

# Female Hockey Players Get More Concussions than Male Football Players

Mention concussions among young athletes and most people automatically think youth football, but research increasingly shows that girls who participate in athletics also run the risk of suffering from these traumatic brain injuries. Indeed, girls soccer and girls ice hockey compete with football in rates of concussion and some studies appear to show that girls in high school and college may actually sustain a higher rate of these injuries on the playing field than boys do.

One analysis of college athletic injuries found that female softball, basketball and soccer players experienced concussions at a higher rate — sometimes as much as twice the rate — than their male counterparts. And taking all sports into account, female ice hockey players reported the highest rate of concussions, more than male football players, or nearly three times the rate experienced in football. Some of this disparity also exists in high school, with female soccer players experiencing concussion at twice the rate of male soccer players.

Most doctors believe there's an anatomical explanation. "Girls neck strength is far weaker and can't absorb shock as well," explains Dr. Michael E. Hoffer, a mild traumatic brain injury expert at the University of Miami Health System. "That's just how we're built."

Also, others speculate that women's higher rates of glucose metabolism (a process that generates the body's energy) and the menstrual cycle may also impact recovery. A 2014 study of 144 women revealed that brain injuries during certain phases of the

cycle appeared to take longer to heal, perhaps as a result of the sudden drop in levels of the female sex hormone, progesterone.

Now, a new [study](#) in the Journal of the American Osteopathic Association confirmed a long-held suspicion: adolescent female athletes tend to suffer concussion symptoms twice as long as their male counterparts. Typically it may take them twice as long to recover, a considerable difference.

This latest research, Hoffer points out, is more proof that “this is not just a male football disease. We can’t dismiss this as a guy thing.”

While mild traumatic brain injuries can occur off the field — falls, traffic accidents and assault are among the culprits — youth who play a contact sport tend to have higher rates of concussions. In a [study](#) published in JAMA The Journal of the American Medical Association, a sampling of 13,088 U.S. teens revealed that about 20 percent reported at least one diagnosed concussion in 2016. But for those who had participated in a contact sport, the prevalence was 31.5 percent.

In the study on recovery time, researchers looked at the medical records of 110 male and 102 female athletes, ages 11 to 18, who had suffered a concussion for the first time. The median duration of symptoms was 11 days for boys — but 28 days for girls. In some cases, the symptoms disappeared within three weeks for 75 percent of boys, but only for 42 percent of girls.

Why? Such pre-existing conditions as anxiety, depression, migraines, and stress possibly explain the extended recovery, the study concludes. UHealth's Dr. Hoffer notes that earlier research has shown that concussions can also aggravate some of these same conditions, which are actually more prevalent in girls or at least reported more by girls. What’s more, another study has shown that women tend to experience more eye movement and visual stability issues after a concussion, which can

contribute to longer recovery times.

Hoffer hopes that a growing but still small body of inquiry on girls and concussions will show that concussions are a public health issue that needs further study and funding. There needs to be more research on gender differences in concussions, including why female athletes are more susceptible and what might be some better ways to protect them.

“There may appear to be a lot of research in this area, but there’s still so much work to be done, so much we don’t know.”

### **What are the symptoms of concussion?**

Some concussion symptoms appear immediately, while others may take days or months to show up. Also, those that have been injured may not recognize they’re having problems.

But here’s a handy guide from the Centers for Disease Control and Prevention to help you recognize the signs.

- Headaches
- Dizziness, balance problems
- Nausea or vomiting
- Sensitivity to noise or light
- Fuzzy or blurry vision
- Difficulty remembering things
- Difficulty thinking clearly and difficulty concentrating.
- Having trouble sleeping
- Feeling more agitated
- Sadness, nervousness, anxiety, feeling more emotional

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## ***In Their Words***

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