

It felt like my brain was rebooting.

— Yusuf Young, former Roosevelt linebacker, on his concussion

HELMETS from A3

tried to stay in the game, but it was like I kept falling, I was so weak. . . . It felt like my brain was rebooting.”

Young stayed in the game for two more plays. When he returned to the sideline, he dropped to his knees and tumbled to the ground. As he was being checked by a physician on the sideline, he said his mom rushed to his side and, through tears, implored him to go to the hospital. Young was taken by ambulance to an emergency room at Stony Brook University Hospital, where doctors told him he had suffered a concussion.

Young, now 18, graduated from Roosevelt in June and is attending Nassau Community College this fall.

Young was the only Roosevelt player removed from play last season on either the JV or varsity because of a concussion, according to documents obtained by Newsday.

The school's incident report said Young was confused, dizzy and was sensitive to noise in the aftermath of the hits to the head.

According to a doctor's note, Young returned to school the next day following the concussion but “was sent home because he was feeling drowsy.” Young said the school's athletic director, Michael Jones, drove him home.

“I know I wouldn't want my kid walking home after something like that,” Jones said.

Paperwork provided by the school indicates that Young began the school's return-to-play protocol that Thursday, five days after the concussion.

The protocol, part of New York's concussion management act of 2012, includes gradually increasing a player's activity level for a series of days. He was cleared to return to sports by the school physician Dec. 10, nearly two weeks after the concussion.

Duma, a biomedical engineering professor, said he modeled Virginia Tech's independently funded helmet rating system after the National Highway Traffic Safety Administration's five-star car safety rating system.

Some neurologists say Virginia Tech's ratings overinflate

Yusuf Young shows image of the hit that caused his concussion during the 2014 LI championship game. ■ Watch his story: newsday.com/helmets



a helmet's role in preventing concussions and oversimplify the complexities behind the science of concussions. However, just as safety testing changed the way the automobile industry made cars, Virginia Tech's ratings changed the way football helmets are made.

The number of five-star helmet models being manufactured has risen to eight from one since the ratings were first made public in 2011.

Riddell makes the most helmets in use on Long Island, followed by Schutt, Xenith and Rawlings, which announced

in June it will no longer produce football helmets because it was not profitable enough.

Ratings credited

Riddell credited the Virginia Tech ratings for encouraging schools to accelerate their helmet replacement plans.

“We think kids should be in the best available technology,” said Thad Ide, Riddell's senior vice president for research and product development.

Xenith chief executive Joe Esposito called the ratings “the de facto industry standard” and said Xenith wouldn't put a new

helmet on the market that wasn't five stars.

On Long Island, two schools — Oyster Bay and Port Jefferson — replaced their inventories with all new five-star helmets after the death of Shoreham-Wading River junior Thomas Cutinella following a helmet-to-helmet hit last year. Port Jefferson spent \$14,749 on 50 new five-star helmets. Oyster Bay spent \$33,915 on 85 five-star helmets equipped with a sensor system that alerts a handheld device when a hit registers above a certain threshold of force.

Northport is the only other school with all five-star helmets. Typically, schools buy about 10 helmets per year, according to purchase orders obtained by Newsday.

Helmets worn by high school players are the same makes and models as those worn in the NFL. The league says it's “mandatory” that teams make the Virginia Tech ratings available to players, a spokesman said.

Schutt chief executive Robert Erb, who lives in Manhasset, described the ratings as “one piece of information with all sorts of caveats.”

“There are simply too many variables taking place on a football field for such testing to be predictive of risk reduction,” Erb said.

But Dr. Michael Egnor, a professor of neurosurgery at the Stony Brook University School of Medicine, said Duma's team has done “the best and most rigorous work” studying which helmets decrease head acceleration the best.

“And if it were my kid, I would want him to be wearing one of the higher-rated helmets,” Egnor said.

Other experts agree.

“I would not put my kid in one of those one-star helmets,” said Kevin Guskiewicz, co-director of the University of North Carolina's Sport-Related Traumatic Brain Injury Research Center and a member of the NFL's Head, Neck and Spine Committee.

Virginia Tech tests helmets in a laboratory by dropping them 120 times from predetermined heights to simulate the different forces of impacts that its research says a football player would expect to experience during a season.

