



Injury Surveillance: Why It Matters

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Monday, June 30, 2025

Disclosures

The Datalys Center currently receives funding from the National Collegiate Athletic Association (NCAA) to manage the NCAA Injury Surveillance Program, the National Athletic Trainers' Association (NATA) for NATION, and the National Federation of State High School Associations (NFHS) for the High School RIO study.

Objectives

1. *Educate* the NFHS membership about ongoing injury surveillance efforts at secondary schools in the United States
2. *Demonstrate* how data from secondary schools are used to make evidence-based decisions to reduce the risk of sports injury
3. *Educate* the NFHS membership about available data that can be used to understand the risk and patterns of sports-related injuries

What is the Datalys Center?

- The Datalys Center was formed through the collaborative efforts of the NCAA, ACSM, and BioCrossroads in 2006



- In 2014, the Datalys Center became a 501(c)(3); 509(a)(3)(b)(i) Type 1 non-profit supporting organization of AOSSM and ACSM



- Independent provider of epidemiological research services

Mission

To improve the health, safety, and performance of athletes and active people through scientific guidance and support



Vision

To be the trusted leader in making sports and physical activity safer through data-driven analytics and scientific research



Services We Provide

- Study design and execution
 - Longitudinal injury surveillance programs
 - Clinical research and patient-centered outcomes
 - Intervention and efficacy studies
 - Survey research
 - Qualitative and mix-methods designs
 - Others
- Database and application design and management
 - Common data elements
 - Clinical report form (CRF) and electronic CRF (eCRF)
 - Quality control
- Data analyses and reporting
 - Annual and ad-hoc reports
 - Peer-reviewed manuscripts
 - Fact sheets

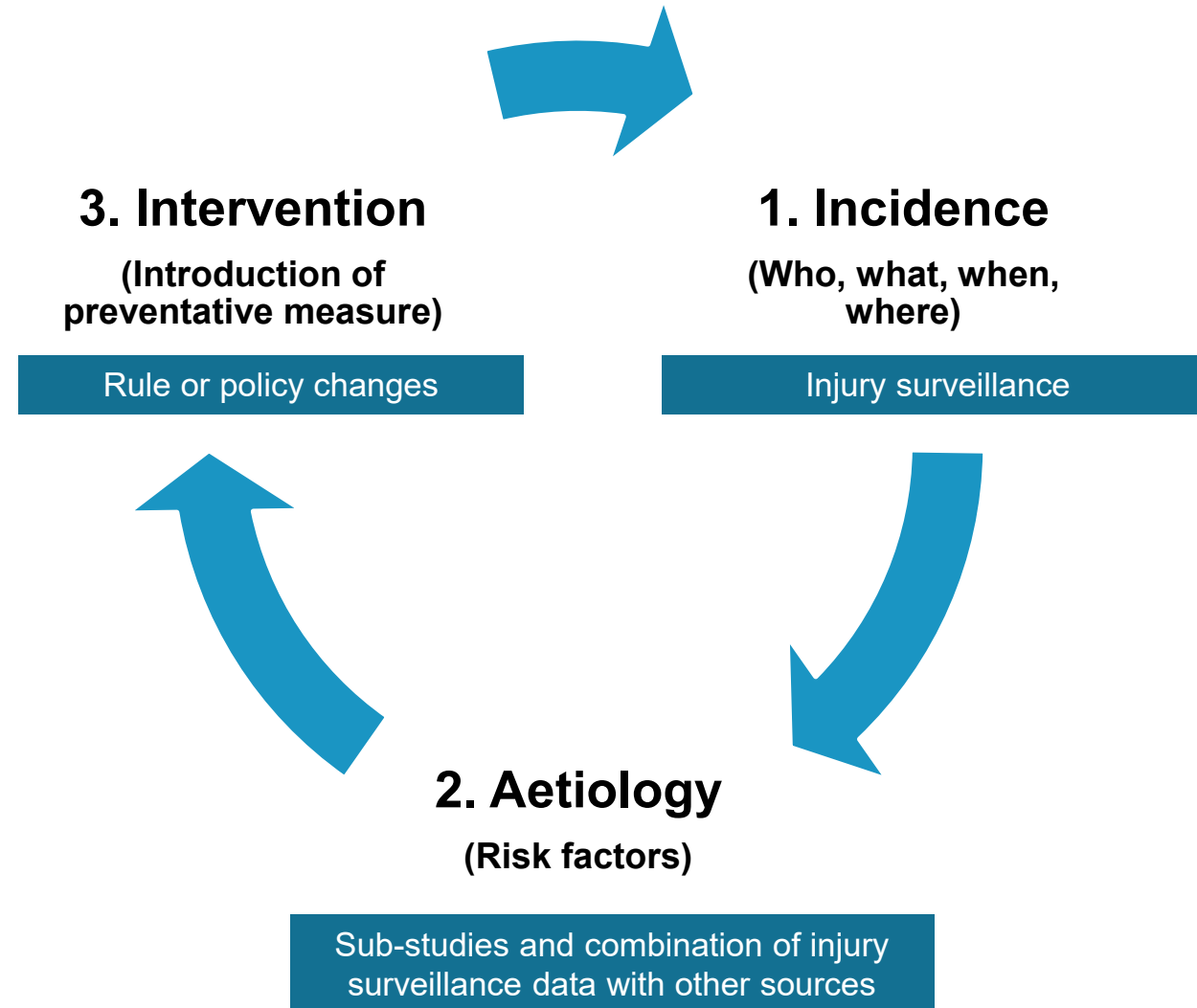


Benefits of Injury Surveillance

- Informative for clinicians, parents, players, and coaches
- Provides evidence for data-driven decisions
- Evaluate prevention programs
- Legal risk mitigation
- Monitor trends
- Publications
- Fact sheets



“Sequence of Prevention”



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Ongoing High School Injury Surveillance Programs at Datalys

Characteristics	National High School Sports-Related Injury Surveillance Study (High School RIO)	National Athletic Treatment, Injury and Outcomes Network (NATION)
First Year	2005	2011
Funder	NFHS	NATA
Reporter	Certified ATs	Certified ATs
Number of Sports	24 (20 currently)	40 (not all reported)
Data Captured	Athlete exposures All time loss injuries All dental injuries, heat illnesses, fractures, and concussions regardless of time loss	Athlete exposures All time loss injuries All non-time loss injuries Treatments Outcomes

Ongoing High School Injury Surveillance Programs at Datalys

Characteristics	National High School Sports-Related Injury Surveillance Study (High School RIO)	National Athletic Treatment, Injury and Outcomes Network (NATION)
Years of Data	20	14
Magnitude	~65 million athlete exposures (AEs) 128,000 injuries	9.4 million AEs 63,000 injuries >250,000 treatments
Deidentified	Yes	Yes
Data Collection	Reporting Information Online (RIO)	Injury Surveillance Tool (IST) ATS

Data Collection



demo account (demo) [Sign Out](#)

Search for:

School: RIO™ High (Demo)

High School RIO™

[July](#)
[August](#)
[September](#)
[October](#)
[November](#)
[December](#)
[January](#)
[February](#)
[March](#)
[April](#)
[May](#)
[June](#)

Reporting Period

Activity	ID / Name	Injury Date			
Week 6 (08/29/2022 - 09/04/2022) Exposure Report Form - Add Injury					
Boys' Football	85686 / R, Hannah	<< new >>	edit	delete	summary
Boys' Football	85687	08/29/2022	edit	delete	summary
Boys' Football	85688 / Bean, Sandy	<< new >>	edit	delete	summary
Boys' Football	22078 / Woods, Regina	08/31/2022	edit	delete	summary
Boys' Football	85689 / Boy, Charlie	09/02/2022	edit	delete	summary
Boys' Soccer	85690 / Copper, Cooper	08/30/2022	edit	delete	summary
Boys' Soccer	85691 / Robi, Winnie	09/01/2022	edit	delete	summary
Boys' Soccer	78885 / Yang, Christina	09/02/2022	edit	delete	summary
Girls' Soccer	85692 / Robi, Chessie	08/31/2022	edit	delete	summary
Girls' Soccer	85693 / Robi, Chaser	<< new >>	edit	delete	summary
Week 7 (09/05/2022 - 09/11/2022) Exposure Report Form - Add Injury					
Boys' Soccer	85692 / Robi, Chessie	<< new >>	edit	delete	summary
Boys' Ice Hockey	50814 / TEST, TEST NOW	09/07/2022	edit	delete	summary
Week 8 (09/12/2022 - 09/18/2022) Exposure Report Form - Add Injury					
Boys' Football	86202	<< new >>	edit	delete	summary
Boys' Football	79008 / Smith, Bob	<< new >>	edit	delete	summary
Boys' Football	86203 / 0001, BS	<< new >>	edit	delete	summary
Week 9 (09/19/2022 - 09/25/2022) Exposure Report Form - Add Injury					
Boys' Football	<< new >>	<< new >>	edit	delete	summary
Week 10 (09/26/2022 - 10/02/2022) Exposure Report Form - Add Injury					
Girls' Soccer	86664	<< new >>	edit	delete	summary


