Previous Concussions for Girls Swimming & Diving Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	2	100.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 25.13 Girls Swimming & Diving Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	18	81.8%
Did not receive written authorization to return by the end of season	4	18.2%
Follow-up Report not completed	0	0.0%
TOTAL	22	100.0%

Table 25.14 Girls Swimming & Diving Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	11	50.0%
DO	2	9.1%
PA	1	4.5%
NP	4	18.2%
Medical examiner data not available*	4	18.2%
TOTAL	22	100.0%

Table 25.15 Girls Swimming & Diving Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	14	63.6%
Neurologist's office	1	4.5%
Team doctor	3	13.6%
Medical facility data not available*	4	18.2%
TOTAL	22	100.0%

Table 25.16 Girls Swimming & Diving Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	16	72.7%
Conditions to return	2	9.1%
Return to activity data not available*	4	18.2%
TOTAL	22	100.0%

Table 25.17 Girls Swimming & Diving Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	13	59.1%
1-2 Days	5	22.7%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	4	18.2%
TOTAL	22	100.0%

Table 25.18 Girls Swimming & Diving Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	7	31.8%
11-15 Days	4	18.2%
16-20 Days	0	0.0%
≥21 Days	5	22.7%
Data not available**	6	27.3%
TOTAL	22	100.0%

0 Missing Follow-up Reports*

4 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XXVI. Boys Tennis Head Injury Reports

Table 26.1 Head Injury Prevalence Rate for Boys Tennis, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Tennis Participation	5,945
All Reported Boys Tennis Head Injuries	2
Boys Tennis Head Injury Prevalence Rate (reported head injuries/total participants)	0.03%
Boys Tennis Head Injury Prevalence Rate Per Thousand Participants	0

Table 26.2 Boys Tennis Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	1	50.0%
Junior Varsity	1	50.0%
Freshman	0	0.0%
TOTAL	2	100.0%

Table 26.3 Boys Tennis Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	2	100.0%
TOTAL	2	100.0%

Table 26.4 Boys Tennis Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	1	50.0%
Middle of competition	1	50.0%
End of competition	0	0.0%
COMPETITION TOTAL	2	100.0%

Table 26.5 Activity Type for Boys Tennis Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 26.6 Boys Tennis Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	2	100.0%
Person to playing surface contact	0	0.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	2	100.0%

Table 26.7 Person to Playing Surface Contact Boys Tennis Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Tennis court	0	0.0%
TOTAL	0	0.0%

Table 26.8 Boys Tennis Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	1	50.0%
Multiple examiners	1	50.0%
TOTAL	2	100.0%

Table 26.9 Boys Tennis Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	1	50.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	1	50.0%
TOTAL	2	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 26.10 Boys Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	2	100.0%
TOTAL	2	100.0%

Table 26.11 Most Recent Concussion for Boys Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 26.12 Number of Previous Concussions for Boys Tennis Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 26.13 Boys Tennis Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	1	50.0%
Did not receive written authorization to return by the end of season	1	50.0%
Follow-up Report not completed	0	0.0%
TOTAL	2	100.0%

Table 26.14 Boys Tennis Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	1	50.0%
DO	0	0.0%
PA	0	0.0%
NP	0	0.0%
Medical examiner data not available*	1	50.0%
TOTAL	2	100.0%

Table 26.15 Boys Tennis Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	1	50.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	1	50.0%
TOTAL	2	100.0%

Table 26.16 Boys Tennis Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	1	50.0%
Conditions to return	0	0.0%
Return to activity data not available*	1	50.0%
TOTAL	2	100.0%

Table 26.17 Boys Tennis Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	1	50.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	1	50.0%
TOTAL	2	100.0%

Table 26.18 Boys Tennis Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	0	0.0%
11-15 Days	1	50.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	1	50.0%
TOTAL	2	100.0%

0 Missing Follow-up Reports*

1 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXVII. Girls Tennis Head Injury Reports

Table 27.1 Head Injury Prevalence Rate for Girls Tennis, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Tennis Participation	8,911
All Girls Tennis Head Injuries	1
Girls Tennis Head Injury Prevalence Rate	0.01%
Girls Tennis Head Injury Prevalence Rate Per Thousand Participants	0

Table 27.2 Girls Tennis Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	0	0.0%
Junior Varsity	1	100.0%
Freshman	0	0.0%
TOTAL	1	100.0%

Table 27.3 Girls Tennis Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	0	0.0%
Competition	1	100.0%
TOTAL	1	100.0%

Table 27.4 Girls Tennis Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	0	0.0%
End of practice	0	0.0%
PRACTICE TOTAL	0	0.0%
Start of competition	0	0.0%
Middle of competition	1	100.0%
End of competition	0	0.0%
COMPETITION TOTAL	1	100.0%

Table 27.5 Activity Type for Girls Tennis Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	0	0.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 27.6 Girls Tennis Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	0	0.0%
Person to playing surface contact	1	100.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	1	100.0%

Table 27.7 Person to Playing Surface Contact Girls Tennis Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Tennis court	1	100.0%
TOTAL	1	100.0%

Table 27.8 Girls Tennis Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	1	100.0%
Multiple examiners	0	0.0%
TOTAL	1	100.0%

Table 27.9 Girls Tennis Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	0	0.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	1	100.0%
TOTAL	1	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 27.10 Girls Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	0	0.0%
No reported previous concussions	1	100.0%
TOTAL	1	100.0%

Table 27.11 Most Recent Concussion for Girls Tennis Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	0	0.0%

Table 27.12 Number of Previous Concussions for Girls Tennis Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	0	0.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	0	0.0%