A separate six-year study by researchers from eight universities, including Virginia Tech, tracked the force of impacts and concussions suffered by college football players from 2005 to 2010 wearing a one-star helmet and a four-star helmet. The researchers determined there was a 54 percent reduction in concussions among players in the four-star helmet compared with the one-star.

But just as injuries and deaths can happen to people

MORE COVERAGE PAGES A12-13

ANOTHER PLAYER TELLS HIS STORY

Mike O'Donnell doesn't remember much about the devastating hits that caused his concussion — or even the game itself.

TRAGEDY SPURS CHANGE

Oyster Bay and Port Jefferson districts bought new helmets after the death of Tom Cutinella

See **HELMETS** on A10

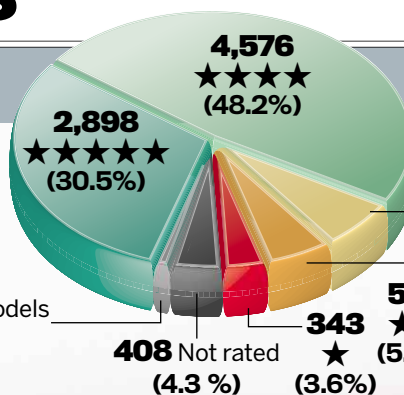
NOW ONLINE newsday.com/helmets

Researchers at Virginia Tech test football helmets' ability to reduce head acceleration and the risk of concussion.

A 5-star helmet is deemed best at reducing risk, and all manufacturers now sell models that earn 4 or 5 stars. On Long Island, there are 9,502 helmets at the 108 high schools that responded to Newsday's request for the most current inventory.

HELMETS IN LI SCHOOLS

123 helmet models in dispute (1.3%)



SCHOOL BY SCHOOL
Search and compare safety ratings online for all helmets at 108 LI high schools.

THE RATINGS (Sample helmets)

Front view



★

Riddell VSR4

Riddell says this helmet, introduced in 1992, "was the most advanced helmet in the marketplace for many years." Riddell discontinued sales in May 2011. There are 343 in circulation on Long Island.

★★

Schutt Air Advantage

Introduced in 2001, it was designed to be lighter and had a smaller outer shell. Schutt says it discontinued this helmet in 2011. There are 542 in circulation on Long Island.

★★★

Schutt DNA Pro+

Shell is slightly smaller and does not manage energy on low-impact hits as well as others in testing, Schutt says. Schutt stopped manufacturing this model last month. There are 93 in circulation on LI.

★★★★

Riddell Revolution

Riddell says this is the first helmet designed to reduce concussions. Introduced in 2002, Riddell said last month it will no longer manufacture this helmet. There are 3,028 in circulation on LI.

★★★★★

Riddell Speedflex

Introduced last year, it features flexibility in certain portions of the shell and face mask, which, Riddell says absorbs more impact. There are 154 in circulation on Long Island.



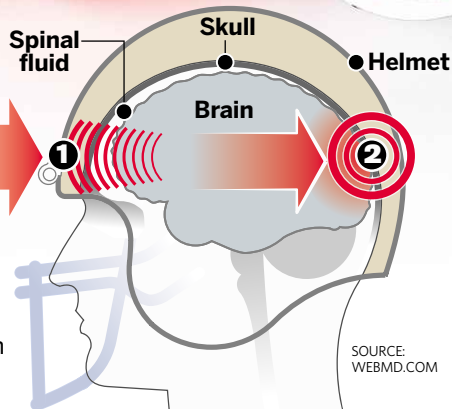
Liner and underside

WHAT IS A CONCUSSION?

AT REST The brain is protected by a cushion of spinal fluid in the skull.

1 IMPACT A violent jolt, such as a tackle, causes the brain to shift and strike the skull.

2 EFFECT Bruising of the brain, tearing of blood vessels and nerve damage can occur. Symptoms include headaches, dizziness, blurred vision and memory loss.



SOURCE: WEBMD.COM

YOUR HELMET'S RATING

Enter a brand name to see Virginia Tech ratings for specific models.

PLUS: SPECIAL VIDEO FEATURES

- Watch the "Hard Knocks" mini-documentary.
- See interviews with former Long Island high school players Yusuf Young and Michael O'Donnell.
- Go behind the scenes with Virginia Tech researchers.
- Watch Schutt's CEO discuss the ratings' effect on industry, sport.

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