Demo

Welcome, Hirobison: [Sign Out](#)

[Change Password](#)

Sports Injury Research and Prevention

[Home](#)
[Athlete](#)
[Injury](#)
[Treatment](#)
[Calendar](#)
[Incomplete \(118\)](#)
[Reports](#)
[Setup](#)
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Current Sports: [Refresh](#)

UID Lookup:

Injury Event Detail [New](#) [New \(Same Athlete\)](#) [New \(Same Activity\)](#) [New \(Same Date\)](#) [Edit](#) [Delete](#) [Print](#)

Sport: Cheer
Date: 1/28/2021
Athlete: Bullock, Sandra
Completed: 7 of 7 (100%)

Event Information

Injury Event

Position
Back spotter
Basic Mechanism
Contact with another person
Specific Injury Mechanism
Direct (body part injured by direct contact)
Player Activity
Fitness - Other
Event Segment
Event (practice)
Location
Gym
Assessed By
ATC
Emergency Transport
No
Return Date
1/28/2021
Outcome
Did not interfere with Activity

Activity Information

Season
Regular Season
Start Date
1/28/2021
Activity Type
Unknown
Surface
Sand
End Date
1/28/2021
Participant Count
25

Injury/Illness Information

	Side	Severity	Recurrence	Chronic	Surgery Req'd	Closed
Sacrum/Pelvis > Fracture (Stress) > Pubis Stress Fracture	Left	1	New Injury	Yes		No
Ankle > Nervous System > Ankle Neuroma	Left					No

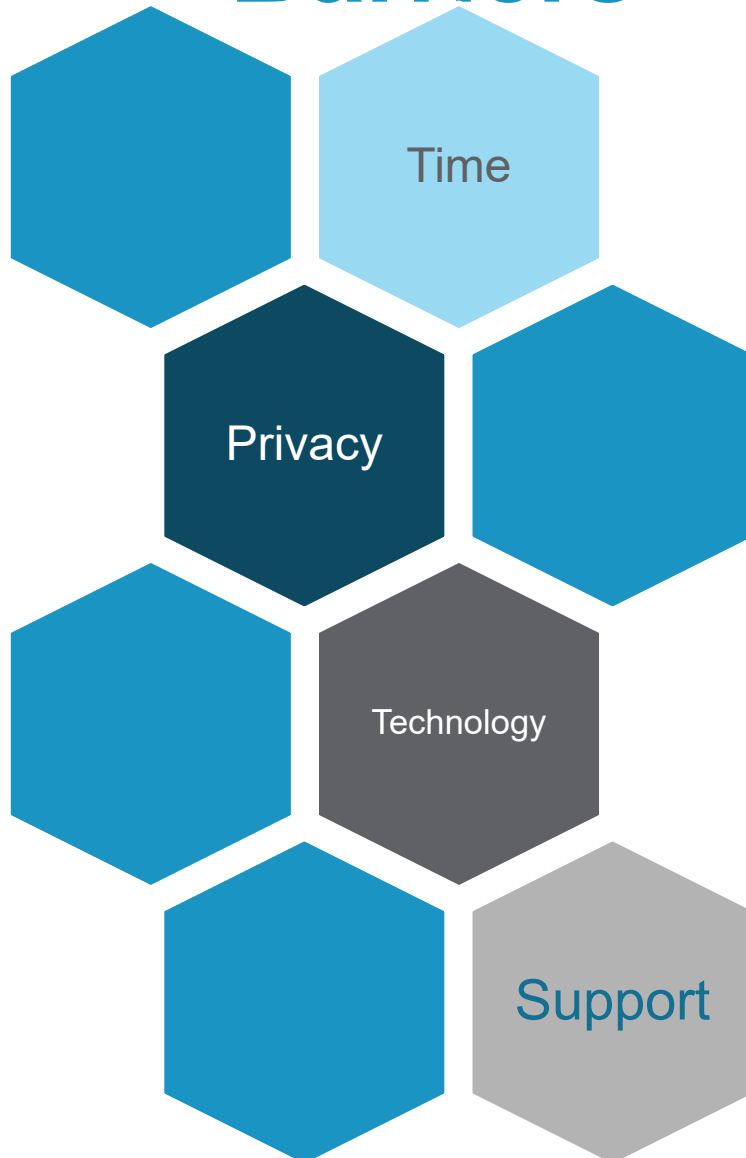
Notes

Legend: ★ = Required To Save, Blue Text = Required for a Complete Datalys record.

Ongoing High School Injury Surveillance Programs at Datalys

Characteristics	National High School Sports-Related Injury Surveillance Study (High School RIO)	National Athletic Treatment, Injury and Outcomes Network (NATION)
AT Responsibility	≥10 sports	≥1 sports (no minimum)
Time Commitment	10-15 minutes per week for exposure report 5 minutes per injury report	Depends on the number of sports
Incentive(s)	10 Category B CEUs Individual summary report Participant incentive (~\$300 per academic year)	10 Category B CEUs School data upon request
How to Get More Info/Enroll	Email highschoolrio@datalyscenter.org Call (855) 832-4222	Email nation@datalyscenter.org Call (855) 832-4222

Barriers



Solutions

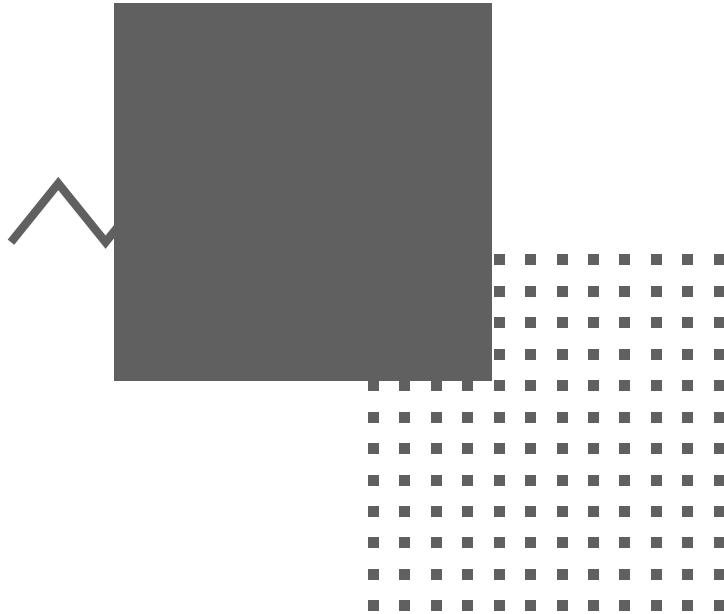
Setting aside specific time,
many ATs reported it was
much easier the second year

