

TODAY'S FOCUS



Wayne State University
In an injury simulation, a dummy was struck in the bridge of its nose by a boxing glove on a mechanical arm and had a baseball fired at it from about 2 feet. In both tests, the dummy sustained less damage wearing a mask than without. Also, the power of the blow was absorbed by stronger bones in the face.



Photos by David Coates / The Detroit News
Orthotist Jeremy Murray makes about 125 masks a year, mostly for prep and college athletes.

Getting behind the face mask

Protective cover spreads impact over wider area of athlete's face, diminishing effect

BY PATRICK MURPHY
The Detroit News

Halloween is just around the corner, but the masks being worn on area basketball courts and playing fields have nothing to do with the spooky holiday.

Designed to take a punch, not deliver a scare, they are protective masks, made by Michigan Hand & Sports Rehab Centers of Warren.

Ten-year-old Gabrielle Jones, a sixth-grader at Greyhound Intermediate School in Eaton Rapids, can vouch for their effectiveness. So could Pistons guard Richard Hamilton. He started wearing a mask before the 2004 playoffs and continues to wear it five years later.

A pilot study done this summer by a team from Wayne State's sports injury biomechanics lab reinforces what athletes say about the masks: They significantly reduce the risk of serious injury to the face.

"When I got the mask, I felt like I could play a long time," said Gabrielle, whose nose was shattered in 2007 when she was hit by an aluminum bat.

Wayne State's team created tests that simulated athletic injuries. A mask made by the orthotics department was placed on the face of a test dummy's head wired with sensors. The dummy was struck in the bridge of its nose by a boxing glove on a mechanical arm and had a baseball fired at it from about 2 feet. The boxing glove simulated the force of a blow from an unintentional elbow in a basketball game.

In both tests, the dummy head sustained less damage with a mask than without. But more significantly, the power of the blow was spread out over a longer duration and over a wider area of the face.

"We wanted to see if the force is dissipated and distributed to stronger bones in the face. We found with each increase in mask thickness, there were significant increases in protection," said Cynthia Bir, a professor at Wayne State's Biomedical Engineering Department.

Most masks made by the department are a quarter-inch thick.

"I was not surprised to learn that masks were effective at protecting against injury/reinjury, but I was surprised at how much of a beat-



David Coates / The Detroit News
Gabrielle Jones, 10, of Eaton Rapids wears a mask after her nose was shattered in 2007 when she was hit by an aluminum bat.

ing they could take and still be effective," said Jeremy Murray, who has been making masks with the Michigan Hand orthotics department since 2001.

The results provide peace of mind that calm athletes and parents.

"It's kind of really disappointing when you think about not playing. I'd rather play than sit on the bench," Gabrielle said.

The point guard is preparing for her second basketball season wearing a mask. Her mother, Jodi, is grateful her daughter can do what she loves safely.

"At first she was told by her doctors she could have no contact. She likes to play sports. She didn't do anything to deserve this," Jodi Jones said. "She likes to play hard, and we didn't want her not to be herself."

The Wayne State team published the mask test results at the Fourth European Conference on Protective Clothing in June in the Netherlands.

The team plans to run more tests on the mask and other protective masks in the future.



Warren company tailors gear to fit

BY PATRICK MURPHY
The Detroit News

Tyler Hansbrough, the 13th pick in this summer's NBA draft, played through a nose fracture in the 2007 NCAA Tournament thanks to a protective mask designed by a local company.

Detroit Symphony Orchestra violist Caroline Coade continues to perform despite arthritis in her hands with the help of braces from the same company.

From NBA all-stars to little leaguers, the Orthotics Department at Michigan Hand & Sports Rehab Centers in Warren has emerged as a national leader in protective equipment.

Custom face masks got their start with ex-Piston Bad Boy and former Detroit Shock head coach Bill Laimbeer, according to Jeremy Murray, certified orthotist at Michigan Hand. Laimbeer broke his cheek bone in the late 1980s. His mask was designed by Jerry McHale, a certified orthotist who worked with the Pistons for several years. McHale got the orthotics department started in 2003.

An injury to current Piston Richard Hamilton in 2004 gave the department its widest exposure. Murray, who took over the department in 2006, designed his mask.

"Once Rip started wearing his mask, Pistons trainer (Mike Abdennour) started getting two to three calls a week regarding face masks and where to get them," Murray said.

Now, Murray makes about 125 masks a year; about 90 percent of them are for high school and college athletes. Jodi Jones of Eaton Rapids became aware of the masks in part by watching Hamilton. Her daughter Gabrielle, 10, began wearing a custom mask last fall after being hit in the face by an aluminum bat in 2007.

