



# Concussion and Sports

## What is a concussion?

- A concussion, also known as a mild traumatic brain injury (MTBI), is caused by a bump, blow, or jolt to either the head or the body that causes the brain to move rapidly inside the skull. A concussion changes how the brain normally functions.
- Concussions can have serious and long-term health effects, and even a seemingly mild 'ding' or a bump on the head can be serious.
- Signs and symptoms of concussion include headache, nausea, fatigue, confusion or memory problems, sleep disturbances, or mood changes; symptoms are typically noticed right after the injury, but some might not be recognized until days or weeks later.

## How many sports concussions occur each year?

- An estimated 1.6-3.8 million sports- and recreation-related concussions occur in the United States each year.<sup>1</sup>
- During 2001-2005, children and youth ages 5-18 years accounted for 2.4 million sports-related emergency department (ED) visits annually, of which 6% (135,000) involved a concussion.<sup>2</sup>

## In what sports are concussions most often reported?

- Among high school athletes, concussions are most often caused by contact with an opponent, a team mate, the ground, or a piece of equipment or object in the playing area.<sup>3</sup>
- In organized high school sports, concussions occur more often in competitive sports, with football accounting for more than 60% of concussions.<sup>4</sup>
- For males, the leading cause of high school sports concussion is football; for females the leading cause of high school sports concussion is soccer.<sup>4</sup>
- Among children and youth ages 5-18 years, the five leading sports or recreational activities which account for concussions include: bicycling, football, basketball, playground activities, and soccer.<sup>2</sup>



## What is known about sports concussion risk and recovery?

- High school athletes' recovery times for a sports concussion are longer than college athletes' recovery times.<sup>5</sup>
- High school athletes who sustain a concussion are three times more likely to sustain a second concussion.<sup>3</sup>
- Lack of proper diagnosis and management of concussion may result in serious long-term consequences, or risk of coma or death.<sup>6,7</sup>

## How can sports concussions be prevented?

Make sure that while participating in sports or recreational activities you or your children:

- Use the right protective equipment for the sport or activity, and be sure that it is properly fitted and maintained and worn correctly and consistently.
- Follow safety rules and those for the sport.
- Practice good sportsmanship at all times.

## What should you do if you think you or your child has had a concussion?

- Seek medical attention right away.
  - A health care professional will be able to decide when it is safe to return to sports.
- Do not return to play with a known or suspected concussion until evaluated and given permission by an appropriate health care professional.
  - Second concussions that occur before you have recovered can be very serious.
- Tell your coach or child's coach about any recent concussions.



## References:

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3. Guskiewicz KM, Weaver NL, Padua DA, Garrett WE. Epidemiology of concussion in collegiate and high school football players. *Am J Sports Med.* 2000;28(5);643-50.
4. Powell JW, Barber-Foss KD. Traumatic brain injury in high school athletes. *JAMA.* 1999;282(10);958-63.
5. Field M, Collins MW, Lovell MR, Maroon J. Does age play a role in recovery from sports-related concussion? A comparison of high school and collegiate athletes. *J Pediatrics.* 2003;142(5);546-53.
6. Department of Health and Human Services (US), Centers for Disease Control and Prevention. Sports-related recurrent brain injuries – United States. *MMWR.* 1997;46(10);224-27.
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***It is better to miss one game than the whole season.***