

# BOSTON Parents PAPER

## Concussions: Recovery is More Than Sitting Out a Game

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**T**aylor Twellman suffered a concussion in 2008 when he ran into a goalie while playing for the New England Revolution. The lingering effects forced the one-time Major League Soccer MVP to retire last year at age 30. Today, more than two and a half years after this brain injury, Twellman says he still deals with headaches and occasional fatigue.

It wasn't his only concussion. Twellman had seven diagnosed over 17 years of playing soccer. The first came when he was 14; he sat out for two days afterward and was fine. But he believes it was this last one and how it was handled, not any cumulative effects, that forced him to stop playing.

Twellman tried to play through the 2008 injury because soccer was his job and, as a star player, he was the face of the New England Revolution at the time. As a result, the concussion went untreated for too long, ultimately ending his career.

That, he says, is why no child or teen should feel pressured by the "suck it up" attitude that still exists in youth and professional sports today – especially not when it comes to concussions.

"You only get one brain," he says. "You can't replace it."

Concussions have always been a risky side effect of sports. But they've gotten a lot more attention in the last five years. Check a newspaper or sports news website and there are seemingly daily items on the latest athletes struggling with concussions. Sidney Crosby in hockey. Lindsey Vonn in skiing. Justin Morneau in baseball.

As professional sports leagues try to formulate policy on how to best deal with the injury in their athletes, states are following suit to protect kids – who are more vulnerable to concussion's dangers of brain swelling, permanent brain damage and even death. Last summer, Massachusetts became one of 11 states with a sports concussion law, requiring that, in public schools and schools linked to the Massachusetts Interscholastic Athletic Association:

- An athlete must be removed from play with a suspected concussion and not allowed to return without written medical clearance
- School coaches, trainers, athletic directors and marching band directors, as well as nurses, doctors and parents involved with school activities must annually complete an online educational course about concussions.

The new law reflects a growing understanding that concussion is no longer a case of merely "getting your bell rung."

Rather it's potentially serious, and, while football sees the most incidents, concussions do not discriminate. More than 192,000 estimated concussions were reported in high schools nationwide during the 2009-10 academic year, according to the Center for Injury Research and Policy. Of the sports tracked, girls' soccer had the second highest incidence.

As school districts here respond to the new law's requirements, some high schools, such as Plymouth North, are also hosting presentations for parents by concussion experts. Others, including Brookline High School, have partnered for several years already with Sports Concussion New England, which offers education, neuropsychological assessment, academic support and return-to-play consultation.

But while health professionals hail the increased scrutiny and protective efforts around concussions, they recognize that it's just a start.

"It's easier to pass a law than to implement it," says sports concussion expert Robert Cantu, M.D., clinical professor of neurosurgery at Boston University Medical Center, chief of neurosurgery at Emerson Hospital and a co-founder of the Boston-based Sports Legacy Institute, which strives to solve the sports concussion crisis through research, public education and improved treatment.

Even when the details are hashed out, gaps will likely exist in any concussion policy, Cantu and other health experts say. Concussions aren't straightforward entities. Symptoms exist and can persist in non-quantifiable ways.

New attitudes help, but lingering, misguided thinking about concussions can minimize the seriousness of this injury and lengthen recovery.

"Education is the challenge, especially for parents," says Karl Braun, athletic director at Plymouth North. Some overzealous sports parents, he says, still believe that a concussion isn't serious enough to bench a young athlete.

Bring kids into the mix and you've got another layer of difficulty. Along with the injury itself, there are added challenges of adolescent physiology, identity, innate impatience, and the reality that while the athlete may be off the field, the child recovering from a concussion is still a student with a brain that isn't functioning at its best.

## Understanding the Injury

Making sure that kids with concussions are treated and allowed to recuperate means that, first, adults have to know what to look for. It'd be easier if kids always communicated when there was a problem. But that, in itself, is a problem. Fear and stubbornness can inhibit adolescent honesty.

So can benign ignorance. A 2004 study of Milwaukee high school football players found that the third most common reason for not reporting a concussion was lack of awareness about what it is.

Concussion is a head injury, commonly from a direct blow, but also from a whiplash effect. While sports are an obvious contributor, sledding or falling off a swing can do the same damage and be easily overlooked or not considered at all. Regardless of the source, the effect is a metabolic change in the brain that results in slowing down your reaction and processing time, says Bill Meehan, M.D., director of the Sports Concussion Clinic at Children's Hospital in Boston.

The injury comes with any number of symptoms, among them:

- headaches,
- dizziness,
- nausea,
- light sensitivity,
- fogginess and
- mood changes.

Symptoms can start immediately, or soon after the hit. But they can also start the following day, and the connection is often missed, says neuropsychologist Neal McGrath, Ph.D., clinical director and founder of Sports Concussion New England.

Because concussion hinders the brain's ability to handle blood flow, any symptoms are exacerbated by physical or mental strain – whether from working out, cramming for a test or playing video games. Decision-making, cognition and focus are all compromised, which decreases performance and leaves an athlete vulnerable to another concussion. And a repeat concussion, before the brain fully recovers from the first one, can result in permanent brain damage and even death.

