Heading Off Trouble

*By Guy Falotico*

**Concussions can be more than just a headache.**

It all happened so fast. One minute, M.J. B., a teen from Connecticut, was playing in a high school football game; the next, he was on the sidelines after being knocked a little dizzy. He had suffered a concussion—and no one knew it.

“I don’t really remember what happened,” M.J., 16, says. “I had no idea what a concussion was. But later I went back into the game.”

M.J. suffered the first of three concussions in October 2007. The last one ended his gridiron career. “I’m done with football for life now,” M.J. says. If the medical profession knew “even just three years ago” what it knows now, he adds, “I could still be playing. I still have trouble in school, and my memory is terrible right now.”

Stories such as M.J.’s are more common than you might think. In the 2007–2008 school year, American high school athletes suffered an estimated 137,000 concussions. Football caused the most—more than 70,000. Surprisingly, though, girls soccer had the second most (24,000), followed by boys soccer (17,000) and girls basketball (7,000). But you don’t have to play sports to get a concussion; you can also suffer one as a result of hitting your head during a hard fall or in a car accident.

**What Is a Concussion?**

Your brain is protected by your bony skull and a liquid called spinal fluid. The fluid acts as a cushion between your brain and your skull. There is enough fluid to keep your brain safe when you hit your head lightly. But a more extreme, sudden hit—the kind of hit that’s hard enough to cause your brain to bang against your skull, such as certain types of collisions on a football field—can result in bruising, tearing of blood vessels, and injury to nerves.

That can lead to a temporary loss of normal brain function—a concussion. You may feel dizzy, confused, or tired, and you may have headaches or an upset stomach, but those noticeable symptoms should go away within two weeks. Doctors diagnose concussions based on clinical information (such as whether a person is knocked out or vomiting) and by testing memory, coordination, and other brain functions. They may also perform a CT
(computed tomography) scan, which is like an X-ray of the brain, to assess the damage. There is no medicine or medical treatment to cure a concussion—rest is the only remedy.

Niki P., 17, a basketball player from New Jersey, has had 11 concussions since seventh grade. Seven were sports related, involving everything from diving for a loose ball to hitting her head on a locker room door. Unfortunately, she’s become rather familiar with what it’s like to get a concussion.

“They all felt somewhat the same,” she says. “Some were worse than others, like the time I was blinded for a few minutes or the time my body twitched for a few weeks.” Niki notes that she doesn’t remember how a concussion actually feels when it’s happening. “But after a concussion, you feel so tired and exhausted. And you have a constant migraine for what seems like an eternity. You get so sensitive to lights and sounds, and it almost feels like every emotion is turned up.”

A Crushing Blow

Failure to give the brain a chance to heal, or suffering numerous concussions, can lead to more long-term problems—even death. “I still have headaches every minute of every day,” says Niki, who had to kiss her basketball ambitions good-bye. “Sometimes the headaches get worse throughout the day, but the pain is always there. I also have some learning and concentration issues since the head injuries. It’s hard for me to get through a whole day at school without resting my brain in between classes.”

Such potential long-term problems have spurred scientists to learn more about concussions and prompted a movement to increase awareness and prevention. In 2009, Niki joined former National Football League (NFL) players in testifying before Congress. They urged the government to develop guidelines to manage concussions and ways to better prevent, diagnose, and treat sports-related concussions in schools. The NFL has taken its own steps to manage and prevent the condition as well. Dr. Stanley A. Herring believes the increased awareness of concussions is leading to improved ways to test for, treat, and prevent the condition. He is co–medical director of the Seattle Sports Concussion Program, a partnership of University of Washington Medicine, Harborview Medical Center, and Seattle Children’s Hospital. “Concussions are brain injuries,” says Herring, “and treating these injuries with the respect they deserve is the biggest change I’ve seen in the past couple years.” Herring, who is also the team physician for the NFL’s Seattle Seahawks and Major League Baseball’s Seattle Mariners, adds, “Our greatest challenge is trying to identify what athletes are at greater risk—concussion is
an individual disease. Two people don’t respond the same way to situations that can cause them.”