"(Hamilton) really is a role model. He kind of made it socially acceptable. He made it all right, especially for kids. (Gabrielle) has a new favorite number now," Jones said.



Richard Hamilton's autographed mask was designed by Murray.

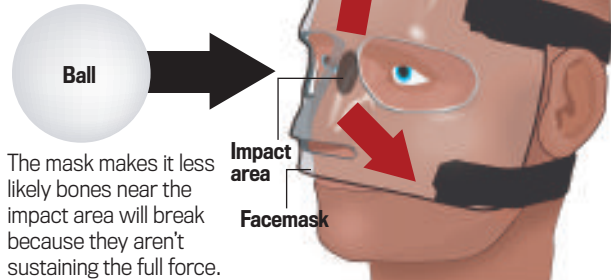
Watch video showing how a custom sports mask is made at detnews.com/pistons

Hamilton mask lessens and distributes impact

Tests done recently by a Wayne State team on a facemask similar to the one worn by Piston Richard Hamilton indicate the mask does protect against serious injury.

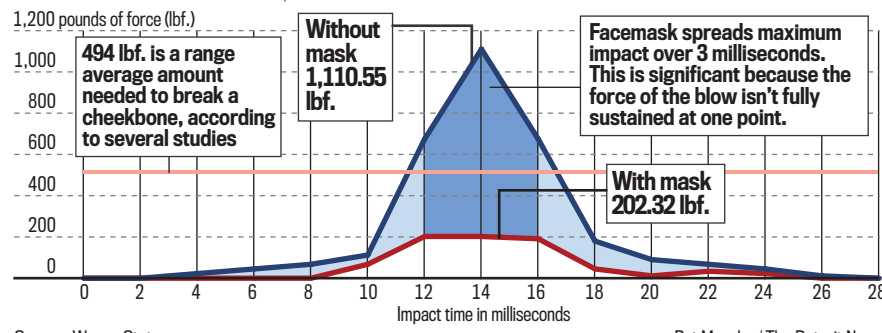
Force distribution

Facemasks made by a Warren company take the force from an impact and disperse it throughout the mask.



By the numbers

The boxing glove test simulated the impact from an accidental elbow to the bridge of the nose. Here are the test results on a 1/4"-thick mask.



Richard Hamilton donned the mask before the Pistons' 2004 playoff run.

Getty Images



Family photo
Joey Caraccio, 16, broke his sinus, cheekbone and orbital bones in a practice accident.

Teen's athletic career gets extra protection after injury

BY PATRICK MURPHY
The Detroit News

A freak accident in February 2008 nearly ended 16-year-old Joey Caraccio's athletic career.

Caraccio, who began playing baseball at age 5, was knocked unconscious after being struck in the face by someone swinging an aluminum bat during a practice. The impact broke his sinus, cheekbone and orbital bones.

Now, the Traverse City native, is getting looks from college coaches and invitations to pro camps thanks to a protective face mask designed by the Orthotics Department at Michigan

Hand & Sports Rehab Centers in Warren. Caraccio just finished his summer baseball season pitching and playing shortstop for a traveling team out of Grand Rapids. He hit .320 in more than 50 games and pitched two shutouts.

"That would not have necessarily happened had he not had the mask. So he clearly seized the opportunity to keep playing the game he loves," said his father, Don Caraccio.

Several hundred athletes throughout the country have been able to keep playing the sports they love thanks to the department's equipment.

"I think about that day and I don't take playing for granted," Joey Caraccio said. "I go out there now and know I'm protected."

That day isn't far from Don Caraccio's mind. He arrived at school thinking he was picking up Joey after practice only to see teammates run to the parking lot looking for help. Don is a physician and attended to his son, who was lying limp on the gym floor.

Joey didn't play for about six weeks. During that time, Don contacted the orthotics department, and a mask was prepared for his son.

"I think he almost lost some-

thing he loved," Don said. "If he gets hit in the face again, I feel pretty comfortable. I'm not an easy sell and asked a lot of questions. My sense was that this makes sense. It makes sense and it works."

Lansing Community College junior Sam Callow didn't suffer such a severe injury but still benefited from a protective mask. He had reconstructive nose surgery after being elbowed during a soccer scrimmage his senior year in high school. Callow, a Grand Ledge native, wore a mask for about year after his injury.

He continues to wear one occa-

sionally playing basketball and would consider wearing it again for soccer.

"The mask really takes the pressure off the face. It takes a lot of force away from the nose," Callow said.

Getting reinjured was something Joey Carraccio was concerned with when he started wearing his mask. His concerns lessened after being hit in the face by two bad hops playing shortstop.

"I got hit and it hurt a little bit," Carraccio said. "But I was like, 'Wow this isn't bad.' It's good to be out there knowing you are protected by the mask."