

# High school students with multiple concussions report increased suicidal behavior

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High school students—particularly males—who reported a history of

concussion in the last year were more likely to engage in suicidal thoughts, planning or attempts than their nonconcussed peers, according to a study by a research team that includes a researcher at the University of Michigan.

The paper is [published](#) in the *Journal of Athletic Training*.

Male teens who reported two or more concussions in the past year were twice as likely to report a [suicide attempt](#) than [males](#) who reported one concussion. Increased odds of [suicidal behaviors](#) were similar for females regardless of concussion frequency.

"This type of research is never easy to discuss, but it is vitally important to understand who is at risk and why," said study co-author Steve Broglio, professor of kinesiology and director of the University of Michigan Concussion Center. "Anyone who has concern for any student-athlete should not be afraid to reach out and help find the appropriate resources."

This is believed to be the first known study to examine the relationship between suicidal behaviors and concussion frequency in a nationally representative sample of U.S. [high school students](#).

"From broader literature we know that brain injuries, like concussion, can precipitate or exacerbate [mental health challenges](#)," said lead author Jacob Kay, rehabilitation scientist at Prisma Health Children's Hospital and the University of South Carolina. "Our study further highlights the importance of evaluating mental health among both male and female youth that have sustained a concussion. This is particularly true for those who have sustained multiple concussions in a short time."

Other study highlights include:

- 15% of students reported one or more concussions and 6% reported two or more concussions in the past year
- 17% of males and 13% of females reported one or more concussions in the past year
- 44% of females vs. 24% of males reported feeling sad or hopeless
- 24% of females vs. 13% of males reported having [suicidal thoughts](#)
- 19% of females vs. 10% of males reported planning suicide
- 10% of females vs. 5% of males reported attempting suicide
- 3% of females and 1% of males reported an injury from an attempted suicide
- Medical professionals should closely evaluate and monitor mental health in youth, especially those with a recent history of repetitive concussions

In general, research indicates that [females](#) may struggle a bit more following concussion, Kay said. There are several biological and sociocultural explanations for observed sex differences that are yet to be fully understood. Though the authors emphasize caution in drawing causation from the present study, they speculate their findings indicate males may engage suicidal behaviors in a more impulsive manner.

There is also a known "silent struggle" among males regarding mental health, Kay said.

"In the context of concussion, this could mean there are even fewer red flags among males intending self-harm," he said.

Interest is growing in the relationship between concussions and mental health, but research on youth is lacking. This study sought to examine that association by looking at concussion frequency and [mental health](#) outcomes among biological male and female high school students.

Researchers analyzed 2017 and 2019 data from 17,397 respondents from the National Youth Risk Behavior Surveillance System.

**More information:** Jacob J. M. Kay et al, Concussion Exposure and Suicidal Ideation, Planning, and Attempts Among US High School Students, *Journal of Athletic Training* (2022). [DOI: 10.4085/1062-6050-0117.22](https://doi.org/10.4085/1062-6050-0117.22)

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