No Second Chances

Even if scientists and doctors learn better ways to deal with concussions, it’s too late for Niki. Her playing career is over. So are other aspects of everyday life. “I am no longer allowed to play contact sports,” she says. “Giving up basketball is still a huge heartbreak for me. I am also no longer allowed to do other things that I loved doing—ride a train, go in the ocean, go swimming, ride the school bus, go to the movies, drive a car, or anything where I could potentially get hit or pass out.”

Undaunted, Niki is using her misfortune to help others. That includes confronting the “warrior” mentality so many high school athletes possess—even those athletes who know her story. “All athletes need to put aside their egos and bravado and stop thinking that they have to play through anything,” she says. “Even athletes in my school have tried to play with a concussion, and I had to talk to them to convince them to sit out, when they were willing to do just about anything to keep playing.”

Some teens may think that toughing it out and playing through an injury is brave. But with a blow to the head, it’s always better to be safe than to be sorry. “This is one thing in medicine we can do that can really save a life,” says Herring. “It’s better to miss a game than to miss the rest of the season, the rest of your athletic career, or the rest of your life.”

Counting On Coaches
Let’s face it: If you’ve taken such a shot to the head that you have a concussion, you’re probably not in the best frame of mind to know what to do next. That’s where the adults who monitor high school athletes come into play.

“Concussions are brain injuries that need to heal before someone goes back into the game,” says Niki P., a New Jersey 17-yearold whose 11 concussions led her to testify before Congress. “Coaches and parents have to stop pressuring the athletes to play when they don’t feel good. And the athletes need to realize the risk that they take when they go back to sports when they have not completely healed.”

**Tackling Concussions**

The National Football League (NFL) has plenty of firsthand experience dealing with concussions. There were 787 reported concussions in the NFL from 1996 through 2001. In more recent years, studies have found that retired football players who suffered concussions during their careers may be at higher risk for brain damage, dementia, and cognitive decline.
In response, the NFL issued new guidelines on concussion management in 2009. As a result, players who suffer concussions are kept out of action longer in order to heal properly, and better equipment is being developed. In 2002, Riddell, the company that produces the official helmet for the NFL, introduced a model called the Revolution, which reportedly reduces concussions by 31 percent; today, the helmet is being used by some pro players.
1. What acts as a cushion between your brain and your skull?

   A  nerves  
   B  spinal fluid  
   C  gray matter  
   D  memory foam 

2. A concussion is caused by a sudden hit to the head. All of the following are effects of a concussion EXCEPT

   A  upset stomach  
   B  headaches  
   C  dizziness and confusion  
   D  improved coordination 

3. What can you most likely conclude about concussions after reading the passage?

   A  Concussions aren’t as serious as medical experts say they are.  
   B  All concussions result in permanent damage to the brain.  
   C  People should treat concussions as serious injuries.  
   D  Helmets offer complete protection from concussions. 

4. Read these sentences from the passage: “M.J. suffered the first of three concussions in October 2007. The last one ended his gridiron career.”

In this sentence, the word **gridiron** means

   A  a second diagnosis  
   B  related to cooking  
   C  an iron griddle  
   D  a football field 

5. Why does the author include the fourth paragraph (“Stories such as M.J.’s...”) in the passage?

   A  to describe how common it is for young athletes to suffer concussions  
   B  to explain the pros and cons of playing team sports in high school  
   C  to persuade high school boys and girls to avoid playing team sports  
   D  to describe why football should be banned from American high schools
6. According to the passage, which sport caused the second most concussions to American high school athletes?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7. Niki P. has had 11 concussions since seventh grade and is not allowed to play contact sports or do many common activities, such as swimming or driving a car. How did Niki react to her situation? What does this tell us about her as a person?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Failure to give the brain a chance to heal after a concussion can put athletes at risk ______ long-term problems.

    A  or
    B  for
    C  if
    D  and
9. Answer the following questions based on the sentence below.

In 2009, the NFL issued new guidelines on concussion management in response to studies that have shown football players who suffered concussions during their careers may be at higher risk for brain damage, dementia, and cognitive decline.

Who? _________________________________

(did) What? _________________________________

When? _________________________________

Why? In response to studies that have shown football players who suffered concussions during their careers may be at higher risk for brain damage, dementia, and cognitive decline.


Use the vocabulary word in a sentence: ____________________________________________

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