Table 27.13 Girls Tennis Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	1	100.0%
Did not receive written authorization to return by the end of season	0	0.0%
Follow-up Report not completed	0	0.0%
TOTAL	1	100.0%

Table 27.14 Girls Tennis Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	0	0.0%
DO	0	0.0%
PA	1	100.0%
NP	0	0.0%
Medical examiner data not available*	0	0.0%
TOTAL	1	100.0%

Table 27.15 Girls Tennis Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	1	100.0%
Primary care physician or pediatrician's office	0	0.0%
Neurologist's office	0	0.0%
Team doctor	0	0.0%
Medical facility data not available*	0	0.0%
TOTAL	1	100.0%

Table 27.16 Girls Tennis Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	1	100.0%
Conditions to return	0	0.0%
Return to activity data not available*	0	0.0%
TOTAL	1	100.0%

Table 27.17 Girls Tennis Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	0	0.0%
1-2 Days	0	0.0%
3-6 Days	1	100.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	0	0.0%
TOTAL	1	100.0%

Table 27.18 Girls Tennis Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	1	100.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	0	0.0%
Data not available**	0	0.0%
TOTAL	1	100.0%

0 Missing Follow-up Reports*

0 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

**XXVIII. Boys Track & Field
Head Injury Reports**

Table 28.1 Head Injury Prevalence Rate for Boys Track & Field, MHSAA Head Injury Reporting System, 2023-24 School Year

Boys Track and Field Participation	23,888
All Boys Track and Field Head Injuries	5
Boys Track and Field Head Injury Prevalence Rate (reported head injuries/total participants)	0.02%
Boys Track and Field Head Injury Prevalence Rate Per Thousand Participants	0

Table 28.2 Boys Track & Field Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	5	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	5	100.0%

Table 28.3 Boys Track & Field Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	2	40.0%
Competition	3	60.0%
TOTAL	5	100.0%

Table 28.4 Boys Track & Field Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	0	0.0%
Middle of practice	2	100.0%
End of practice	0	0.0%
PRACTICE TOTAL	2	100.0%
Start of competition	2	66.7%
Middle of competition	0	0.0%
End of competition	1	33.3%
COMPETITION TOTAL	3	100.0%

Table 28.5 Activity Type for Boys Track & Field Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	2	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 28.6 Boys Track & Field Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	0	0.0%
Person to object contact (e.g. wall, equipment)	2	40.0%
Person to playing surface contact	3	60.0%
Uncertain as to the cause of the event	0	0.0%
TOTAL	5	100.0%

Table 28.7 Person to Playing Surface Contact Boys Track & Field Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Track	2	66.7%
High jump area	1	33.3%
TOTAL	3	100.0%

Table 28.8 Boys Track & Field Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	0	0.0%
Coach	0	0.0%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	3	60.0%
Multiple examiners	2	40.0%
TOTAL	5	100.0%

Table 28.9 Boys Track & Field Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	2	40.0%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	3	60.0%
TOTAL	5	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 28.10 Boys Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	2	40.0%
No reported previous concussions	3	60.0%
TOTAL	5	100.0%

Table 28.11 Most Recent Concussion for Boys Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	0	0.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	2	100.0%
TOTAL	2	100.0%

Table 28.12 Number of Previous Concussions for Boys Track & Field Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	1	50.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	1	50.0%
Not specified	0	0.0%
TOTAL	2	100.0%

Table 28.13 Boys Track & Field Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	3	60.0%
Did not receive written authorization to return by the end of season	2	40.0%
Follow-up Report not completed	0	0.0%
TOTAL	5	100.0%

Table 28.14 Boys Track & Field Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	2	40.0%
DO	0	0.0%
PA	0	0.0%
NP	1	20.0%
Medical examiner data not available*	2	40.0%
TOTAL	5	100.0%

Table 28.15 Boys Track & Field Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	0	0.0%
Urgent or Ready Care business	0	0.0%
Primary care physician or pediatrician's office	2	40.0%
Neurologist's office	0	0.0%
Team doctor	1	20.0%
Medical facility data not available*	2	40.0%
TOTAL	5	100.0%

Table 28.16 Boys Track & Field Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	3	60.0%
Conditions to return	0	0.0%
Return to activity data not available*	2	40.0%
TOTAL	5	100.0%

Table 28.17 Boys Track & Field Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	1	20.0%
1-2 Days	2	40.0%
3-6 Days	0	0.0%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	2	40.0%
TOTAL	5	100.0%

Table 28.18 Boys Track & Field Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	0	0.0%
6-10 Days	1	20.0%
11-15 Days	0	0.0%
16-20 Days	0	0.0%
≥21 Days	2	40.0%
Data not available**	2	40.0%
TOTAL	5	100.0%

0 Missing Follow-up Reports*

2 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

**XXIX. Girls Track & Field
Head Injury Reports**

Table 29.1 Head Injury Prevalence Rate for Girls Track & Field, MHSAA Head Injury Reporting System, 2023-24 School Year

Girls Track and Field Participation	17,325
All Girls Track and Field Head Injuries	11
Girls Track and Field Head Injury Prevalence Rate (reported head injuries/total participants)	0.06%
Girls Track and Field Head Injury Prevalence Rate Per Thousand Participants	1

Table 29.2 Girls Track & Field Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	11	100.0%
Junior Varsity	0	0.0%
Freshman	0	0.0%
TOTAL	11	100.0%

Table 29.3 Girls Track & Field Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	4	36.4%
Competition	7	63.6%
TOTAL	11	100.0%

