



## A hostage to concussions

By Jackie Friedman/The Star-Ledger

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Mahala Gaylord/The Star-Ledger

Niki Popyer, a rising junior from Marlboro, can no longer play basketball after suffering seven concussions from the game. Popyer recently began attending her former team's practices again to watch.

As her former teammates huddle around their coach, Niki Popyer stands several arm's lengths away, just out of earshot. "No matter how close I am," she says, "I'm on the outside."

She shields her pain behind a full grin until a haze sets in. She glances past her teammates to the basketball hoop 60 feet away.

Tears seem imminent but never come. Crying hurts too much — it drives more blood to her damaged, 16-year-old brain.

Popyer can't play basketball, and may never again. She can't ride on a train or swim in the ocean. Doing her makeup takes more concentration, and she can't blow-dry her hair. She can't practice driving a car for too long, watch TV for more than an hour, walk outside without sunglasses, or go to the movies without getting headaches.

With the renewed nationwide attention on concussions sustained by football players at all levels, Popyer is a reminder of the dangers of head injuries in all sports, especially among young female participants.

Popyer has had 11 concussions in four years, according to her parents, including five in the past 10 months.

Each concussion extends her recovery time and makes her more susceptible to another. Every aspect of her life — social, academic, athletic — has been shaken.

The life she is living is not the one she had planned, one as a rising basketball star at Marlboro High who figured to be fielding scholarship offers about now.

She tells her story through broken anecdotes, turning for help when she loses her concentration — or when she realizes she can't remember what happened. The sport that promised her so much is now stealing her memory.



Mahala Gaylord/The Star-Ledger

Niki Popyer sits in her bedroom, with a picture of herself playing basketball on the wall, when she was healthy.

And yet she still has trouble getting people to take her seriously.

"There's no cast," she says, "so they don't know how hard it is. I didn't have to take finals, and they say, 'Oh you're just faking, you're scamming it.'"

For months, crying was one of the few things that felt natural.

"And," she says, "it made everything more intense and worse."

## FIRST BLOWS

No. 1: January 2006, seventh grade: Niki grabs for a loose ball, but someone else gets there first and she hits her head on the gym floor. The pupils of her eyes dilate. She will sit out for two days before returning to play.

"I didn't pass out, but I was foggy and I remember everyone standing around me," Popyer recalls. "They put ice packs all over my head. ... It wasn't even brought up to me that it could be a long-term" problem.

Eight days later, she sustained her second concussion, tumbling head first into the wrestling mats at the end of the court.

A concussion is a "closed head injury," where the skull does not fracture but the brain is bruised and its tissues damaged. These non-penetrating injuries occur for one reason: Although the brain sits inside the skull, it is not attached to it. Instead, spinal fluid forms a kind of moat between the soft tissue of the brain and the bony plates of the skull. Slam, shake or spin the head violently enough, and the brain will crash against the inside of the skull, sometimes even rebounding and hitting the opposite side as well.

Researchers have learned that a person who sustains a second concussion before fully recovering from the first is at a much higher risk of long-term, and even permanent, brain damage.

At an appointment in her office this past summer, Jill Brooks, Popyer's neuropsychiatrist since the spring, discussed her injuries.

"We don't want these concussions happening that close to each other," she said. "That will really slow down recovery."

Back-to-back concussions, however, became a trend for Popyer.

The family visited eight doctors, including neurosurgeons, psychologists, neuropsychologists, orthopedics and pediatricians.

"I wondered if she should stop playing," says her mother, Cathy Popyer, "but the doctors kept clearing her.

"All the information from everybody changed along the way. The knowledge that they had changed along the way," she says. "When we first started, it was: Keep them out two days. Then maybe a week. Then a couple weeks.

"We didn't keep her out (for good) because nobody told us she should stop playing," Cathy Popyer says. "The things we know now are different than what we knew then, that they become more susceptible to concussions. ... We had not gotten to the point where she should completely stop playing. People said maybe we should consider it for the future."

Even at a recent forum on concussions, a sampling of doctors showed a range of opinions on how a series of injuries should be handled.

"It all depends on the severity of each injury," said Nancy Keil, the athletic trainer at DePaul Catholic High School in Wayne. "I don't think there's a hard and fast number."

After hearing of Popyer's concussions, Vincent McInerney, the director of sports medicine at St. Joseph's Wayne Hospital, said he would have banned her from the court long ago.

"Two is dangerous. Three is like, 'Okay, we need to rethink this,'" McInerney said. "I'd tell them: 'You're done. You're done. You are at risk to die or have such cognitive defects that it's not even worth it.'"

## PROMISE DERAILED

No. 5: January 2008, ninth grade: Popyer gets fouled driving for a layup. She hits her head on the floor, bounces, and hits her head again.

Popyer had been the first freshman in six years to start at point guard for Marlboro High School, coach Brian Nash told her. At age 14, she was already talented enough to play Division 3 college basketball, he said.

Her first season lasted 13 games.

"She was a great shooter, great ballhandler," Nash says. "She was a team leader. She was inquisitive. She's one of the best 3-point shooters in the area. She's a tenacious defender, as well. ... She was maybe something that separated us."

From practices, a shooting coach and her personal trainer, Niki spent 16 hours a week working on basketball — excluding the time spent in front of the hoop in her driveway.

"She was a pain," her dad, Howard Popyer, says with a laugh. "It was always, 'Okay, you're going to rebound tonight.'"