Provided administrators with
study privacy policies
Face to face conversations

Utilize support from
Datalys team
Work with school IT

Support from stakeholders
likely necessary for
successful participation

Benefits - Improving Health



Reflect on where coverage should be

Increased ability to recognize patterns

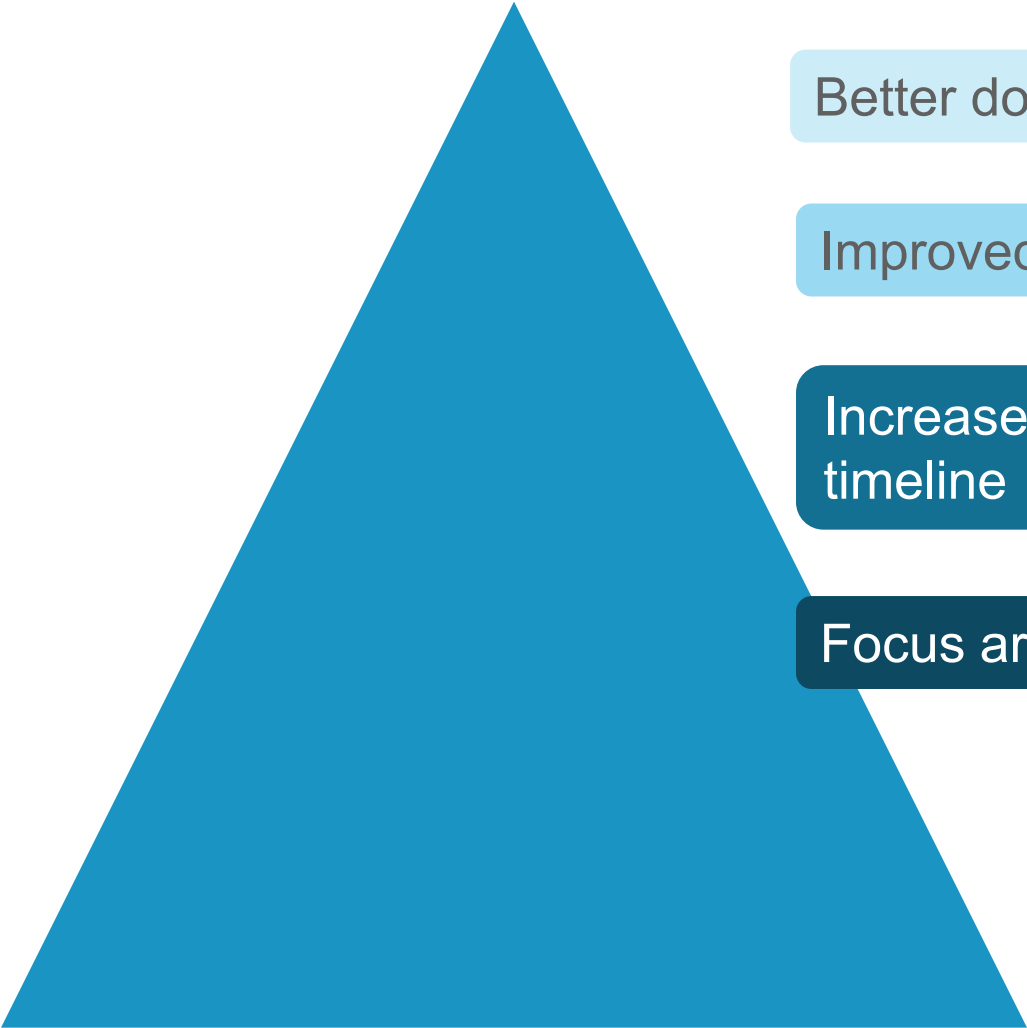
Informs prevention strategies

Facilitates conversations with coaches

Provides “benchmark” numbers

Increases awareness of participation

Benefits - Clinical Practice



Better documentation

Improved communication

Increased awareness of return to play timeline

Focus areas for continuing education

Benefits - Advocating



Educating faculty and staff - concussions

Always have data for administrators

Provides data for funding conversations

Shows the importance of high school ATs

Hiring additional athletic trainers

Providing data to national sport bodies

Utilized in salary negotiations

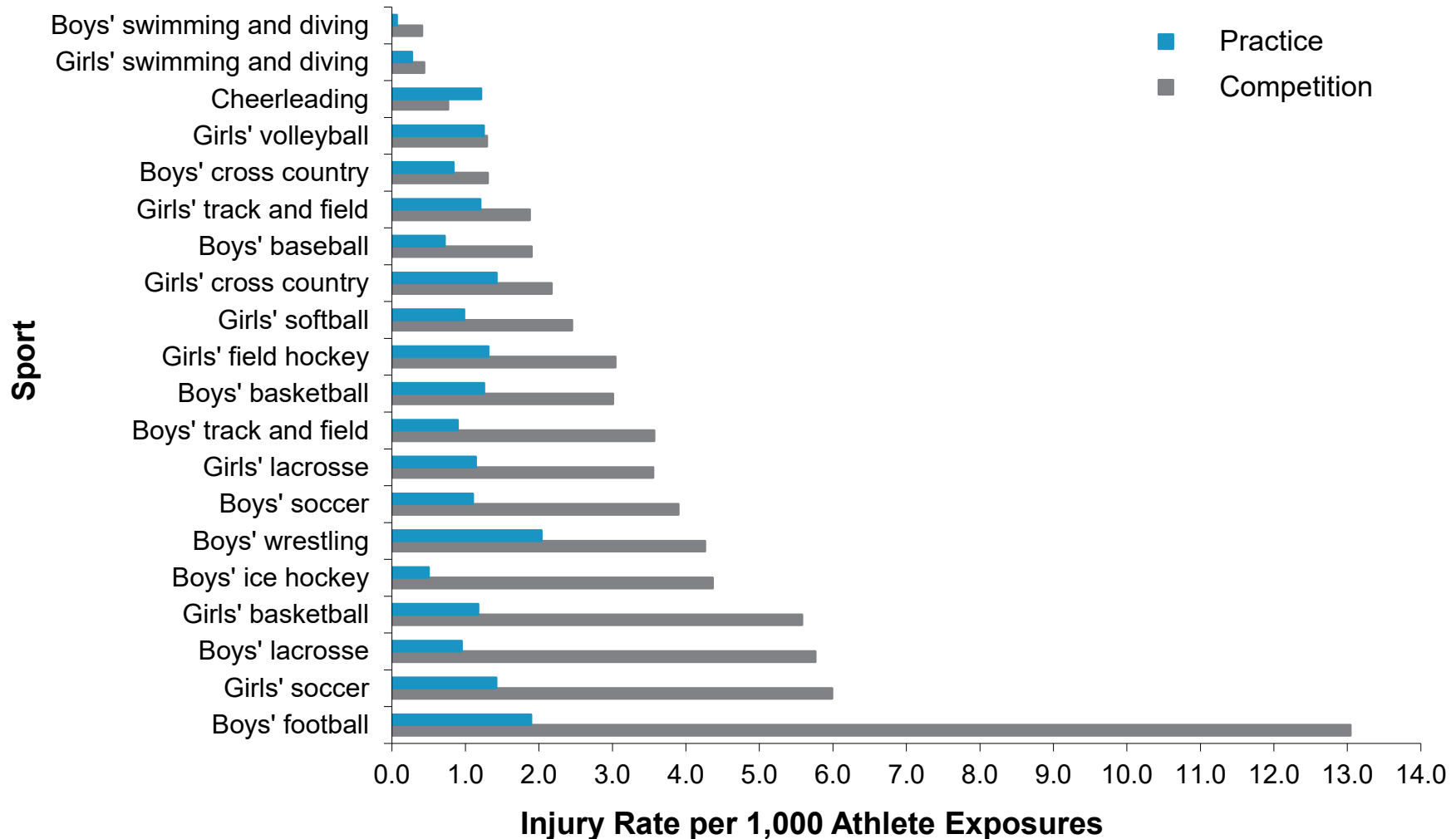
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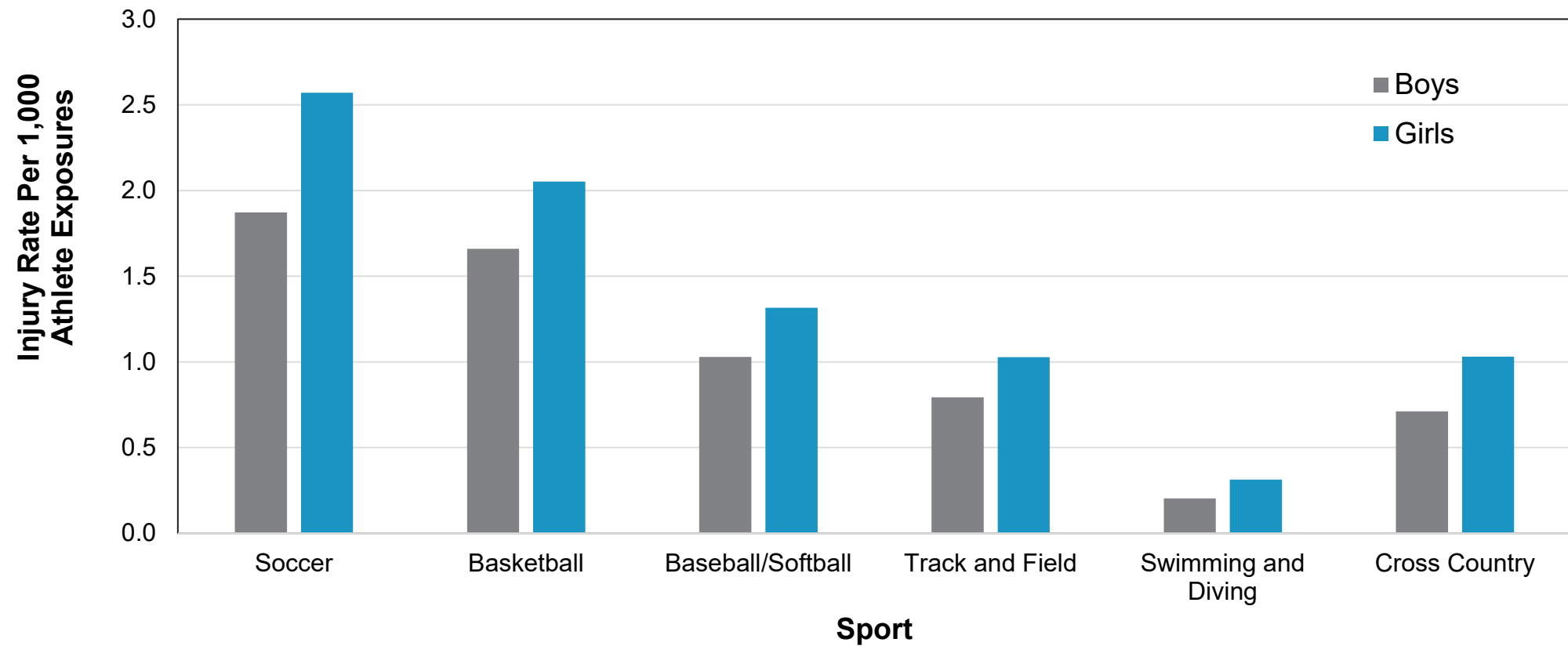
Uses of High School RIO Injury Surveillance Data

