

Is concussion associated with abnormal menstrual patterns in young women?

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A study of nearly 130 girls and young women suggests concussion was

associated with increased risk of having two or more abnormal menstrual bleeding patterns, according to an article published by *JAMA Pediatrics*.

The study by Anthony P. Kontos, Ph.D., of the University of Pittsburgh Medical Center Sports Medicine Concussion Program, Pennsylvania, and coauthors included adolescent and [young women](#) (ages 12 to 21) with a sports-related [concussion](#) or a nonhead sports-related orthopedic injury for comparison. They were followed up for 120 days after injury and menstrual patterns were assessed using a text message link to an online survey about bleeding patterns.

Survey responses resulted in 487 menstrual patterns in 128 patients (average age about 16). The authors report that 57 of 128 patients (44.5 percent) had at least one abnormal bleeding [pattern](#) during the study, with no difference between the injury groups.

Among the 68 patients with concussion, 16 (23.5 percent) experienced two or more abnormal menstrual patterns during the study compared with 3 of the 60 patients (5 percent) with a nonhead orthopedic injury, according to the results.

The findings suggest more subtle forms of brain [injury](#), such as concussion, may adversely affect HPO [hypothalamic-pituitary-ovarian] axis function (this governs the [menstrual cycle](#)) and therefore menstrual cycles through a number of proposed mechanisms leading to disrupted gonadotropin secretion, according to the article.

Limitations of the study include self-reported menstrual patterns. The authors also could not account for other factors that could affect menstrual patterns.

"We recommend monitoring menstrual patterns after concussion. ... Larger studies with hormonal assessments and long-term follow-up are

needed to better understand the effect of concussion on the HPO axis and potential implications for menstrual patterns, estrogen production and any persistent consequences," the article concludes.

More information: *JAMA Pediatrics* (2017). [DOI: 10.1001/jamapediatrics.2017.1140](https://doi.org/10.1001/jamapediatrics.2017.1140)

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