

Mandated headgear may lower concussion risk among high school lacrosse players

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Mandated headgear meeting professional standards may lower the risk of concussion among high school girls playing lacrosse, suggests research published online in the *British Journal of Sports Medicine*.

The concussion rate was lower in the US state where protective headgear is mandatory for high school lacrosse players than in states without such a mandate.

It may now be worth considering protective headgear for high school players and possibly for other levels of play, such as youth or collegiate level teams, suggest the researchers.

Girls' lacrosse continues to be the fastest growing high school sport in the U.S.. Until the pandemic, participation had grown by nearly 54% over the past decade, note the researchers.

While a non-contact sport, incidental concussions and head impacts are common during lacrosse. Because of the non-contact rules for girls' lacrosse, mandated protective equipment is limited to mouthguards and eyewear.

In response to growing concerns about the level of incidental contact in the game, the use of soft-shell headgear meeting the ASTM International F3137 performance standard has been permitted since January 2017.

But the use of headgear in lacrosse is the subject of heated debate, with detractors arguing that it prompts more aggressive 'compensatory' behaviors during play, contributing to increased [injury](#) risk.

To explore the issues further, the researchers compared concussion rates among [high school girls](#)' lacrosse players in the state of Florida, where headgear was mandated in 2018, with 31 states without a headgear mandate for the 2019, 2020, and 2021 seasons.

The researchers drew on concussion injury and risk of injury (exposure) data entered into an existing national high school injury registry by [athletic trainers](#): the High School National Athletic Treatment, Injury

and Outcomes Network (NATION).

Concussions were defined as injuries that occurred as a result of participation in a girls' high school lacrosse game or practice and diagnosed by an athletic trainer, doctor, or other healthcare professional.

To count, a single athlete had to have actively taken part in one high school-sanctioned practice or game, regardless of duration, in which she was exposed to the risk of injury.

Over a total of 289 school seasons (mandated 96; 193 without a mandate) between 2019 and 2021, 141 concussions (25 mandated; 116 without a mandate) were reported across all games and practices during more than 357, 225 exposures (91,074 mandated; 266,151 without a mandate), resulting in an overall rate of 0.39 concussions/1000 athlete exposures.

Overall, the concussion injury rate per 1000 athlete exposures was higher among the group without a mandate (0.44) than in the group with a mandate (0.27).

The concussion rate was higher during match play than during practice for both groups, but significantly (74%) higher during matches among players without mandated headgear.

The researchers acknowledge that not all high schools have athletic training services available or access to NATION monitoring, so this may limit the generalisability of their findings to schools without such services, which are more likely to be in more [deprived areas](#).

And they emphasize: "The results of this study are highly encouraging for [athlete](#) safety in high school girls' lacrosse; however, a measure of caution should be employed given that this study did not employ

randomisation or comparisons of injury rates pre and post mandate within the state of Florida."

Nevertheless, they write: "Our findings provide evidence that mandated use of lacrosse headgear reduces the incidence of concussion in high [school](#) girls' lacrosse game play. We observed that girls participating in states not mandating lacrosse headgear had a 59% greater overall incidence of concussion than those required to wear headgear.

"Moreover, a 74% greater incidence of [concussion](#) was observed during game play in states not mandating headgear."

And they suggest: "It is possible that protective [headgear](#) may have similar effects in different populations of girls' lacrosse. These may include athletes at the collegiate level or higher, athletes at the developmental, or youth levels or athletes of the same age who are participating in club lacrosse."

More information: Association of headgear mandate and concussion injury rates in girls' high school lacrosse, *British Journal of Sports Medicine* (2022). [DOI: 10.1136/bjsports-2021-105031](https://doi.org/10.1136/bjsports-2021-105031)

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