- Describe patterns of injury
- Monitor trends over time
- Provide weekly sentinel surveillance
- Provide evidence to drive injury prevention efforts
 - NFHS Sports and Medicine Advisory Committee
 - NFHS Sports Rule Committees
- Evaluate interventions
- Drive additional research

Injury Rate by Sport and Type of Activity: All Sports^a, 2023/24



Overall Injury Rates by Sex: Sex Comparable Sports, 2005/06-2023/24



Differences in Sex Comparable Sports, 2005/06-2023/24

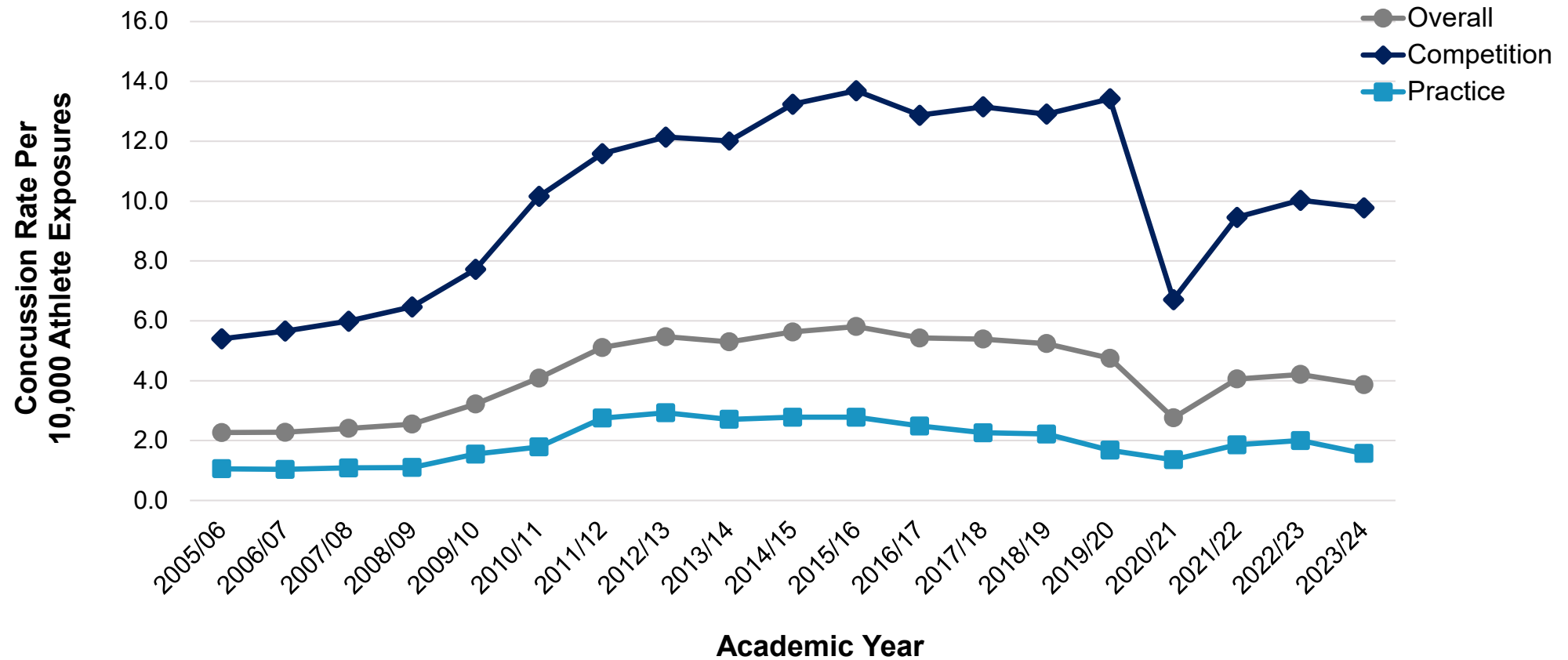
- In sex comparable sports, overall injury rates are higher among girls than boys (previous slide).
- However, varies by specific injury
 - Girls have higher concussion rates.
 - Girls have higher ACL injury rates.
 - Boys have higher fracture rates.
 - Boys have higher laceration rates.

Changing Injury Patterns^a: % of All Injuries

Most Common High School Sports Injuries in 9 Original Sports Under Surveillance		2005/06	2015/16	2023/24
Body Sites				
	Ankle	20.9%	16.5%	18.3%
	Head/Face	12.3%	26.6%	19.2%
	Knee	14.7%	14.5%	14.7%
Diagnoses				
	Strain/Sprain	50.7%	40.0%	44.4%
	Concussion	9.0%	24.0%	16.4%
	Fracture	10.2%	9.6%	10.0%

^aBoys' football, soccer, basketball, wrestling, and baseball and girls' soccer, volleyball, basketball, and softball

Concussion Rates per 10,000 AEs: 9 Original Sports^a, 2005/06-2023/24



^aBoys' football, soccer, basketball, wrestling, and baseball and girls' soccer, volleyball, basketball, and softball

Concussion Rates by Sport, 2008/09 - 2023/24



Sport	Competition	Rank	Practice	Rank
Boys' Football	30.4	1	3.9	1
Girls' Soccer	16.7	2	1.5	5
Boys' Ice Hockey	16.6	3	1.4	7
Boys' Lacrosse	12.3	4	1.4	6
Girls' Lacrosse	9.8	5	1.6	4
Girls' Basketball	9.6	6	1.3	10
Boys' Soccer	8.2	7	0.8	13
Boys' Wrestling	8.1	8	2.5	3
Girls' Field Hockey	6.1	9	1.1	11
Boys' Basketball	3.8	10	1.0	12
Girls' Volleyball	3.6	11	1.3	9
Girls' Softball	3.3	12	1.3	8
Girls' Gymnastics	2.0	13	0.6	14
Cheerleading	2.0	14	3.2	2



*Competition includes competition and performance

Mechanisms of Concussion by Sport: 2005/06 – 2023/24

Sport	Player-Player	Player-Surface	Player-Apparatus
Football	85%	10%	1%
Boys' Soccer	60%	13%	25%
Girls' Soccer	42%	17%	39%
Boys' Basketball	67%	28%	4%
Girls' Basketball	55%	34%	9%
Boys' Baseball	34%	6%	60%
Girls' Softball	25%	8%	65%
Boys' Lacrosse	67%	8%	22%
Girls' Lacrosse	21%	9%	69%