The net on the hoop is now still, and Howard Popyer, who doubled as Niki's coach for her Amateur Athletic Union team, also has lost the father-daughter time he had enjoyed on road trips to Connecticut and Pennsylvania, scouting opponents and sharing a hotel room. Howard Popyer, still a coach, now carpools with Niki's former teammates, spending weekends at a time away from his daughter.

"Niki and I . . ." he says, trailing off. "I miss her."

## SCARED

No. 7: December 2008, 10th grade: It is the third quarter of Popyer's first game of the season. An opponent's shoulder drives into her head.

"For 30 seconds, no movement. She was unconscious," says Dave Ryden, the Marlboro athletic director. "Nash had her hand; I had her head. Her eyes are rolling back. Scared me half to death. I coached football for 15 years — that was the worst concussion I've ever seen."



Niki's parents bought her a \$90 ventilator headgear and a \$40 F90 Premier HeadGuard helmet in anticipation of her return. But there would be no return.

While rehabbing, she spent Christmas, New Year's Eve and most of winter break sitting on the couch, watching "How I Met

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Your Mother."

Cathy Popyer bought Niki several protective soft helmets to wear during basketball games. Niki stopped playing basketball for good soon after and never had the chance to wear any of the headgear in a game.

One month later, she bent over to pick up a water bottle off the floor right outside the gym. A friend opened a door and hit her in same spot as the December concussion.

For the next two months, Popyer's education was limited to home instruction: one subject per day for two hours. She cried herself to sleep with "meltdown tears" on her purple leopard print pillows. Despite the pain brought on by crying, she couldn't stop herself. Depression, she learned, was another symptom.

In April she returned to school, attending from 9:30 a.m. to 12:30 or 1:30 p.m. But once back in the classroom, she was easily distracted. She would read the same sentences several times. Math had been her favorite subject, but now she couldn't even copy notes from the blackboard.

It was even harder to take notes during lectures, because that involved switching back and forth between listening and writing, looking up and looking down.

"Everything is slow because your thinking skills get really slow," says Brooks, the neuropsychiatrist. "Once you start writing, you have to hold things in the shortest of working memory. The teacher's still talking while you're trying to write down what they're saying."

Popyer says, "I kind of just stopped and pretended I was doing it."

Her grades on homework remained steady, but after months of A's and B's, Popyer's test grades plummeted. She earned a 62 on a history test and a 56 on a math test — both because she didn't have time to finish. Finals were out of the question.

"She was having memory problems," Brooks says. "How could she study?"

Though the Popyers praised the school system for its assistance, not everyone was as accommodating: Popyer received word from the College Board that she had been denied special privileges, such as extended time, for the SAT exam. The family planned to appeal the decision; the College Board called Niki's a "temporary condition."

## IN THE BEDROOM

No. 10: July 2009, the summer before Popyer begins 11th grade. She poses for a picture in her bedroom, and a friend's shoulder hits her in the chin or nose; she can't remember. As she takes a step backward, she says, "I'm okay," then faints.

Popyer's social circle has deflated. Her Facebook wall is plastered with messages of "I miss you!" She gets her nails done and has friends over to play Tony Hawk on her Wii. They roar with laughter — "Laughing leads to headaches as well, but it's better than the crying headaches," she says — as virtual skateboarders dive head first into the pavement when she and her friends lose control.

She giggles at the irony and admits, "When they fall on their heads I squirm a little bit."

While she enjoys the low-key activities, Niki says her friends come to her when they need downtime rather than excitement — an extreme contrast to her pre-concussion life.

A friend, Chelsea Lupo, says: "It's sad that I've become accustomed to the fact that she's so fragile that you can't even joke around with her.

"It's so sad to know that I can get a call every week saying 'Niki's in the hospital. She got hit in the face.'"

Weekends are the worst for Popyer. She has skipped at least a dozen Sweet 16 parties, wanting to avoid the attention she would draw from her need to sit outside. After the prom, her friends went to Wildwood for the weekend; her mom drove her down for a one-night stay. She lay in bed while others funneled beers.

Nearly a month after the prom, she and her boyfriend of 2½ years broke up.

"He told me, 'Your concussions are making my life hell,'" Popyer says.

## LOOKING BACK

The family estimates spending at least \$2,500 out of pocket since January, and \$15,000 beyond insurance-covered costs since the first concussion.

In many ways the emotional toll is even greater.

"We smile and laugh as much as we can," Cathy Popyer says. "But it's all a lie."

It is also cause for looking back, wondering if the right decisions were made along the way.

"It was an unbelievably tough decision" on whether to let her play, her father says. "I definitely would have given it a lot more time. Instead of coming back in a couple months or a few weeks, maybe sit out that entire season. I look back and I say, what could we have done different? I think we should have stopped this for a longer period of time.

"I hate to see a kid's dreams get smashed. I'd like to know it was definitely safe for her to go back. We went back too fast — with doctors' approvals.

"We never violated what the doctors said; we're not that big of idiots," he adds with a laugh. "I should have probably kept her out the entire season last year."

Popyer is back to school full time but still comes home regularly with headaches.

The basketball is over, but the concussions are not. On Friday, she was enjoying a good laugh while sitting in the cafeteria at school, causing her to lean back in her chair. Her head inadvertently hit the elbow of the vice principal walking by. Soon after, she passed out. Concussion No. 11.

The basketballs will soon be bouncing as another high school season begins. Popyer will be on the sidelines watching and wondering.

"Do you know what it's like," she asks, "when you need to cry but you can't?"

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