Table 29.4 Girls Track & Field Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	2	50.0%
Middle of practice	1	25.0%
End of practice	1	25.0%
PRACTICE TOTAL	4	100.0%
Start of competition	2	28.6%
Middle of competition	4	57.1%
End of competition	1	14.3%
COMPETITION TOTAL	7	100.0%

Table 29.5 Activity Type for Girls Track & Field Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	4	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	4	100.0%

Table 29.6 Girls Track & Field Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	4	100.0%
During simulated competition-scrimmage	0	0.0%
Not specified	0	0.0%
TOTAL	4	100.0%

Table 29.7 Person to Playing Surface Contact Girls Track & Field Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Track	3	42.9%
Turf	1	14.3%
Long jump runway	1	14.3%
Discus circle	1	14.3%
Pole vault pit	1	14.3%
TOTAL	7	100.0%

Table 29.8 Girls Track & Field Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	2	18.2%
Coach	2	18.2%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	0	0.0%
NP	1	9.1%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	1	9.1%
Multiple examiners	5	45.5%
TOTAL	11	100.0%

Table 29.9 Girls Track & Field Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	8	72.7%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	0	0.0%
NOT removed from activity at the time of the injury event*	3	27.3%
TOTAL	11	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 29.10 Girls Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	1	9.1%
No reported previous concussions	10	90.9%
TOTAL	11	100.0%

Table 29.11 Most Recent Concussion for Girls Track & Field Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	1	100.0%
Within one to six months	0	0.0%
Within six months to one year	0	0.0%
Over one year	0	0.0%
TOTAL	1	100.0%

Table 29.12 Number of Previous Concussions for Girls Track & Field Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	1	100.0%
2 concussions	0	0.0%
3 concussions	0	0.0%
≥4 concussions	0	0.0%
Not specified	0	0.0%
TOTAL	1	100.0%

Table 29.13 Girls Track & Field Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	9	81.8%
Did not receive written authorization to return by the end of season	2	18.2%
Follow-up Report not completed	0	0.0%
TOTAL	11	100.0%

Table 29.14 Girls Track & Field Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	5	45.5%
DO	0	0.0%
PA	1	9.1%
NP	3	27.3%
Medical examiner data not available*	2	18.2%
TOTAL	11	100.0%

Table 29.15 Girls Track & Field Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	1	9.1%
Urgent or Ready Care business	1	9.1%
Primary care physician or pediatrician's office	6	54.5%
Neurologist's office	1	9.1%
Team doctor	0	0.0%
Medical facility data not available*	2	18.2%
TOTAL	11	100.0%

Table 29.16 Girls Track & Field Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	8	72.7%
Conditions to return	1	9.1%
Return to activity data not available*	2	18.2%
TOTAL	11	100.0%

Table 29.17 Girls Track & Field Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	6	54.5%
1-2 Days	2	18.2%
3-6 Days	1	9.1%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	2	18.2%
TOTAL	11	100.0%

Table 29.18 Girls Track & Field Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	0	0.0%
3-5 Days	2	18.2%
6-10 Days	1	9.1%
11-15 Days	5	45.5%
16-20 Days	1	9.1%
≥21 Days	0	0.0%
Data not available**	2	18.2%
TOTAL	11	100.0%

0 Missing Follow-up Reports*

2 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

0 Data entry errors**

XXX. Volleyball Head Injury Reports

Table 30.1 Head Injury Prevalence Rate for Volleyball, MHSAA Head Injury Reporting System, 2023-24 School Year

Volleyball Participation	19,119
All Reported Volleyball Head Injuries	157
Volleyball Head Injury Prevalence Rate (reported head injuries/total participants)	0.82%
Volleyball Head Injury Prevalence Rate Per Thousand Participants	8

Table 30.2 Volleyball Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	85	54.1%
Junior Varsity	50	31.8%
Freshman	22	14.0%
TOTAL	157	100.0%

Table 30.3 Volleyball Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	73	46.5%
Competition	84	53.5%
TOTAL	157	100.0%

Table 30.4 Volleyball Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	8	11.0%
Middle of practice	43	58.9%
End of practice	22	30.1%
PRACTICE TOTAL	73	100.0%
Start of competition	19	22.6%
Middle of competition	44	52.4%
End of competition	21	25.0%
COMPETITION TOTAL	84	100.0%

Table 30.5 Activity Type for Volleyball Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	60	82.2%
During simulated competition-scrimmage	12	16.4%
Not specified	1	1.4%
TOTAL	73	100.0%

Table 30.6 Injury Occurred While Playing Offense, Defense, or Special Teams for Volleyball Head Injuries, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Offense	10	6.4%
Defense	15	9.6%
Special Teams	0	0.0%
Unknown	37	23.6%
Not Applicable	95	60.5%
TOTAL	157	100.0%

Table 30.7 Volleyball Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	37	23.6%
Person to object contact (e.g. wall, equipment)	88	56.1%
Person to playing surface contact	22	14.0%
Uncertain as to the cause of the event	10	6.4%
TOTAL	157	100.0%

Table 30.8 Person to Playing Surface Contact Volleyball Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Wooded gym floor	20	90.9%
Other	2	9.1%
TOTAL	22	100.0%

Table 30.9 Volleyball Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	61	38.9%
Coach	28	17.8%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	1	0.6%
DO	0	0.0%
MD	2	1.3%
PA	1	0.6%
NP	0	0.0%
Athletic director	1	0.6%
Not initially examined at the time of the suspected head injury	33	21.0%
Multiple examiners	30	19.1%
TOTAL	157	100.0%