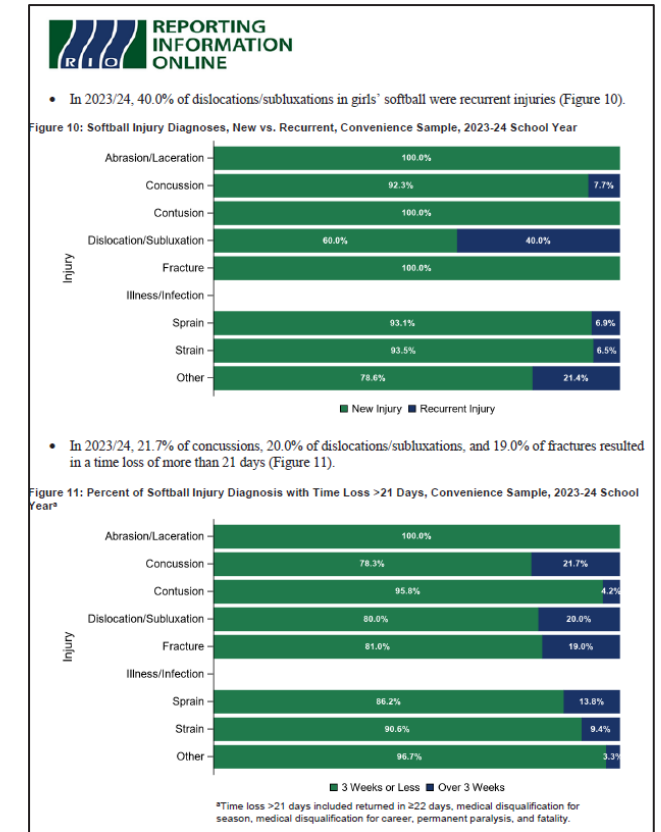
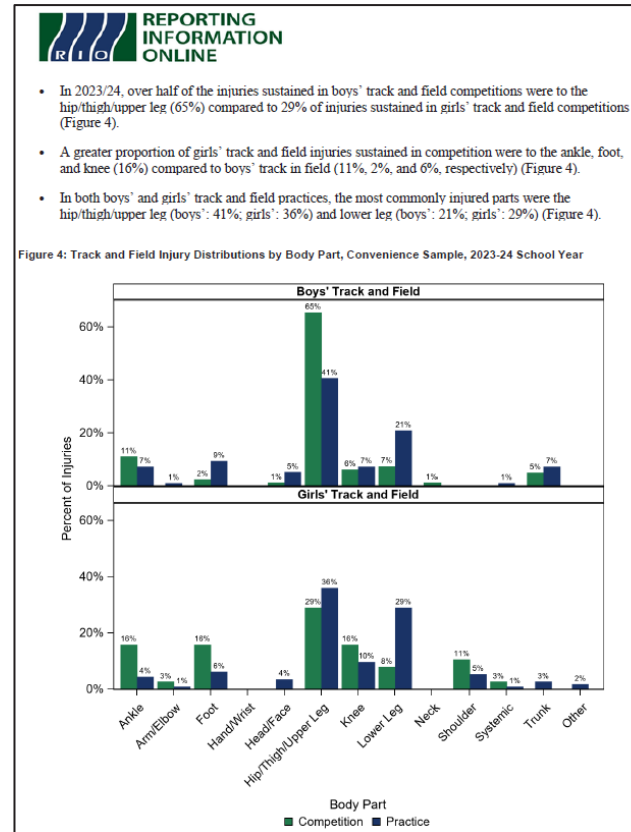
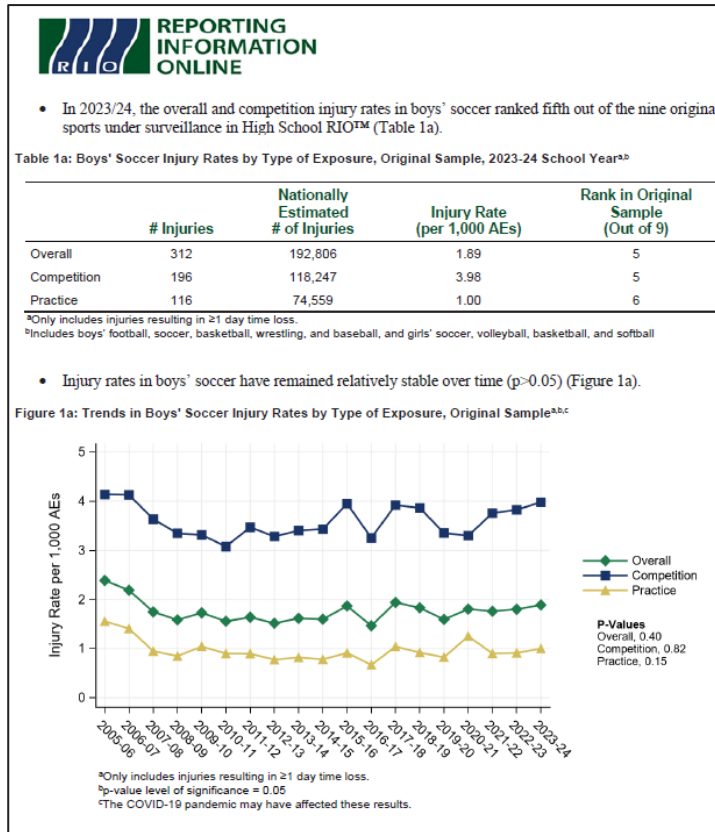
Weekly Sentinel Surveillance

- Heat illnesses
- Skin infections
- COVID-19 infections
- Fatalities and/or permanent paralysis

Week	Midwest	Northeast	South	West	Total
Week 1 (07/22/2024-07/28/2024)	0	0	0	0	0
Week 2 (07/29/2024-08/4/2024)	0	0	0	0	0
Week 3 (08/05/2024-08/11/2024)	0	0	1	0	1
Week 4 (08/12/2024-08/18/2024)	0	0	1	0	1
Week 5 (08/19/2024-08/25/2024)	0	1	0	0	1
Week 6 (08/26/2024-09/01/2024)	1	0	0	0	1
Week 7 (09/02/2024-09/08/2024)	0	0	0	0	0
Week 8 (09/09/2024-09/15/2024)	0	0	0	0	0
Week 9 (09/16/2024-09/22/2024)	0	1	1	0	2
Week 10 (09/23/2024-09/29/2024)	0	0	0	1	1
Week 11 (09/30/2024-10/06/2024)	0	0	0	0	0
Week 12 (10/07/2024-10/13/2024)	0	0	0	0	0
Week 13 (10/14/2024-10/20/2024)	0	0	0	0	0
Week 14 (10/21/2024-10/27/2024)	0	0	0	0	0
Week 15 (10/28/2024-11/03/2024)	0	0	0	0	0
Week 16 (11/04/2024-11/10/2024)	0	0	0	0	0
Week 17 (11/11/2024-11/17/2024)	0	0	0	0	0
Week 18 (11/18/2024-11/24/2024)	0	0	0	0	0
Week 19 (11/25/2024-12/01/2024)	0	0	0	0	0
Week 20 (12/02/2024-12/08/2024)	0	0	0	0	0
Week 21 (12/09/2024-12/15/2024)	0	0	0	0	0
Week 22 (12/16/2024-12/22/2024)	0	0	0	0	0
Week 23 (12/23/2024-12/29/2024)	0	0	0	0	0
Week 24 (12/30/2024-01/05/2025)	0	0	0	0	0

