CONCUSSION RESEARCH

We are conducting research to make sports safer in Michigan.

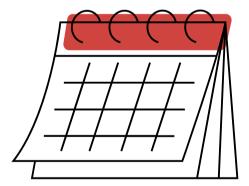
Concussions, while always serious, can be treated. While there are risks to school sports, there are also benefits to student athletes. But to keep Michigan athletes safe, we need to learn more about concussions.

As researchers, we are trying to answer important questions. Here is what we've found in Michigan so far:

Who is getting concussions?

In high school, boys concussion rates are higher overall, but in comparable sports, girls have higher rates. ^{1,2}This could be due to factors including biological, anatomical, and reporting differences. In girls' sports, basketball, soccer, lacrosse, competitive cheer, and gymnastics had the highest rates. In boys' sports, football, ice hockey, and wrestling had the highest concussion rates. Notably, in sports played by both boys and girls, such as basketball and soccer, girls experienced higher concussion rates than boys.³





2

How long does it take to recover?

The median recovery time is 11 days for student athletes. However, some students take up to one month to recover. This shows that recovery depends on the student.

How much school do students miss after a concussion?

While many athletes miss zero to only a few school days after a concussion, missing more school can be linked to longer recovery times. Also, access to athletic trainers is important for recovery?



When are athletes getting concussions?

Concussions are the most common at the middle or end of a practice or game." Knowing when athletes are most at risk can help allocate prevention resources.



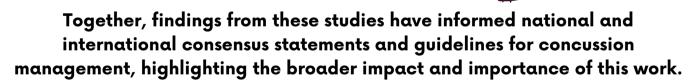


How can we improve concussion management? We can train coaches to recognize signs,

have athletic trainers on the field, remove athletes with suspected concussions, and work with appropriate healthcare providers helps student athletes to get back to sports safely.9 Research shows that not all students have equal access to athletic trainers, so improving access is important for concussion management.

What is being done to prevent concussions?

Limiting collisions during practices is one thing that can prevent concussions.¹⁰ There is still a lot of research that can be done on concussion prevention."



Your continued participation in this research can help us answer these questions, answer new questions, and make participation in sports safer.

> Scan this QR code to view the references









UNIVERSITY OF MICHIGAN

- 1.Bretzin, A. C., Covassin, T., Fox, M. E., Petit, K. M., Savage, J. L., Walker, L. F., & Gould, D. (2018). Sex Differences in the Clinical Incidence of Concussions, Missed School Days, and Time Loss in High School Student-Athletes: Part 1. The American journal of sports medicine, 46(9), 2263–2269. https://doi.org/10.1177/0363546518778251
- 2.Bretzin, A. C., Covassin, T., Wiebe, D. J., & Stewart, W. (2021). Association of Sex With Adolescent Soccer Concussion Incidence and Characteristics. JAMA network open, 4(4), e218191. https://doi.org/10.1001/jamanetworkopen.2021.8191
- 3.Bretzin AC, Pollard-McGrandy AM, Davis ER, Wiebe DJ, Covassin T. Avenues for prevention using the epidemiology of sport-related concussion from a large high school surveillance study. Neurosurg Focus. 2024;57(1):E3. doi:10.3171/2024.4.FOCUS24153
- 4. Patricios JS, Schneider KJ, Dvorak J, et al. Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport-Amsterdam, October 2022. Br J Sports Med. 2023;57(11):695-711. doi:10.1136/bjsports-2023-106898
- 5. Covassin, T., Bretzin, A. C., Beidler, E., & Wallace, J. (2021). Time-to-Event Analyses: Return to Unrestricted Participation After Sport-Related Concussion in a Cohort of High School Athletes. Journal of athletic training, 56(3), 286–293. https://doi.org/10.4085/1062-6050-0150-20
- 6.Covassin T, Pollard-McGrandy AM, Klein LA, Wiebe DJ, Bretzin AC. Missing School Days Following Sport-Related Concussion in High School Athletes. JAMA Netw Open. 2024;7(10):e2440264. Published 2024 Oct 1. doi:10.1001/jamanetworkopen.2024.40264
- 7. Bretzin, A. C., Zynda, A. J., Pollard-McGrandy, A. M., Wiebe, D. J., & Covassin, T. (2024). Acute Sport-Related Concussion Management and Return to Sport Time in High School Athletes. The American journal of sports medicine, 3635465231219263. Advance online publication. https://doi.org/10.1177/03635465231219263
- 8. Covassin, T., Petit, K. M., Savage, J. L., Bretzin, A. C., Fox, M. E., Walker, L. F., & Gould, D. (2018). Sports-Related Concussion Occurrence at Various Time Points During High School Athletic Events: Part 2. The American journal of sports medicine, 46(9), 2270–2276. https://doi.org/10.1177/0363546518780225
- 9. Zynda, A. J., Petit, K. M., Anderson, M., Tomczyk, C. P., & Covassin, T. (2021). Removal From Activity After Sports-Related Concussion in Sex-Comparable Sports From the Michigan High School Athletic Association. The American journal of sports medicine, 49(10), 2810–2816. https://doi.org/10.1177/03635465211020007
- 10.Bretzin, A. C., Tomczyk, C. P., Wiebe, D. J., & Covassin, T. (2022). Avenues for Sport-Related Concussion Prevention in High School Football: Effect of Limiting Collision Practices. Journal of athletic training, 57(8), 733–740. https://doi.org/10.4085/1062-6050-0341.21
- 11. Eliason, P. H., Galarneau, J. M., Kolstad, A. T., Pankow, M. P., West, S. W., Bailey, S., Miutz, L., Black, A. M., Broglio, S. P., Davis, G. A., Hagel, B. E., Smirl, J. D., Stokes, K. A., Takagi, M., Tucker, R., Webborn, N., Zemek, R., Hayden, A., Schneider, K. J., & Emery, C. A. (2023). Prevention strategies and modifiable risk factors for sport-related concussions and head impacts: a systematic review and meta-analysis. British journal of sports medicine, 57(12), 749–761. https://doi.org/10.1136/bjsports-2022-106656