Table 30.10 Volleyball Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	119	75.8%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	1	0.6%
NOT removed from activity at the time of the injury event*	37	23.6%
TOTAL	157	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 30.11 Volleyball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	20	12.7%
No reported previous concussions	137	87.3%
TOTAL	157	100.0%

Table 30.12 Most Recent Concussion for Volleyball Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	2	10.0%
Within one to six months	4	20.0%
Within six months to one year	5	25.0%
Over one year	9	45.0%
TOTAL	20	100.0%

Table 30.13 Number of Previous Concussions for Volleyball Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	13	65.0%
2 concussions	5	25.0%
3 concussions	0	0.0%
≥4 concussions	1	5.0%
Not specified	1	5.0%
TOTAL	20	100.0%

Table 30.14 Volleyball Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	141	89.8%
Did not receive written authorization to return by the end of season	14	8.9%
Follow-up Report not completed	2	1.3%
TOTAL	157	100.0%

Table 30.15 Volleyball Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	72	45.9%
DO	26	16.6%
PA	19	12.1%
NP	24	15.3%
Medical examiner data not available*	16	10.2%
TOTAL	157	100.0%

Table 30.16 Volleyball Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	6	3.8%
Urgent or Ready Care business	14	8.9%
Primary care physician or pediatrician's office	101	64.3%
Neurologist's office	6	3.8%
Team doctor	14	8.9%
Medical facility data not available*	16	10.2%
TOTAL	157	100.0%

Table 30.17 Volleyball Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	125	79.6%
Conditions to return	16	10.2%
Return to activity data not available*	16	10.2%
TOTAL	157	100.0%

Table 30.18 Volleyball Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	99	63.1%
1-2 Days	29	18.5%
3-6 Days	11	7.0%
7-9 Days	2	1.3%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	16	10.2%
TOTAL	157	100.0%

Table 30.19 Volleyball Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	3	1.9%
3-5 Days	15	9.6%
6-10 Days	45	28.7%
11-15 Days	49	31.2%
16-20 Days	13	8.3%
≥21 Days	14	8.9%
Data not available**	18	11.5%
TOTAL	157	100.0%

2 Missing Follow-up Reports*

14 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

2 Data entry errors**

XXXI. Wrestling Head Injury Reports

Table 31.1 Head Injury Prevalence Rate for Wrestling, MHSAA Head Injury Reporting System, 2023-24 School Year

Wrestling Participation	11,814
All Reported Wrestling Head Injuries	257
Wrestling Head Injury Prevalence Rate (reported head injuries/total participants)	2.18%
Wrestling Head Injury Prevalence Rate Per Thousand Participants	22

Table 31.2 Wrestling Head Injuries by Gender, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Male	229	89.1%
Female	28	10.9%
TOTAL	257	100.0%

Table 31.3 Wrestling Head Injuries by Level of Competition, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Varsity	209	81.3%
Junior Varsity	48	18.7%
Freshman	0	0.0%
TOTAL	257	100.0%

Table 31.4 Wrestling Head Injuries by Type of Exposure, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Practice	134	52.1%
Competition	123	47.9%
TOTAL	257	100.0%

Table 31.5 Wrestling Head Injuries by Time during Practice or Competition of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Start of practice	9	6.7%
Middle of practice	76	56.7%
End of practice	49	36.6%
PRACTICE TOTAL	134	100.0%
Start of competition	20	16.3%
Middle of competition	66	53.7%
End of competition	37	30.1%
COMPETITION TOTAL	123	100.0%

Table 31.6 Activity Type for Wrestling Head Injury Events during Practice, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
During a drill	94	70.1%
During simulated competition-scrimmage	36	26.9%
Not specified	4	3.0%
TOTAL	134	100.0%

Table 31.7 Wrestling Head Injuries by Cause of Injury, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Person to person contact	98	38.1%
Person to object contact (e.g. wall, equipment)	10	3.9%
Person to playing surface contact	127	49.4%
Uncertain as to the cause of the event	22	8.6%
TOTAL	257	100.0%

Table 31.8 Person to Playing Surface Contact Wrestling Head Injuries by Surface Type, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Wrestling mat	117	92.1%
Athletic mat	9	7.1%
Wooden gym floor	1	0.8%
TOTAL	127	100.0%

Table 31.9 Wrestling Head Injuries by Initial Examiner, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Athletic trainer	127	49.4%
Coach	25	9.7%
Sideline emergency personnel	0	0.0%
Other appropriate health care professional	0	0.0%
DO	0	0.0%
MD	0	0.0%
PA	2	0.8%
NP	0	0.0%
Athletic director	0	0.0%
Not initially examined at the time of the suspected head injury	56	21.8%
Multiple examiners	47	18.3%
TOTAL	257	100.0%

Table 31.10 Wrestling Athlete Removal from Activity at the Time of Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Removed from activity at the time of the injury event, & DID NOT return to activity on the day of the injury event	188	73.2%
Removed from activity at the time of the injury event, & returned to activity on the day of the injury event*	2	0.8%
NOT removed from activity at the time of the injury event*	67	26.1%
TOTAL	257	100.0%

*Not indicating the injury was mismanaged at the time of the event; athlete may not have reported injury, symptoms may not have presented until after the event, etc.