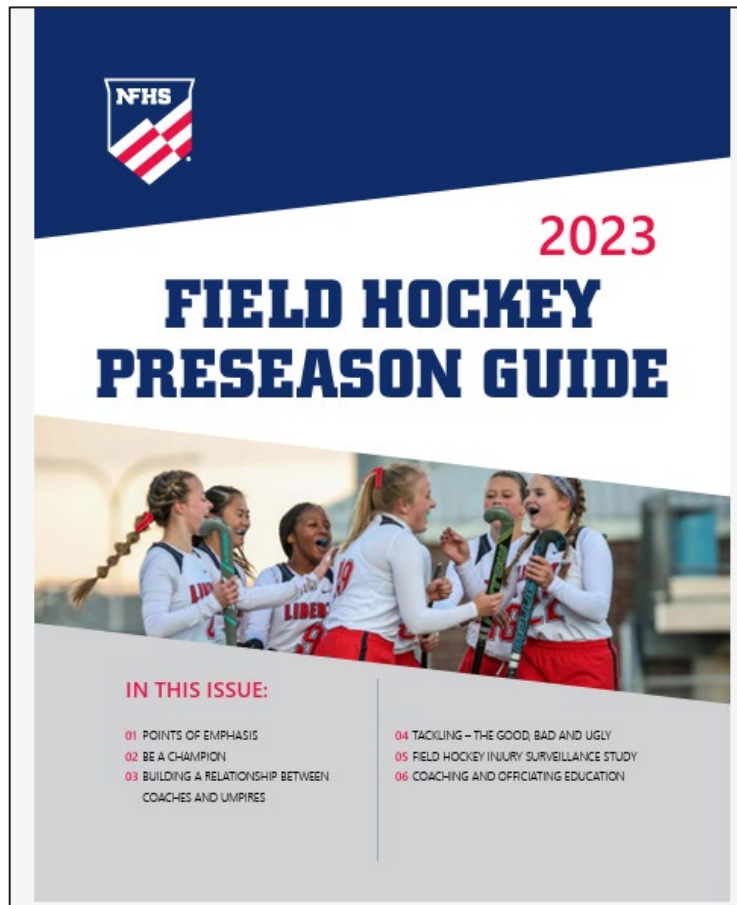
Rules Committee Reports

- Provide 14 Rules Committee Reports each year



Preseason Guides

- Provide 12 RIO Articles for Sport Preseason Guides



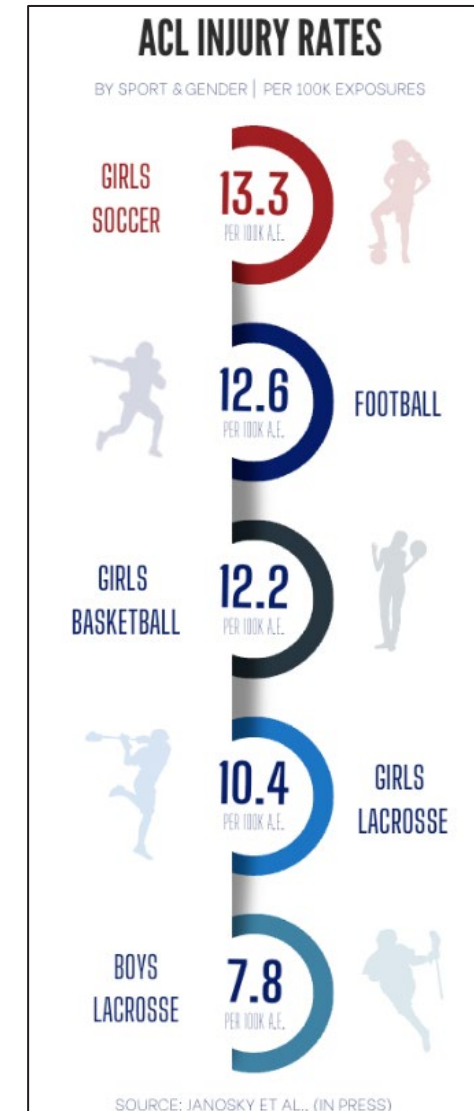
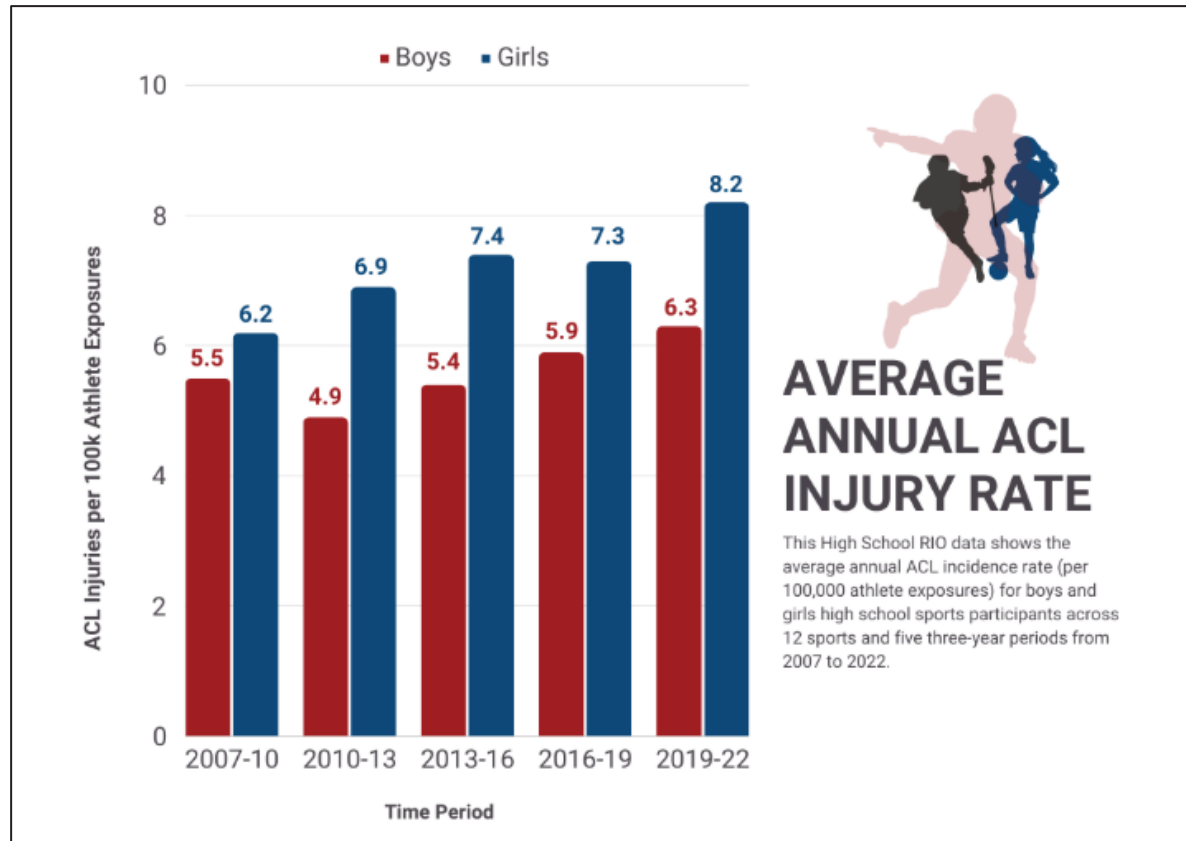
National ACL Injury Coalition

As ACL injuries mount, the Hospital for Special Surgery and the Aspen Institute partner with experts and sport organizations to keep youth on the field and active for life

