

Bumps, Bruises, or Something
More? What the Research Says
About Youth Who Play Sports

Helping Schools Collect and
Understand Data on Injuries and
Concussions

NASHIA webinar

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Mathematica Policy Research

- A social policy research firm dedicated to providing objective evidence for decision makers on policies and programs of national importance
- For more information:
 - Mathematica Policy Research:
<https://www.mathematica-mpr.com/>
 - Mathematica’s research in concussion & TBI:
<https://www.mathematica-mpr.com/our-focus-areas/health/population-health/concussion>



The screenshot shows the Mathematica Policy Research website. At the top, the logo "MATHEMATICA Policy Research" is on the left, and navigation links "Our Capabilities", "Our People", and "Our Focus Areas" are on the right. Below the logo are links for "Log in" and "Register". A breadcrumb trail reads "Home > Our Focus Areas > Health > Population Health > Concussion". The main heading is "Concussion". Below the heading is an image with a green-to-yellow gradient background showing white silhouettes of a football player, a child with a ball, and a lacrosse player. Below the image is a paragraph of text.

MATHEMATICA
Policy Research

Our Capabilities Our People Our Focus Areas

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Home > Our Focus Areas > Health > Population Health > Concussion

Concussion



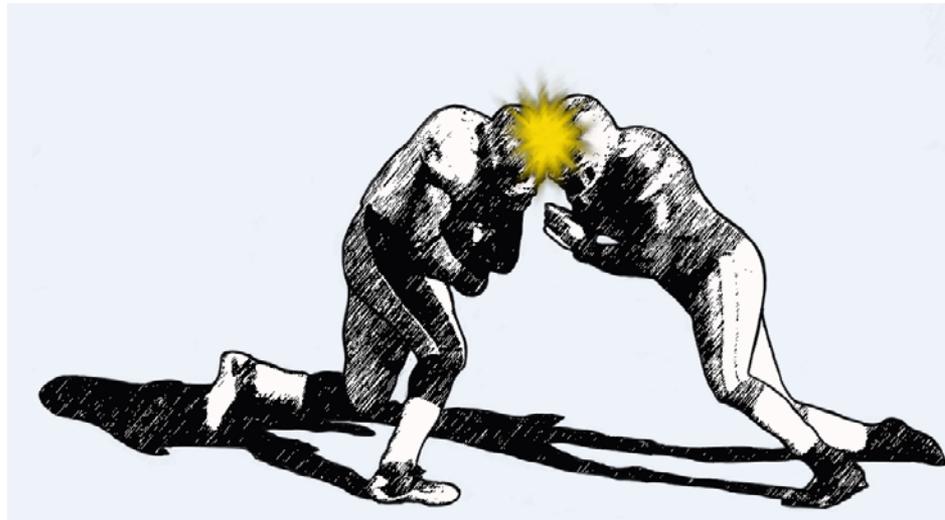
Concussions among young athletes are a public health issue of great concern to parents, coaches, athletic directors, and the athletes themselves. Each year, more than 170,000 children and teens are treated in hospital emergency departments for sports- or recreation-related traumatic brain injuries, including concussions. And those are only the incidents that are reported and diagnosed—the true number of young athletes suffering head impacts and concussions is likely higher.

Overview

- **Update on Mathematica's use of impact sensor technology in two studies:**
 - **Sensors as a Social Intervention: Qualitative Investigation (SAASI: QI)**
 - **Sensors and Football: Evaluating Tackling in Youth (SAFETY)**
- **Challenges for the future**
- **Mathematica's Injury Dashboard and Analytics Program (IDAP)**
- **IDAP: prototype**
- **Next steps**

Sensors as a Social Intervention: Qualitative Investigation

- **Qualitative study conducted with schools that were already using head impact sensors**
- **Head impact sensors measure the magnitude and direction of g forces which are physical forces produced as a result of contact**



Findings from SAASI: QI

- **Findings revealed:**

- **Head impact sensors are not diagnostics, and should not be used as such**
- **An adequate implementation plan for these sensors is necessary**
- **Sensors have the potential to be part of the solution for better addressing the concussion issue in youth sports**



What Is the SAFETY Study?