Table 31.11 Wrestling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Reported at least one previous concussion	52	20.2%
No reported previous concussions	205	79.8%
TOTAL	257	100.0%

Table 31.12 Most Recent Concussion for Wrestling Athletes Reporting Previous Concussions after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Within last month	3	5.8%
Within one to six months	11	21.2%
Within six months to one year	8	15.4%
Over one year	30	57.7%
TOTAL	52	100.0%

Table 31.13 Number of Previous Concussions for Wrestling Athletes Reporting Previous Concussion after Head Injury Event, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1 concussion	34	65.4%
2 concussions	12	23.1%
3 concussions	2	3.8%
≥4 concussions	2	3.8%
Not specified	2	3.8%
TOTAL	52	100.0%

Table 31.14 Wrestling Head Injuries by Athlete Clearance to Return to Activity before the End of Season in which the Injury Occurred, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Received written authorization to return by the end of season	198	77.0%
Did not receive written authorization to return by the end of season	54	21.0%
Follow-up Report not completed	5	1.9%
TOTAL	257	100.0%

Table 31.15 Wrestling Head Injuries by Medical Examiner Authorizing Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
MD	96	37.4%
DO	42	16.3%
PA	18	7.0%
NP	42	16.3%
Medical examiner data not available*	59	23.0%
TOTAL	257	100.0%

Table 31.16 Wrestling Head Injuries by Facility where Medical Examiner Authorized Return to Activity, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Hospital	3	1.2%
Urgent or Ready Care business	29	11.3%
Primary care physician or pediatrician's office	124	48.2%
Neurologist's office	9	3.5%
Team doctor	33	12.8%
Medical facility data not available*	59	23.0%
TOTAL	257	100.0%

Table 31.17 Wrestling Head Injuries by Clearance to Return to Activity Conditions, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
Unconditional return	184	71.6%
Conditions to return	14	5.4%
Return to activity data not available*	59	23.0%
TOTAL	257	100.0%

Table 31.18 Wrestling Head Injuries by Missed School Days after Injury Event Date, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
0 Days	134	52.1%
1-2 Days	48	18.7%
3-6 Days	16	6.2%
7-9 Days	0	0.0%
10-20 Days	0	0.0%
≥21 Days	0	0.0%
Missed school data not available*	59	23.0%
TOTAL	257	100.0%

Table 31.19 Wrestling Head Injuries by Time between Head Injury Event Date and Authorization Date to Return, MHSAA Head Injury Reporting System, 2023-24 School Year

	n	%
1-2 Days	4	1.6%
3-5 Days	13	5.1%
6-10 Days	54	21.0%
11-15 Days	51	19.8%
16-20 Days	28	10.9%
≥21 Days	45	17.5%
Data not available**	62	24.1%
TOTAL	257	100.0%

5 Missing Follow-up Reports*

54 Did not receive clearance to return to activity before the end of season (thus no follow-up data)*

3 Data entry errors**

XXXII. Year Over Year Comparison

Table 32.1 Head Injury Reports by Sport and Year, MHSAA Head Injury Reporting System, 2023-24 School Year

	Boys*									Girls								
SPORTS	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Baseball	65	70	60	73	2	41	53	58	41	-	-	-	-	-	-	-	-	-
Basketball	247	168	182	142	186	87	123	185	156	454	371	337	302	319	136	279	273	254
Bowling	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Competitive Cheer	-	-	-	-	-	-	-	-	-	122	150	131	135	137	51	96	127	115
Cross Country	4	1	1	3	4	1	3	0	3	4	6	3	7	2	1	2	3	4
Football 11-Player	1,907	1,647	1,469	1,514	1,423	685	997	1,190	1,224	-	-	-	-	-	-	-	-	-
Football 8-Player	32	37	53	43	56	27	53	110	71	-	-	-	-	-	-	-	-	-
Golf	1	1	0	2	0	0	1	1	1	2	1	0	0	2	0	1	1	0
Gymnastics	-	-	-	-	-	-	-	-	-	8	8	11	7	7	3	7	5	2
Ice Hockey	126	124	106	115	103	30	61	66	78	-	-	-	-	-	-	-	-	-
Lacrosse	85	92	87	88	0	50	65	71	83	30	55	57	65	1	41	65	44	36
Skiing-Alpine	3	3	5	5	4	2	2	3	3	6	2	1	2	12	3	4	4	1
Soccer	269	207	169	202	194	91	138	152	191	406	364	329	330	5	203	256	286	259
Softball	-	-	-	-	21	-	-	-	-	147	146	101	143	4	60	107	107	113
Swimming & Diving	14	11	14	19	1	2	11	7	7	31	33	25	26	39	15	31	24	22
Tennis	0	4	3	2	1	0	1	2	2	6	6	7	8	0	4	2	5	1
Track & Field	4	11	9	10	1	4	10	7	5	22	15	11	20	0	10	8	13	11
Volleyball	-	-	-	-	-	-	-	-	-	211	174	175	212	212	86	120	172	157
Wrestling	245	251	234	210	216	72	181	246	257	-	-	-	-	-	-	-	-	-

*Boys head injury data includes both males AND females playing on primarily male teams

Winter sports still in tournament play when activity was stopped due to the COVID-19 pandemic during the 2022-23 school year

Spring sports that had begun practice but not competition when activity was stopped due to the COVID-19 pandemic during the 2022-23 school year

Table 32.2 Head Injury Reports per 1,000 Participants by Sport and Year, MHSAA Head Injury Reporting System, 2022-23 School Year