These realities apply to athletes at any level. With kids, however, the risk is greater, because their brains aren't fully developed, are more easily injured and are slower to recover than an adult's, Cantu says.

But while serious, the situation doesn't have to dire. It just needs to be addressed. The body and brain need immediate rest following a concussion, and, when symptoms disappear, activities should be slowly ramped up to eventual full level. Assuming it's a mild first concussion, an athlete can be back in play, with no long-term risk, in no more than two weeks, McGrath says.

To a kid, however, two weeks might as well be a decade. Motivated high school athletes want to play, keep their spot on the team and not appear weak to peers. They also want to have fun, and scoring a touchdown provides an ego-boosting thrill that doesn't come from the best chemistry test, says Sharon Chirban, Ph.D., sports psychologist at Children's Hospital.

Parents need to understand that, while it can be a struggle to have a teenager sit out a few games, relenting and ignoring the long-term view could stretch recovery time from days into months.

## Letting the Brain Recover

Taking any athlete off the field after a concussion is a necessary and mostly accepted component of recovery. But Lindsey Vonn and Sidney Crosby can sit in a dark room all day, focus on getting better, and not have to worry about the upcoming *Macbeth* term paper.

The student-athlete is still a student, but now with an injured brain.

Along with a physical break, an adolescent needs cognitive rest, says Lauren Smith, M.D., medical director for the Massachusetts Department of Public Health. Behavior has to be modified and activities – both fun (texting) and not so fun (chemistry homework) – need to be monitored, limited and possibly stopped temporarily. The remedy might be staying out of school, going in late, leaving early, or some ever-changing combination. Parents, coaches and educators have been slower to understand this fluid component of recovery, health professionals say.

Part of the reason is the nature of the injury. It's a functional, not anatomic problem, Smith says. A concussion won't show up on an X-ray or MRI. There's no cast or limp. A child can look just fine, so efforts to recuperate can lead to claims of malingering and milking the issue. McGrath says to expect the following ratio among a child's teachers: Two will have played sports, experienced concussions and know the realities. Two will need instruction, and two will be skeptical.

It's the skepticism that adds to the problem – the student knows that something's wrong, and being doubted can lead to anger and frustration, adds Chirban.

How do parents counteract that? Be patient and supportive at home. Assemble a strong team at school (see sidebar). And, until districts have good concussion-management programs in place, make sure that considerations are made during recovery – whether it's rescheduling tests, consolidating assignments or extending deadlines, anything that allows the student to keep up without worsening the symptoms, McGrath says.

With an injury that doesn't always reveal itself in obvious ways, impatience can be a natural response. Kids feel it; adults can be prone to it as well. But when the inclination and desire is to push rather than wait and show some discretion, the message is pretty clear.

“Do you want a shorter, faster, more expeditious recovery,” McGrath asks, “or a longer, slower, more painful one?”

– Steve Calechman is a freelance writer in Waltham.

## After a Concussion ...

### Finding Support

If a concussion persists and your child's schoolwork needs to be managed, here's where to find support and how to keep everyone informed, says Neal McGrath, Ph.D., clinical director and founder of Sports Concussion New England:

- **The school nurse** – Likely the only medical professional at the school, the nurse can monitor your child. He or she also understands how the inconsistent nature of symptoms can affect the child's day, requiring short breaks or an excusal.
- **The guidance counselor** – While you'll oversee the recovery process, the guidance counselor can deal with academic issues, helping to coordinate your child's teachers and ensure that they understand the situation.
- **E-mail** – Make a group list with all the necessary players – nurse, counselor, teachers, coaches, trainer, etc. – and regularly hit “reply all” so that everyone is up-to-date on your child's progress.

### Controlling behavior

Along with physical activity, McGrath recommends limiting or avoiding these other activities during recovery from a concussion:

- **Texting** – It's constant, visual and can easily tax the brain. Try to cap it at 5-10 minutes a day. That may not be practical or doable, but aiming for a limit will rein it in.
- **Computer use** – It's not all off-limits, but anything involving a good deal of thinking and scanning requires too much mental output. Video games aren't forbidden, but the visual element can be stressful, and the Wii, with a physical component, should be avoided.
- **Homework** – Math, reading comprehension and languages are usually the hardest with their demands for calculations, retention and recall. But any class that particularly challenges a child can cause undo stress.

– Steve Calechman

# Resources

- **Children's Hospital Boston Sports Concussion Clinic** – 781-216-1328; [www.kidssportsmed.org](http://www.kidssportsmed.org) – Learn more about the facts and symptoms of concussions, the clinic's treatment services and measuring recovery.
- **The Massachusetts Concussion Law** – [www.malegislature.gov/Laws/SessionLaws/Acts/2010/Chapter166](http://www.malegislature.gov/Laws/SessionLaws/Acts/2010/Chapter166) – Read the full text of the law here.
- **Sports Concussion New England** – Brookline, 617-553-8096; [www.sportsconcussion.net](http://www.sportsconcussion.net) – Concussion recovery management for student athletes. website includes partner schools, information on concussions and more.
- **Sports Legacy Institute** – Boston, [www.sportslegacy.org](http://www.sportslegacy.org) – Research, education and consulting on sports concussions, particularly degenerative brain disease caused by repetitive concussions.