<https://projectplay.org/acl-injury-prevention/main>



National ACL Injury Coalition



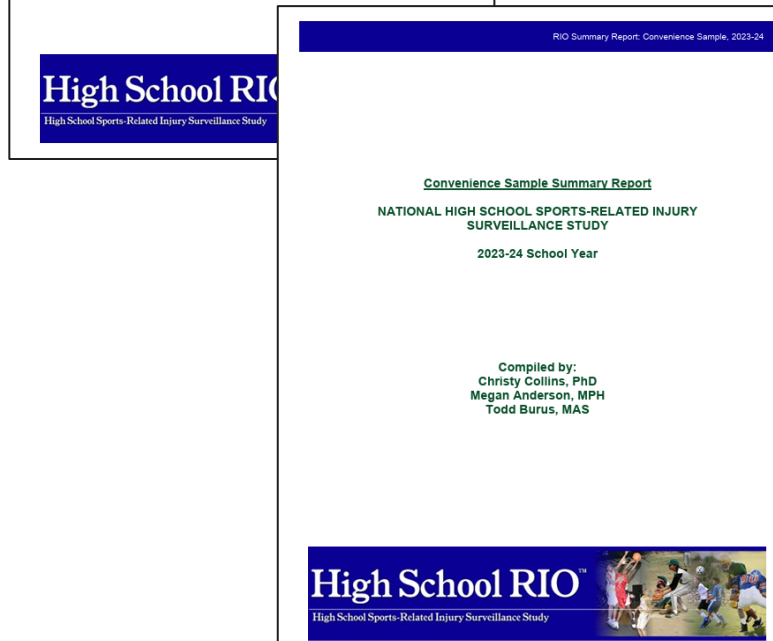
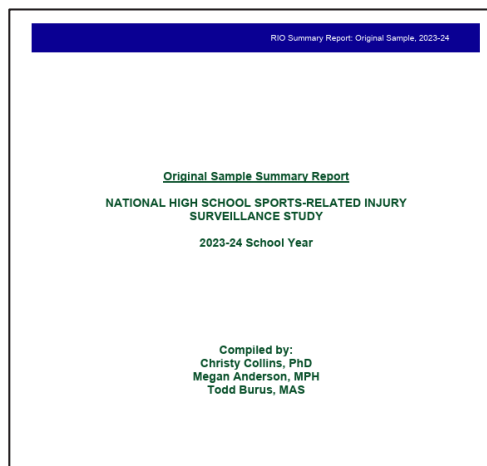
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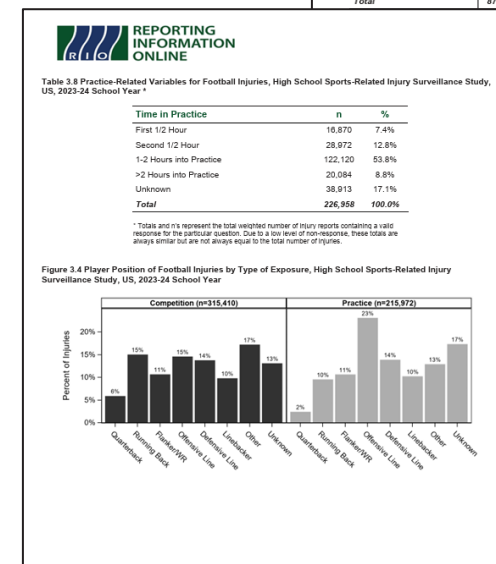
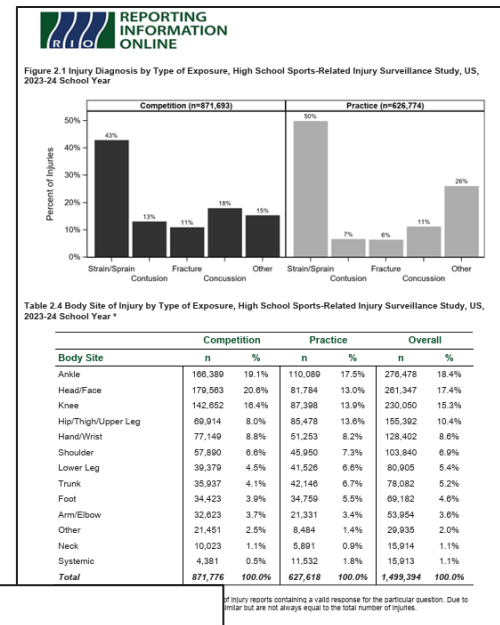
Available Data

Characteristics	National High School Sports-Related Injury Surveillance Study (High School RIO)	National Athletic Treatment, Injury and Outcomes Network (NATION)
Annual Summary Reports	✓	
Individual School Reports	✓	
Publications	✓	✓
Presentations	✓	✓
Data Requests	✓	✓
Data Injury Statistics Clearinghouse (DISC)	✓	✓
INSITE	✓	

Annual Summary Reports



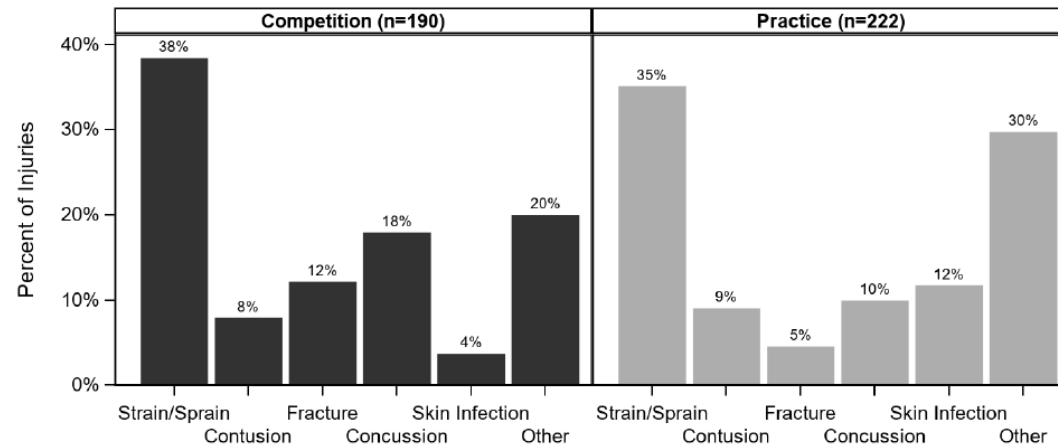
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Individual School Reports

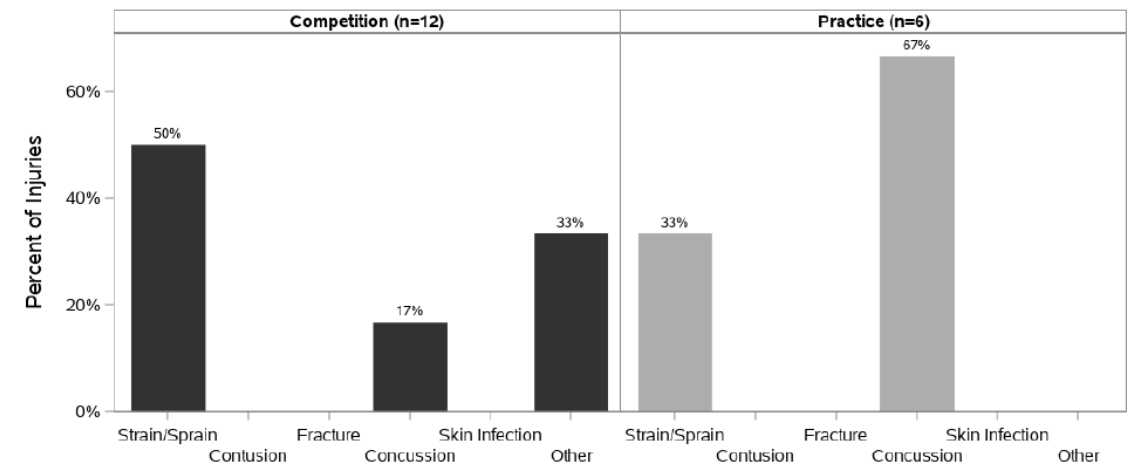
Annual Summary Report

Figure 9.1 Diagnosis of Boys' Wrestling Injuries by Type of Exposure, High School Sports-Related Injury Surveillance Study, US, 2021-22 School Year



Individual School Report

Figure 9.1 Diagnosis of Boys' Wrestling Injuries by Type of Exposure, High School Sports-Related Injury Surveillance Study, US, 2021-22 School Year



Publications

2023

Azadani EN, Peng J, Townsend JA, Collins CL. Traumatic dental injuries in high school athletes in the United States of America from 2005 to 2020. *Dent Traumatol*. 2023 Apr;39(2):109-118. doi: 10.1111/edt.12800. Epub 2022 Nov 1. PMID: 36317716.

2022

Ngatuvai MS, Yang J, Kistamgari S, Collins CL, Smith GA. Epidemiological Comparison of ACL Injuries on Different Playing Surfaces in High School Football and Soccer. *Orthop J Sports Med*. 2022 May 5;10(5):23259671221092321. doi: 10.1177/23259671221092321. PMID: 35547616; PMCID: PMC9083053.

Kerr ZY, Nedimyer AK, Simon JE, Kossman MK, Corbett RO, Chandran A. The Epidemiology of Ankle Sprains in US High School Sports, 2011-2012 to 2018-2019 Academic Years. *J Athl Train*. 2022 Nov 1;57(11-12):1030-1038. doi: 10.4085/1062-6050-0664.21. PMID: 35271730; PMCID: PMC9875707.