	Boys*									Girls								
SPORTS	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Baseball	3.58	3.89	3.39	4.24	0.12	2.55	3.21	3.48	2.51	-	-	-	-	-	-	-	-	-
Basketball	11.48	7.90	8.52	6.72	8.85	4.62	6.14	8.95	7.72	29.18	23.34	21.53	19.64	21.08	10.31	20.52	19.80	19.37
Bowling	0.26	0.00	0.00	0.23	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Competitive Cheer	-	-	-	-	-	-	-	-	-	17.28	22.32	19.51	20.23	20.86	9.82	16.72	21.37	18.63
Cross Country	0.43	0.11	0.10	0.31	0.42	0.12	0.37	0.00	0.38	0.48	0.71	0.34	0.86	0.25	0.14	0.28	0.44	0.59
Football 11-Player	49.41	45.04	41.28	44.58	43.48	22.28	32.07	36.72	37.58	-	-	-	-	-	-	-	-	-
Football 8-Player	34.48	32.34	37.70	29.66	34.76	15.34	24.09	42.49	27.31	-	-	-	-	-	-	-	-	-
Golf	0.16	0.16	0.00	0.32	0.00	0.00	0.15	0.14	0.14	0.58	0.28	0.00	0.00	0.55	0.00	0.26	0.27	0.00
Gymnastics	-	-	-	-	-	-	-	-	-	12.54	12.58	15.67	10.09	10.51	4.89	11.97	8.90	3.78
Ice Hockey	37.59	36.35	31.50	34.91	31.48	9.28	19.22	21.09	24.94	-	-	-	-	-	-	-	-	-
Lacrosse	17.16	17.99	16.83	16.18	0.00	11.09	13.62	14.09	15.85	10.81	19.55	19.66	20.44	0.31	14.76	21.29	13.69	11.09
Skiing-Alpine	4.17	3.58	6.02	5.41	4.35	2.44	2.00	3.24	3.65	9.20	2.68	1.30	2.62	15.27	3.86	4.78	4.68	1.27
Soccer	18.46	14.15	11.56	13.94	13.60	6.90	10.49	11.45	13.69	30.37	27.55	24.89	24.98	0.40	18.24	21.65	24.11	21.90
Softball	-	-	-	-	-	-	-	-	-	10.66	10.70	7.42	10.76	0.32	5.27	9.07	9.13	9.79
Swimming & Diving	2.96	2.21	2.75	3.80	4.15	0.49	2.52	1.68	1.73	5.76	5.89	4.36	4.49	7.12	2.93	5.99	4.87	4.66
Tennis	0.00	0.66	0.49	0.32	0.16	0.00	0.16	0.33	0.34	0.69	0.67	0.77	0.86	0.00	0.56	0.25	0.61	0.11
Track & Field	0.18	0.47	0.38	0.42	0.05	0.23	0.45	0.30	0.21	1.32	0.88	0.64	1.15	0.00	0.78	0.51	0.79	0.63
Volleyball	-	-	-	-	-	-	-	-	-	10.88	9.13	9.01	11.12	11.01	4.67	6.38	8.93	8.21
Wrestling	25.52	26.15	24.90	22.12	22.09	9.50	19.98	23.48	21.75	-	-	-	-	-	-	-	-	-

*Boys head injury data includes both males AND females playing on primarily male teams

Winter sports still in tournament play when activity was stopped due to the COVID-19 pandemic during the 2022-23 school year

Spring sports that had begun practice but not competition when activity was stopped due to the COVID-19 pandemic during the 2022-23 school year

XXXIII. Executive Summary

33.1 Introduction

In May of 2015, the Representative Council of the Michigan High School Athletic Association approved two long-term additions to the history of efforts by MHSAA's member schools to promote and protect participant health.

- Concussion care “gap” insurance was provided by the MHSAA without cost to member schools or students' families, covering practices and competition for all levels of all MHSAA sports, 7th through 12th grades. The coverage was extended to 6th-graders in 2016-17. That coverage continued in 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23, 2023-24 school years. The coverage will continue in 2024-25.
- Concussion reporting was required for all MHSAA member high schools for all head injury events taking place during in-season practices and competitions in all levels of all MHSAA sports. That requirement continues.

The purpose of mandated concussion reporting is not to identify areas of the state or individual schools or teams that are above or below average in terms of the number of concussions reported. The intended purpose is to help identify the significant broad themes and questions that might be researched to help point school-sponsored sports leadership toward policies and procedures that will tend to improve the experience of students in interscholastic athletic programs of Michigan and beyond.

This Executive Summary is based on confirmed Head Injury Reports submitted for MHSAA-supported sports sponsored and conducted at the MHSAA's member high schools during the 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23, 2023-24 school years.

33.2 Ranking

SPORT	PARTICIPANTS	HEAD INJURY REPORTS	HEAD INJURY REPORTS PER THOUSAND PARTICIPANTS	HEAD INJURIES PER THOUSAND PARTICIPANTS RATE RANK OUT OF ALL MHSAA SPORTS
Football - 11-player	32,574	1,224	38	1
Football - 8-player	2,600	71	27	2
Ice Hockey	3,128	78	25	3
Girls Soccer	11,829	259	22	4
Wrestling	11,814	257	22	5
Girls Basketball	13,113	254	19	6
Competitive Cheer	6,172	115	19	7
Boys Lacrosse	5,236	83	16	8
Boys Soccer	13,953	191	14	9
Girls Lacrosse	3,245	36	11	10
Softball	11,544	113	10	11
Volleyball	19,119	157	8	12
Boys Basketball	20,199	156	8	13
Girls Swimming & Diving	4,726	22	5	14
Gymnastics	529	2	4	15
Boys Skiing	822	3	4	16
Baseball	16,309	41	3	17
Boys Swimming & Diving	4,038	7	2	18
Girls Skiing	786	1	1	19
Girls Track & Field	17,325	11	1	20
Girls Cross Country	6,729	4	1	21
Boys Cross Country	7,886	3	0	22
Boys Tennis	5,945	2	0	23
Boys Track & Field	23,888	5	0	24
Boys Golf	7,222	1	0	25
Girls Tennis	8,911	1	0	26
Boys Bowling	4,292	0	0	27
Girls Bowling	2,767	0	0	27
Girls Golf	3,936	0	0	27

