I don’t even get to tell the cool story that I was diving to save the goal,” Brandon Swersey says with a chuckle. “A kid who couldn’t skate fell on me.”

It happened in March 2012, when the Westchester County native was a high school freshman playing hockey on a travel team. They were in the semifinals at a tournament in Massachusetts when Brandon got checked, lost his balance, and landed on the ice. Then, he says, “a very large kid lost his edge and fell on my head.”

At first, he didn’t think there was anything amiss. “I remember feeling OK, just a little shocked,” recalls Brandon, now a seventeen-year-old senior. “I’d been hit before, and there was always that ‘whoa’ factor. I didn’t really think anything of it.”

The Weill Cornell Concussion and Brain Injury Clinic offers comprehensive care, from pediatric patients to pro players.

Smooth skating: Brandon Swersey is back on the ice after recovering from a concussion.
Brandon's team scored, and the players assembled for the next face-off—but he lined up on the wrong side of the ice, facing the opposite direction, and his coach booted him for it. He didn’t play much more—he started feeling tired and headachy, which he attributed to the fact that it was the second game of the day—but he was booted by his team’s victory. That evening he ate dinner, got a good night’s sleep, and wrote a perfectly cogent paper for a science class. The next morning he still had a headache, so he took a Motrin—and decided to play in the final.

“I got cross-checked in the neck that game,” he says. “I don’t know if that was a tipping point, but it definitely didn’t help. The whole ride home I remember feeling really tired and light, seeming a little brighter. But I just chalked it up to being sleep deprived.”

Flash forward to the next day at school, when Brandon—a top student and AP scholar—couldn’t make out words on the chalkboard. “I didn’t forget how to read, but it hurt,” he says. “I tried doing a little schoolwork, but I couldn’t—just sat up and ate. It wasn’t good.”

Brandon’s dad, Kevin, sought advice from friends and colleagues in tracking down a leading concussion specialist in the New York metro area. That’s how Brandon wound up at the Weill Cornell Concussion and Brain Injury Clinic, where he was seen by Barry Kosofsky, MD, PhD, the Horace W. Goldsmith Foundation Professor of Pediatrics and a professor of neuroscience in the Feil Family Brain and Mind Research Institute. A neurologist with a specialty in traumatic brain injury (TBI) in children, Kosofsky is at the forefront of work on concussion—striving to create a gold standard for patient care as well as for the policymakers coping with concussion’s socioeconomic costs: in late May, President Barack Obama hosted the Healthy Kids and Safe Sports Concussion Summit, bringing league commissioners, scientists, and former professional and amateur players to the White House. “I think this is going to end up being like the American Heart Association or the American Cancer Society,” Stieg says. “The only way we’re going to be able to affect this in the short course is by altering behavior. So, making people aware: getting mom and dad oriented: “Everything revolves around hockey,” says Brandon, a left wing who aims to play at the club level in college.

On the head, adults can be more reticent when it comes to their own crania. “Most Americans don’t want to look at the brain as another organ in their body; they want to treat it as some mysterious entity,” Stieg says. “And to admit that there’s some injury to it means admitting that there’s some fundamental flaw in their personal identity. We need to get Americans over that concept.” If you had a heart attack, how resistant would you be to being taken to the hospital? With concussion, the brain is injured at least as much as any other organ, but it seems devastating at the time. And the concern extends to kids’ sports as well. “The real challenge is that we can't predict from a given hit who will be symptomatic in a week, a month, or six months,” Kosofsky says. “That’s what makes it so complicated. You're trying to figure out if somebody has had a problem that's going to require an intervention—and as clinicians, we're just not smart enough yet.” Plus, Kosofsky stresses, although concussion among the pros may draw the most headlines, it’s just the tip of the neurological iceberg. “For every one professional athlete, there are 1,000 in college—and for every 1,000 in college, there are 10,000 in high school,” he says. “So the base of the concussion pyramid is really the younger kids in sports.”
In addition to the Concussion Clinic, Weill Cornell faculty are addressing the condition on a variety of fronts. They include:

- Numerous clinicians work with professional sports teams, offering on-the-spot evaluations using instruments such as the SCAT (Sport Concussion Assessment Tool) that test cognition, motor response, and more.
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Kevin Sacks, MD, PhD, assistant professor of neuropsychology in neurological surgery, a longtime consultant to the NFL: “Once you take them into the locker room, they’re pretty much out of the game. It’s at the sideline where you can make the decision about whether it was a concussion or just a head bump.” Swing was on the sidelines last year at Super Bowl; though the team had no concussions, the opposing Broncos had one. “Being on the sideline of the Super Bowl is kind of a surreal experience,” says Philip Stieg, MD, PhD, professor and chief of neurosurgery, a longtime neuropsychologist in neurological surgery (the New York Jets and Islanders), and Nitin Sethi, MD, professor of neurological surgery and co-director of the Weill Cornell Spine Center (the New York Giants). Kenneth Perrine, PhD, assistant professor of neuropsychology in neurological surgery: “We’ll see the patient in twenty-four to forty-eight hours and do an intake and an assessment, and then the severity of the concussion will dictate the patient’s services. The services can range from imaging scans (to rule out more serious brain injury) to cognitive testing to appointments with specialists in headache, vision, and balance. Patients are closely followed, and those who have lingering problems with attention and memory—what’s known as post-concussion syndrome—can undergo a process called cognitive remediation that includes concentration exercises.”

Tackling Concussion

Kevin Sacks calls the neuropsychology component the “back end” of treatment, and that’s where the “real work” happens. “We really don’t have a good way to treat concussion right now,” Sethi admits. “The way we treat it is to treat the predominant symptoms. If patients have headaches, we treat the headache. If they have sleep problems, we treat that. There’s no specific drug.”

For Brandon, a breakthrough came in the form of an experimental treatment based on research by the U.S. military, which has seen a huge rise in TBI cases due to the post-9/11 wars. Neurologist Rainer J. Albrecht, MD, who was working in the pediatric concussion clinic as a research assistant, had read that some patients had improved after taking high doses of the antidepressant amitriptyline—fish oil—along with magnesium, a cocktail thought to help rebuild brain tissue. Albrecht presented the treatment to Brandon’s father: “It was almost like a miracle,” he says. “The symptoms were still there.” He tried a more moderate dosage of the anti-depressant and miniuming eye strain by taking tests really slowly and listening to audiobooks. “It was really depressing,” Brandon recalls. “Dr. Kowalosky was saying that I was going to play hockey again, and that was terri- ble, because it’s so much of my life. Everything revolves around hockey. I love it.”

Brandon’s return to full-contact play was a bit scary—“I played very cautiously, because I didn’t want the whole thing to happen again”—and he didn’t want to go back to school full-time ever since. In November, he was elect- ed captain of his high school varsity team, for which he plays left wing. But these days, he has taken on a role from the sidelines. “A reality check for him peers on the potential dangers of concussion.”

Brandon

You need to seek out the proper, medically

The coach and the athletic director asked his parent, “Do you think you can go back into the game?” Alison Swersey, Brandon’s mother, says, “He’s been doing fine, and they think if you don’t black out it means you’re OK, but that’s not the case. For the general population in vari- ety and club-travel sports, the naiveté and lack of education is shocking.” He recalls another parent telling him about a varsity soccer game in which a player was knocked down; when the teenager got up, he was moving slowly and clearly groggy as he was made his way to the bench. “The coach and the athletic director asked his parents if he could go back into the game,” Swarey says, sounding incredulous. “Since when is it acceptable to ask parents a medical question like that? Why aren’t there better pro- tocols in place?”

Brandon

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