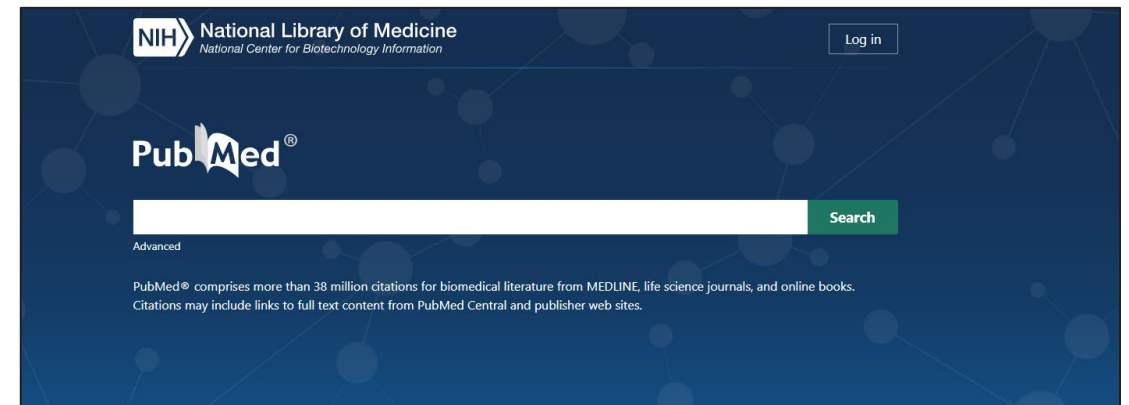
2021

Ritzer EE, Yang J, Kistamgari S, Collins CL, Smith GA. An epidemiologic comparison of acute and overuse injuries in high school sports. *Inj Epidemiol*. 2021 Aug 11;8(1):51. doi: 10.1186/s40621-021-00344-8. PMID: 34380551; PMCID: PMC8356388.

Kerr ZY, Pierpoint LA, Rosene JM. Epidemiology of Concussions in High School Boys' Ice Hockey, 2008/09 to 2016/17 School Years. *Clin J Sport Med*. 2021 Jan;31(1):e21-e28. doi: 10.1097/JSM.0000000000000697. PMID: 30451700

2020

Hammer E, Brooks MA, Hetzel S, Arakkal A, Comstock RD. Epidemiology of Injuries Sustained in Boys' High School Contact and Collision Sports, 2008-2009 Through 2012-2013. *Orthop J Sports Med*. 2020 Feb 25;8(2):2325967120903699. doi: 10.1177/2325967120903699. PMID: 32133385



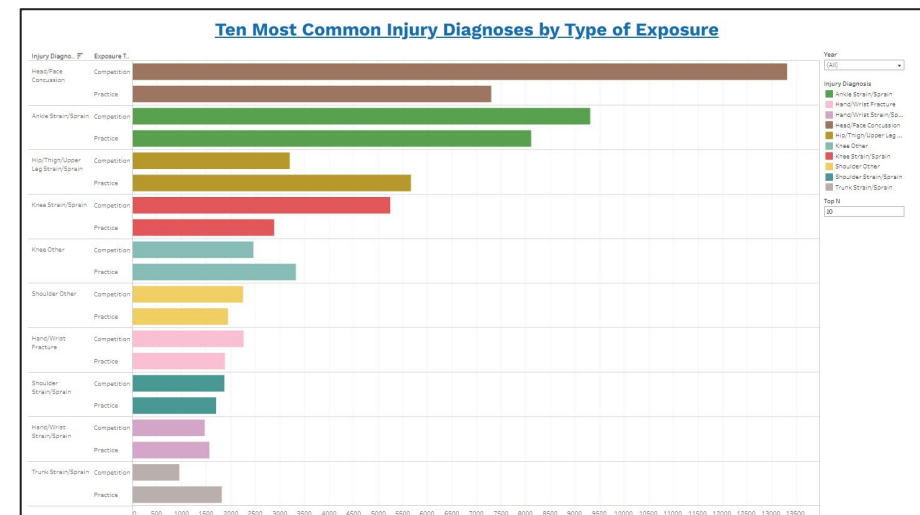
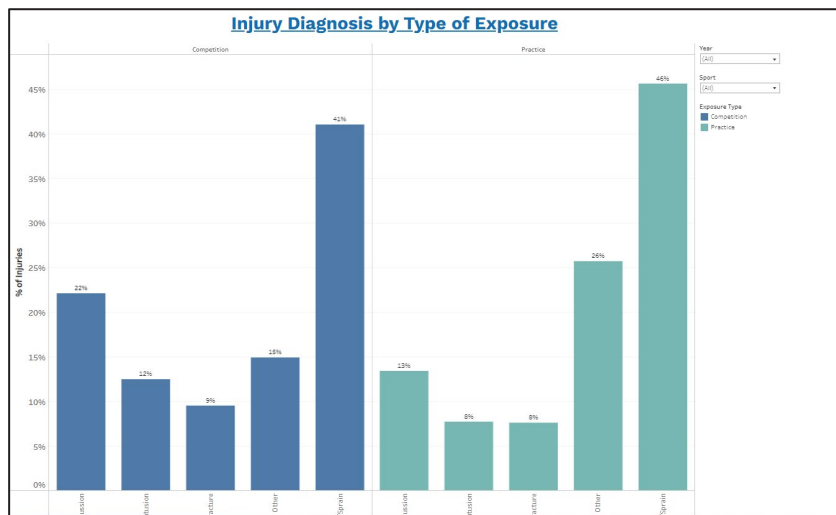
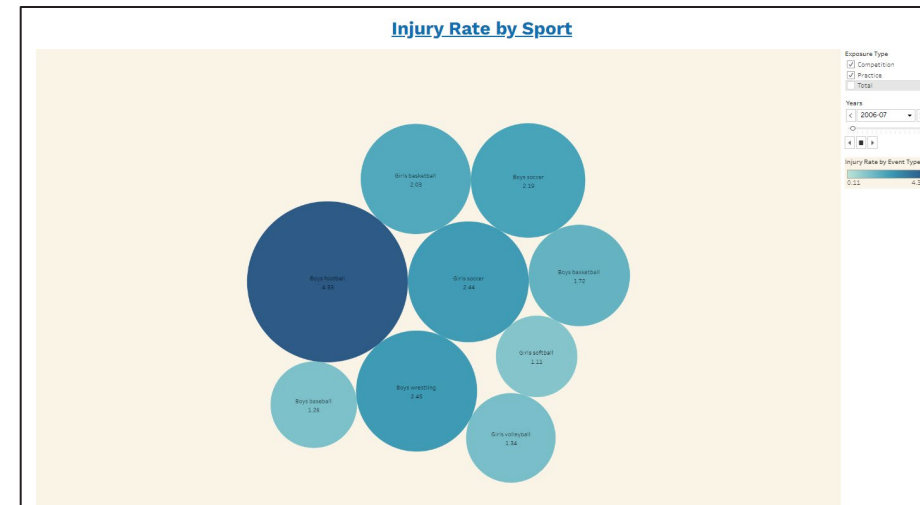
<https://pubmed.ncbi.nlm.nih.gov/>

<https://datalyscenter.org/resources/high-school-rio/>

Data Injury Statistics Clearinghouse (DISC)

- Researchers from academic institutions (including students of all levels) can request High School RIO and NATION data to publish, present at a conference, use for a dissertation or thesis, etc.
- Must submit a DISC application
 - Project title, synopsis, specific aims, significance and innovation, research strategy, information about the study team, etc.
- Applications first undergo an internal review by Datalys staff then undergo full review by the Datalys Scientific Advisory Board (SAB) during quarterly meetings.

INSITE – sportinjuryinsights.com



Objectives

1. *Educate* the NFHS membership about ongoing injury surveillance efforts at secondary schools in the United States
2. *Demonstrate* how data from secondary schools are used to make evidence-based decisions to reduce the risk of sports injury
3. *Educate* the NFHS membership about available data that can be used to understand the risk and patterns of sports-related injuries

Conclusions

- Injury surveillance is an important part of keeping 8.1 million high school athletes healthy and participating in high school sports.
- The benefits of participating in injury surveillance outweigh the time burden of reporting.
- Injury surveillance data can benefit all secondary schools, regardless of participation.
 - Need to get the data into the hands of the people who can prevent injuries
 - From “computer to community” just as important as “from bench to bedside”

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- Questions?

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