33.3 Observations of Year #8 (2023-24)

- During the 2023-24 school year, 3,613 suspected concussion reports were entered by MHSAA member schools into the Head Injury Reporting System:
 - 33 reports were duplicates and subsequently deleted
 - 3 reports were not included because of obvious entry errors (head injuries took place during the previous school year)
 - 190 reports were for injury events that either took place out of season or in a non-MHSAA event (sideline cheerleading, club sport, gym class, car accident, etc.)
 - 215 reported head injuries were not diagnosed as concussions and not included in the 2022-23 Summary Report
 - 74 reports were middle school students participating in middle school athletic events – because middle school reporting is voluntary and remains low, middle school data was not included in the 2023-24 Summary Report

With the above deletions and exclusions, **3,097** head injury reports were included in the 2023-24 Summary Report.

- 3,097 total head injury reports are down 2.1% from the 3,163 reports for the 2022-23 school year.
- Head injury reporting rates for the 2023-24 school year are similar to those observed during 2022-23, with one exception: 8-player football. The 8-player football head injury rate returned to normal levels, with 27 reports per 1,000 participants. This follows the 75% increase observed during the 2022-23 school year, where the rate jumped from 24 per 1,000 participants in 2021-22 to 42 per 1,000 participants in 2022-23. Notably, 2022-23 marked the first time in nine years of data collection that 11-player football did not have the highest rate of head injury reports per 1,000 participants.
- 11-player football, 8-player football, girls soccer, ice hockey, wrestling, and girls basketball continue to have the highest rate of head injury reports – these six sports have been in the top six with regard to head injury reports per 1,000 participants in every year head injury reporting data has been tracked and all three seasons have been completed without interruption.

- In sports sponsored under the same or similar playing rules for both genders (i.e., soccer, basketball, and baseball/softball), significantly more concussions continue to be reported for females compared to males at the high school level.

Girls Soccer – 22 per 1,000 (Ranks 4th)

Boys Soccer – 14 per 1,000 (Ranks 9th)

Girls Basketball – 19 per 1,000 (Ranks 6th)

Boys Basketball – 8 per 1,000 (Ranks 13th)

Softball – 10 per 1,000 (Ranks 11th)

Baseball – 3 per 1,000 (Ranks 17th)

- As in the previous years, over two-thirds of reported concussions occur during competition (67.9%). In nearly all MHSAA-sponsored sports, about two-thirds or more of all reported concussions occur during competition. Competitive cheer continues to be the only sport with a reasonably large sample size of head injury reports in which more concussions were sustained during practice (86.1% in practice; 13.9% in competition).
- 11-Player Football reports per 1,000 participants during the 2023 remain similar to those observed in previous years:

11-Player Football – 49 in 2015; 45 in 2016; 41 in 2017; 45 in 2018; 43 in 2019; 22 in 2020; 32 in 2021; 37 in 2022, 37 in 2023

- 8-player Football reports per 1,000 participants during the 2023 season were significantly lower than the 2022 season:

8-Player Football – 34 in 2015; 32 in 2016; 38 in 2017; 30 in 2018; 35 in 2019; 15 in 2020; 24 in 2021; 42 in 2022, 27 in 2023

Again, it should be noted the 2023 rate is more consistent with rates observed in 8-player football from 2015-2021 seasons. The rate observed during the 2022 season appears to be an anomaly.

- Beginning with the 2023-24 school year, a question was added to the report designed to capture data on concussions sustained while playing offense, defense, or special teams.

According to data collected for the 2023 11-player football season, 27.0% of injuries occurred while the student was playing on offense; 22.3% occurred on defense; 5.9% occurred on special teams; 41.7% reported it was unknown.

In 8-player football, 19.7% of injuries occurred while the student was playing on offense; 31.0% occurred on defense; 11.3% occurred on special teams; 35.2% reported it was unknown.

- For the 2023-24 school year, “NOT initially examined at the time of the suspected head injury” was added as a response option under the question related to the initial examiner. Students were not initially examined at the time of suspected injury for 21.7 % of all the reported concussions. This does not indicate that any of these injuries were mismanaged at the time of the event; the student may not have reported the injury, the student may have been hiding their symptoms, any signs or symptoms may not have presented until after the event – any number of different factors may have led to the student not being removed at the time of injury.
- In 47.3% of concussion reports the student was initially examined by an athletic trainer at the time of the injury. 17.1% of students were examined by multiple examiners at the time of the injury. 11.3% were initially examined by the coach at the time of the injury.
- 73.4% of students determined to have a concussion were removed from activity at the time of the injury event.

25.4% of students determined to have a concussion were not removed from activity at the time of the incident. 1.2% of students eventually diagnosed with a concussion were initially removed from activity and then allowed to return on that day. Again, this by no means indicates that any of these injuries were mismanaged at the time of the event.

