

A Boxer's Memory: Study Shows 6 Years in Ring Change Brain



Ray Ciancaglini has memory loss from his years as a boxer

By KATIE MOISSE

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Though words and names escape him, [Ray Ciancaglini](#) said he will never forget the first time he saw Carmen Basilio throw a punch.

"My grandparents owned a restaurant and the bar room was filled with people watching the fight," said Ciancaglini, who was six years old when Basilio beat middleweight boxing champion Sugar Ray Robinson in 1957. "I said, 'I'm going to be Carmen Basilio.' So I went in the back, hung up a laundry bag filled with towels and napkins, and started punching."

Ten years later, Ciancaglini was on track to become a middleweight champ himself. But [repeated blows to the head](#), and failure to give his brain time to recover, caused constant headaches, confusion and memory loss. Ciancaglini retired from the ring at the age of 23.

The long term consequences of combat sport are no secret, thanks to high-profile athletes like Muhammad Ali. But a new study suggests just six years of boxing can cause lasting changes in the brain, including shrinkage of areas involved in memory and cognition.

"We asked the question: Is there a certain degree of repetitive head trauma that the brain can tolerate, beyond which you run the risk of developing long term complications?" said study author Dr. Charles Bernick, associate director of the Cleveland Clinic's Lou Ruvo Center for Brain Health in Las Vegas. "And if that's the case, can we detect changes in the brain before people become symptomatic?"

Bernick and colleagues followed 109 current boxers and mixed martial art fighters, using surveys to assess their fight frequencies and MRI scans to detect changes in their brains. The more fights, the more severe the brain changes in fighters with six or more years in the ring. And after 12 years, the number of fights was linked to poorer performance on memory tests.

"This raises the possibility of detecting brain changes before people are symptomatic," said Bernick, who is presenting the ongoing study at the American Academy of Neurology annual meeting this week in New Orleans. "If you wait for someone to start having symptoms and retire, you've bought the farm. You may not be able to do too much about it."

In Ciancaglini's heyday, boxers would worry about knockout blows and discount the flurry of smaller hits.

"The myth was you had to be knocked unconscious to get a head injury," said Ciancaglini. "We didn't know what concussions were back then; we didn't understand them like we do today."

Dr. Vernon Williams, medical director of the Kerlan-Jobe Center for Sports Neurology in Los Angeles, said concussion symptoms vary, and may not include blacking out.

"We define concussions from a clinical standpoint as an injury with neurological symptoms, such as headache, nausea, dizziness, forgetfulness," he said. "You don't need to lose consciousness."

Mounting research in boxing, football, hockey and military service suggests smaller blows can add up to have major consequences, including [chronic traumatic encephalopathy](#), a progressive brain disease with features of Alzheimer's, Parkinson's and ALS.

"It's not just the big concussions, but the chronic accumulation of smaller blows to the head," said Dr. Daryl Rosenbaum, assistant professor of sports medicine at Wake Forest University in Winston-Salem, N.C. "We get asked all the time how many hits are too many. We don't know the answer to that question, but studies like this will help."

With his hopes of becoming a middleweight champion dashed, Ciancaglini went to college to become a gym teacher. But his "foggy" mind held him back.

"I failed pretty quickly, and my heart broke all over again," he said.

Memory lapses and hand tremors from his days in the ring made it impossible for him to hold down a job. Eventually, doctors diagnosed Ciancaglini with dementia pugilistica, a progressive brain disease caused by repeated head trauma.

"At first I got depressed and threw out all my memorabilia. But I came out battling 'cause that's what I do," he said.

Now Ciancaglini says he has a new calling: raising concussion awareness in young athletes.

"I tell them, 'The game you sit out today could be the career you save tomorrow,'" he said, reading a line from a recent speech to make sure he gets it right. "People come up after and thank me for telling them my story. It makes me cry."