- **Sensors and Football: Evaluating Tackling in Youth is funded by the Centers for Disease Control and Prevention (CDC) (September 2016 to December 2018)**
- **Generates new evidence on head impacts in youth football players to assist in making evidence-based decisions about youth football**
- **Goals:**
 1. **Generate rich descriptive data on head impacts and concussions in youth leagues across age, skill level, and program type (tackle or flag football)**
 2. **Evaluate an alternative tackling technique that has been gaining popularity as a safer approach**
 3. **Understand the experiences of coaches and their perceptions about player safety**

Challenges for the Future

- **Mathematica's work with schools and our conversations with important entities like CDC have led us to three conclusions:**
 - **Schools want better systems to track injuries and conduct analytics**
 - **Our country needs a national system for reporting injuries and concussions that will enable better surveillance and analytics**
 - **Expertise in data collection and analytics is necessary in order to successfully manage and generate meaningful evidence from the disparate sources of data that emerge in this field**

A Solution for the Future: Injury Dashboard and Analytics Program (IDAP)

- **Mathematica’s Injury Dashboard and Analytics Program (IDAP) is an innovative data hub and interactive platform that addresses the challenges noted earlier by implementing the following solutions:**
 - The “hub” can connect to existing data platforms, integrating data from different systems as well as multiple data sources (e.g., injury data, sensor data, etc.)
 - The platform allows for simple descriptive analytics as well as more robust predictive analytics
 - The platform puts the power of research in the hands of school officials by allowing them to conduct experiments and data analysis under the guidance of a Mathematica researcher who provides robust technical assistance
 - A new partnership with the Network for Public Health Law allows schools to be informed if they are in compliance with the traumatic brain injury laws in their state

IDAP: Prototype

Last Updated On Mar 30, 2017

School

All

Overview Metrics

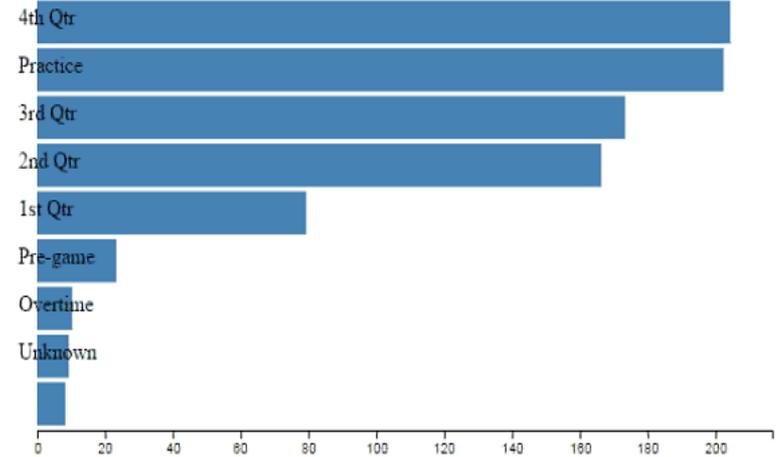
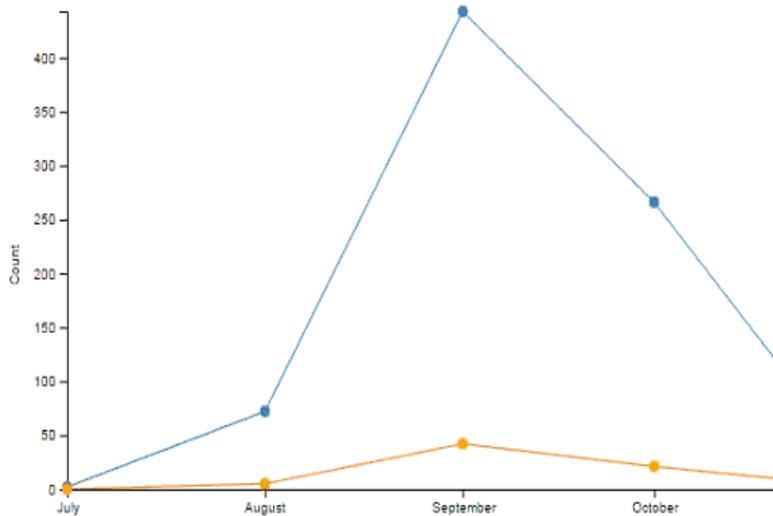
- 6 students currently out of school
- 662 students injured in 2016-2017 school year
- 182 learning days lost in 2016-2017 school year
- 50 severe injuries in 2016-2017 school year
- 71 concussions diagnosed in 2016-2017 school year
- 2 students with multiple concussions diagnosed in 2016-2017 school year

Current Injured Students

Student	Injury	Sport	Date of Injury	Concussion
Leatha Huel	Head	Football	Aug 28, 2016	
Dan Jakubowski	Other	Football	Sep 9, 2016	
Elliot Wolff	Head	Football	Sep 9, 2016	●
Shannon Reilly	Ankle	Football	Sep 9, 2016	
Alexander Borer	Shoulder	Football	Sep 9, 2016	
Ryley Jones	Shoulder	Football	Sep 16, 2016	

Group By

Part Of Game



Next Steps for Mathematica

- **Continue collecting data on tackle teams this fall and begin collecting data in the spring with flag teams**
- **The data collected will generate a novel level of evidence on head impacts in youth football**
- **Continue developing IDAP through 2017**
- **Actively look for schools interested in trying IDAP starting in 2018**



For More Information

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