This total of 26.6% of students later determined to have a concussion but not removed from activity at the time of the injury is higher than what has been observed over the past six years:

16.4% in 2016-17; 16.5% in 2017-18; 18.5% in 2018-19; 18.0% in 2019-20
19.5% in 2020-21; 20.1% in 2021-22; 19.1% in 2022-23

- 72.1% of students sustaining a concussion were out 6 more days prior to receiving clearance to return to full activity during the 2023-24 school year. This compared to 91.6% of concussions caused athletes to be withheld from activity for 6 days or more in 2022-23.

- At the time of this summary, Online Follow-up Reports were not completed for 58 (1.9%) of the 3,097 reports.
- The MHSAA has received 625 Return to Activity and Post-Concussion Consent Forms (20.2% of the 3,097 reported head injuries for which a clearance should have been received). This does not suggest that students are not receiving proper clearance prior to returning to activity as this documentation is likely kept on file locally at the school, but it is not being sent to the MHSAA as indicated in the MHSAA Concussion Protocol. The MHSAA received clearance documentation in 46.0% of suspected head injuries during the 2016-17 school year; 40.5% in 2017-18; 37.9% in 2018-19; 30.3% in 2019-20; 16.2% in 2020-21; 23.1% in 2021-22; 20.0% in 2022-23; 20.2% 2023-24.
- In the Fall season, 492 schools reported concussions – 229 schools reported 0 concussions for the season – 18 schools did not have any Fall sports – 16 schools did not submit any response.
- In the Winter season, 438 schools reported concussions – 285 schools reported 0 concussions for the season – 14 schools did not have any Winter sports – 18 schools did not submit any response.
- In the Spring season, 322 schools reported concussions – 376 schools reported 0 concussions for the season – 31 schools did not have any Spring sports – 26 schools did not submit any response.

33.4 Emerging Inquires for Year #10 (2024-25)

- A. In response to a recommendation from the MHSAA Football Committee and with input from the Sports Medicine Advisory Committee, the MHSAA began collecting head injury data on special teams' plays starting in the 2023-24 school year. A new question was added to the online concussion report to capture data on head injury rates across offense, defense, and special teams. This initiative aimed to determine whether there is a disproportionately higher incidence of head injuries in different phases of the game.

According to data collected for the 2023 11-player football season, 27.0% of injuries occurred while the student was playing on offense; 22.3% occurred on defense; 5.9% occurred on special teams. 41.7% reported it was unknown whether the injury occurred on offense, defense, or special team.

In 8-player football, 19.7% of injuries occurred while the student was playing on offense; 31.0% occurred on defense; 11.3% occurred on special teams, with 35.2% reported it was unknown whether the injury occurred on offense, defense, or special team.

It should be noted that while the initial focus of this question was football-related, all sports were required to submit an answer. With only one year of data, identifying trends is challenging. However, as more data is collected in the coming years, we hope this information will enhance coaches' education and potentially guide adjustments to practice policies and game rules. The MHSAA will continue to monitor this data as an ongoing commitment to ensuring the safety of athletes, not only in football but across all MHSAA sports.

- B. For the 2023-24 school year, "NOT initially examined at the time of the suspected head injury" was added as a response option under the question related to the initial examiner. According to responses, students were not initially examined at the time of suspected injury for 21.7 % of all the reported concussions.

It was also indicated that in 25.4% of concussions, the student was not removed from activity at the time of the event.

This by no means indicates that any of these injuries were mismanaged at the time of the event; the student may not have reported the injury, the student may have been hiding their symptoms, or signs or symptoms may not have presented until after the event. Any number of factors may have led responders to indicate in the report a student was not examined and/or removed at the time of injury, but given the dangers and long-term consequences of students continuing to participate following a suspected head injury, it is critical for the MHSAA to

closely monitor this data, and look for ways to improve identification and ensure that every student suspected of having a concussion is removed from activity immediately and receives proper medical evaluation and care before returning to play.

- C. To ensure the quality and usefulness of head injury reporting data, the MHSAA must continue to investigate and discuss procedures that will improve compliance with the MHSAA Concussion Protocol and reporting initiative, especially:
 - 1. Prompt submission of initial reports.
 - 2. Timely submission of follow-up reports.
 - 3. Consistent submission of Return to Activity documentation.

33.5 Next Steps

The 2015-16 school year report raised some initial themes, while the 2016-17 report may have started the identification of trends. The 2017-18, 2018-19, 2019-20, 2021-22, 2022-23, and 2023-24 data have helped to refine our understanding of those trends and also continue to raise new questions.

Understanding questions does not demand that all actions must be delayed. It is not too soon to experiment with more head protection and modified play and practice rules in football, ice hockey, soccer, wrestling, and lacrosse – all of which rank in the top ten sports in terms of number of injuries per thousand participants.

Moreover, efforts must be made to continue to educate players, parents, coaches, and others involved to observe and report the signs and symptoms of concussion that they experience or that they see in others.

The 2024-25 school year will begin with the expectations that, again, nearly 100 percent of MHSAA member high schools will submit initial and follow-up reports of head injuries for every level of every MHSAA sport they sponsor. Furthermore, each MHSAA Sport Committee will examine the 2023-24 concussion data in their sport to assist in the health and risk management of the participants. The MHSAA Sports Medicine Advisory Committee will review the data to furnish additional educational resources and address emerging issues.

Meanwhile, the MHSAA invites colleges, universities, and health care systems in Michigan, as well as the National Federation of State High School Associations, to consider how they may assist in addressing developing issues and any other questions suggested by this data.

Interested representatives of these entities are invited to contact:

Mark Uyl, Executive Director
Michigan High School Athletic Association
1661 Ramblewood Dr.
East Lansing, MI 48823
muyl@mhsaa.com