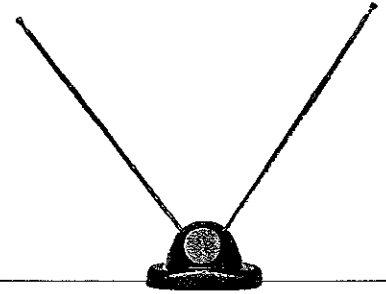


After Feb. 17, do not attempt to
adjust your television. It won't
need you anymore

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FOOTBALL: FANCY/VEE/COBBI S; ANTENNA: JUDITH COLLINS—ALAMY

SPORT

Hard Knocks.

How to keep
high school
kids with
concussions
on the bench

BY SEAN GREGORY

TOO MANY KIDS ARE RETURNING to the playing field too soon after a concussion. How many? According to an alarming new study, from 2005 to 2008, 41% of concussed athletes in 100 high schools across the U.S. returned to play too soon, under guidelines set out by the American Academy of Neurology. The 11-year-old guidelines say, for example, that if an athlete's concussion symptoms, such as dizziness or nausea, last longer than 15 minutes, he should be benched until he's been symptom-free for a week. The most startling data point—uncovered by the same researchers who in 2007 brought to light the fact that girls have a higher incidence of concussion than boys—is that 16% of high school football players who lost consciousness during a concussion returned to the field the same day.

The consequences of going back early can be dire. Last September, Jaquan Waller, 16,

suffered a concussion during football practice at J.H. Rose High School in Greenville, N.C. A certified athletic trainer educated in concussion management wasn't onsite, and the school's first responder who examined Waller cleared him to play in a game two days later. During that game, Waller was tackled. Moments later, he collapsed on the sidelines. He died the next day. A medical examiner determined Waller died from what is called second-impact syndrome, noting that "neither impact would have been sufficient to cause death in the absence of the other impact."

Research indicates that younger, less developed brains are at greater risk of second-impact syndrome, which is why the new concussion study from the Center for Injury Research and Policy at Nationwide Children's Hospital in Columbus, Ohio, is so troubling. Submitted to a scientific journal for peer review, the yet-to-be-published study examined 1,308 concussion incidents reported by athletic trainers and found that in

girls' volleyball and boys' basketball and baseball, more than half of concussed players returned to play too soon.

"These levels are way too high," says Dawn Comstock, an Ohio State pediatrics professor and co-author of the new study. She cites several factors that are driving the numbers. Not enough high schools have certified trainers who know how to deal with concussions—just 42% do, according to the National Athletic Trainers' Association. In some instances, over-competitive coaches, who are not required to be trained in concussion management, are pushing players back onto the field. And too often the players themselves aren't reporting head trauma, with team spirit giving them too much of a warrior mentality.

Why is playing sports with concussion symptoms so risky? During a concussion, arteries constrict, slowing blood flow to the brain. At the same time, calcium floods the energy-producing portions of brain cells. That calcium plays a mean defense, blocking

oxygen- and glucose-rich blood from replenishing neurons' energy supply. Brain cells get sluggish, and a concussed athlete who can't focus or suffers from slower reaction times is left more susceptible to a slew of other injuries, including another concussion. A second blow to the head could lead to more arterial constriction and more calcium infusions. "Concussion produces an energy crisis in the brain," says David Hovda, director of the Brain Injury Research Center at UCLA's David Geffen School of Medicine. "A second concussion will cause such an energy demand that it will overwhelm the survival capability of the brain."

That's why caution should be the name of the game. Robert Cantu, a neurosurgeon and concussion expert, insists that even after a mild first-time concussion, athletes must be free of all symptoms for at least a week, both at rest and during exertion, before returning to the field. Cantu's mantra: "When in doubt, sit them out."

But coaches, parents and medical personnel should expect resistance from athletes and remain on the lookout for those trying to downplay or hide less visible symptoms like headaches. What if a college scout was at the game you sat out because you got your bell rung? "For these kids, their goals in life sometimes revolve around athletics," says Todd Lipe, Waller's coach at J.H. Rose High School, who has promised to be more vigilant in detecting and managing concussions. (The school district did not blame any individual for Waller's death, though the first responder who examined him was relieved of his duties.)

Waller's death helped prompt an athletic-safety task force in North Carolina to recommend that all public high schools in the state be required to employ a full-time certified athletic trainer by August 2011. Meanwhile, after a high school student in New Jersey died of a brain injury suffered while playing football in October, New Jersey Representative Bill Pascrell introduced legislation in late 2008 that would set aside federal funding for computerized preseason baseline and postinjury neurocognitive testing for student athletes. This is a tough time to be asking for money, he says, but "when you compare this to the other injuries and ailments that we've responded to, it's embarrassing we haven't done more about concussions."

Given that concussions can be difficult to spot, the trickiest aspect may be getting kids to bench themselves after they're thumped. "You don't want to miss out," says Ryan Williams, a senior at Cibola High School in Albuquerque, N.M., who suffered two concussions this season and one last season. "You want to help your brothers." Of course, you can't help them, or yourself, if you don't know when to stay out of the game. ■

Postconcussion Rush. A high percentage of young athletes return to play too soon



38.2%



44.9%



55.6%



53.1%

A PRIMER ON CONCUSSIONS

SYMPTOMS

Headache, nausea, double vision, light sensitivity, loss of balance. Coaches should ask if a player can recall the events leading up to the hit

GUIDELINES

Never return to play the same day if you lose consciousness. After one mild concussion, be symptom-free for a week before returning

VIGILANCE

Brain Injuries don't present themselves as broken bones do. Parents get a closer look at their kids than do coaches—watch for signs

RESOURCES

Concussions are complicated. For more information, go to sportslegacy.org or visit cdc.gov and type "heads up" in the search box

Source: Center for Injury Research and Policy at Nationwide Children's Hospital, using American Academy of Neurology guidelines