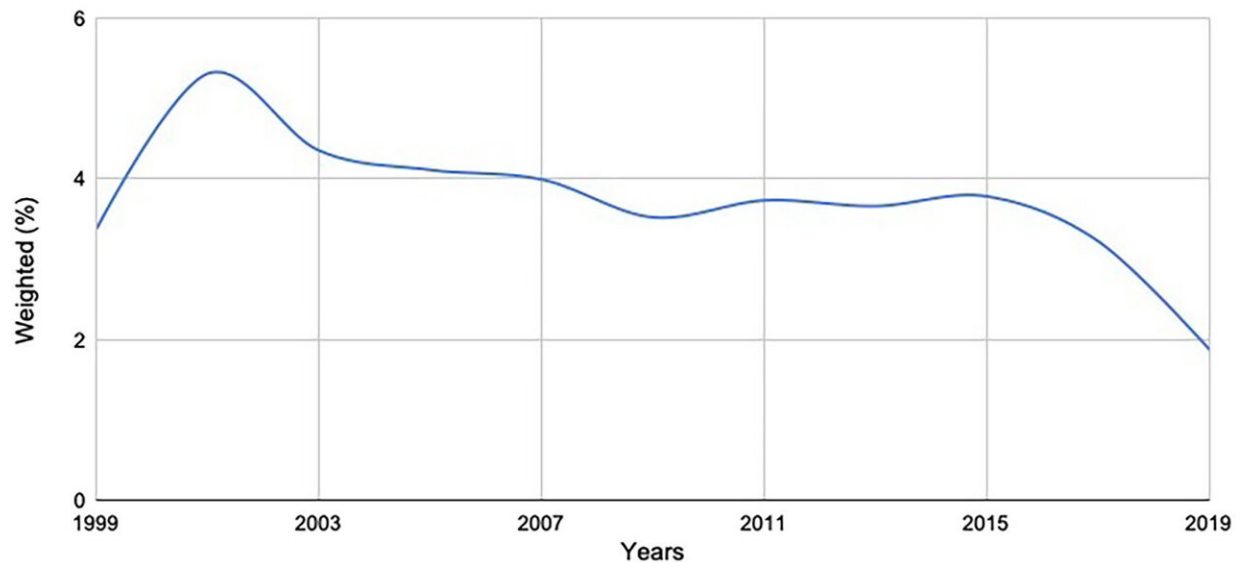


Steroid-using US high school athletes more likely to sustain concussion, study finds

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Trends in steroid use (weighted %) among high school athletes from 1999 through 2019. Credit: *Journal of Osteopathic Medicine* (2023). DOI: 10.1515/jom-2023-0133

More than half of US high school athletes who use anabolic steroids report having sustained a concussion, compared to around a fifth of those who do not use steroids, a new study published in the *Journal of Osteopathic Medicine* finds.

Kennedy Sherman of Oklahoma State University College of Osteopathic

Medicine at Cherokee Nation and colleagues used data from a Youth Risk Behavior Surveillance System (YRBSS) survey to examine the incidence of steroid use and concussion in US high school athletes.

The researchers found that 3.7% of such athletes reported previous steroid use and 20.7% reported having sustained a concussion. For athletes who did not use steroids, 19.6% reported a concussion, but for those using steroids, the rate of concussions was significantly higher at 54.6%.

The use of anabolic steroids by US high school athletes is a well-documented problem. Most athletes use them to increase [muscle strength](#) and lean muscle mass which can lead to an increase in [body mass index](#) (BMI). The use of [anabolic steroids](#) can also lead to severe, long-lasting and sometimes irreversible damage. They can cause early heart attacks, strokes, liver tumors, [kidney failure](#), male infertility and [psychiatric problems](#), as well as having behavioral impacts such as increased aggression and anxiety, and decreased impulse control.

Kennedy Sherman says, "The neurobehavioral shifts of steroid use may lead to increased aggressive play and a subsequent heightened risk for concussions. Moreover, athletes using [steroids](#) are likely to have higher muscle volume and increased muscle strength, amplifying the momentum and impact of head-on collisions. Steroid use and concussions each have numerous health consequences, and when occurring together in a person, these effects may be amplified."

The study also found that the prevalence of steroid use among high school athletes decreased from 3.4% in 1999 to 1.9% in 2019, with the highest rates occurring in 2001 and 2003 at 5.3% and 4.4% respectively. However, its use varied significantly across [ethnic groups](#), with the highest rate being 7.2% for the American Indian/Alaska Native group.

The researchers stressed the need for coaches to be aware of potential steroid use among players, and urge coaches, trainers and physicians to apply concussion protocols and remove players from games for evaluation when a concussion is suspected.

More information: Kennedy Sherman et al, Association between steroid use and concussions among high school athletes: a cross-sectional analysis of the Youth Risk Behavior Surveillance System, *Journal of Osteopathic Medicine* (2023). [DOI: 10.1515/jom-2023-0133](https://doi.org/10.1515/jom-2023-0133)

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