Slipping Punches

The hit Floyd Mayweather never wanted to take

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It's been said that to thrive in the world of professional boxing, you must have a hard head, really thick skin and the heart to get up when you're knocked flat on your face on the canvas. "I have been a fighter since I was 2 years old," says Floyd "Money" Mayweather (a.k.a. "Pretty Boy"), the charismatic, currently retired professional boxer whom many regard as one of the greatest fighters of all time. "It's pretty much all I did for the majority of my life. It was my profession, and I was very successful at it."

But like the faded black and blue of bruises left by blows, Mayweather's public profile includes private controversies that linger. Past homophobic and racist comments and convictions for domestic abuse still taint the champ's record as the fighter ranked No. 1 on ESPN's list of top 25 pound-for-pound boxers of the past 25 years, despite continued attempts to reshape his image into the tolerant, more positive man that he insists he is today.

Mayweather believes that for some people, fighting is their best chance for a better life. "We fight for a living, and for most of us, it's one of two options we had to get ourselves out of the unfortunate situations of our childhoods and make a better life for ourselves and our families, and sometimes, fighters don't even have a choice," he says. "When you're boxing and it's your best option for a better life, you don't think much about the future. You're fighting just to survive in the ring and make some money. It's the hurt business, so you can get injured. But when you do whatever it takes to protect yourself, you're less concerned."

Courtesy of Showtime

Health experts and researchers, however, are worried about the long-term effects of repeated blows to the head. Competitors in boxing and mixed martial arts (MMA) often use punches to nullify their opponents. But this tactical strategy prompted scientists to launch the Professional Fighters Brain Health Study. Researchers at the Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas recruited active and retired pugilists and mixed martial arts combatants to assess health risks faced by these athletes with a history of taking crushing shots to the dome.

Scientists aim to identify if and when changes occur that may result in impairments to fighters' ability to think and function and to improve awareness about brain health in the professional communities that regulate combat sports.

"Most head impacts that are sustained by boxers and MMA fighters are subconcussive in nature," explains T. Dianne Langford, PhD, a professor in the Lewis Katz School of Medicine at Temple University's department of neuroscience. "That means they don't really show the clinical signs and symptoms of a concussion, so this leads them to believe that they're OK, and they continue to fight and receive repeated blows."

When fighters sustain a blow to the head, the brain, which has a jellylike consistency, sloshes back and forth inside the skull. "This causes injury to the front and back of the brain when the tissue stretches and leads to tearing, twisting and stretching of all the cells inside the brain," Langford says. "Some of these cells die from this insult, and others respond by making substances called inflammatory factors, or they try to repair the damage."

But repeated blows perpetuate more injury to athletes because their brains are already damaged. Almost 100 years ago, a researcher named Harrison Martland described the clinical symptoms of an illness boxers suffered from that's now known as chronic traumatic encephalopathy (CTE). The condition is better known as being "punch drunk," a term Martland coined in 1928. The condition may trigger cognitive, behavioral and mental issues, such as difficulty thinking, impulsive behavior, depression or apathy, short-term-memory loss, emotional instability, substance abuse and suicidal thoughts and actions, among other problems. But doctors don't know how the illness progresses.

In addition, says Langford, "After you've sustained repeated blows to the head, whether or not there are symptoms of a concussion, this can disrupt your sleep patterns."

A disrupted sleep cycle has been linked with impairment of the protein called tau, which is essential to normal neuron function. This, in turn, can lead to the formation of tangles in the brain that accumulate and eventually "disrupt all the communication between your neurons," Langford says.

Floyd Mayweather's uncle Roger, now 56 years old and retired, boxed professionally while his nephew built his own boxing career. In a video posted by MLive.com, the former titleholder suggests that one hit during a match isn't the catalyst that precipitates the most damage to a

fighter’s brain and body. “The grind is a boxer taking beatings over time,” Mayweather says. “That’s what messes a fighter up.”

The power of a boxer’s punch is measurable. Studies suggest that the force of a punch depends on a boxer using skill, hand speed, strength and acceleration to generate enough power to land a blow hard enough to stop an opponent. In a paper from Penn State about the physics behind boxing, researchers conclude that the faster the punch a boxer hurls at his opponent, the more devastating a wallop it packs. “When the head is hit, especially with a rotational movement, one of two things can happen,” says John Hardy, a neuroscientist at University College London in the United Kingdom, in an article on the topic. “Either a blood vessel can snap, leading to a hemorrhage, or there can be microscopic tearing of the tissue around the vessel.”

Mayweather believes that the years his uncle spent in the ring being banged on the head left him with memory loss and a serious case of unmanaged diabetes. The string of health problems that plague Roger helped influence Mayweather’s decision to retire from the sport. “It’s sad that he’s only in his 50s, but it seems like he’s an old man in his 80s from the sport of boxing,” Mayweather says in a video posted by FightHype.com. “Boxing is wear and tear on the body. My uncle Roger, I love him dearly, and it hurts me badly that he doesn’t even know who I am anymore.”

Floyd MayweatherCourtesy of Showtime/Esther Lin

Indeed, the punishment boxing and MMA inflict on the body has sparked outcries from some in the health community to ban these bouts. But Mayweather doesn’t think that day will come. “It’s an important sport that gives opportunity to young men—and, now, even women—who come from

disadvantaged communities to find a way out," he says. "It has given many young athletes a chance to strive and make some money for themselves and their families. Fighters are tough, determined individuals who would never allow anything to happen to the history and current state of this 'sweet science,'" as the sport of boxing is sometimes known.

Langford doesn't want to see boxing banned. "What we're trying to do is protect the player and the game," she says. "I believe the key is to continue our research into understanding how we can better equip the players and the athletes to sustain these blows."

In the ring, Mayweather employed a signature shoulder roll that minimized his adversaries' opportunities to land damaging blows to his head and body. "Everyone knows I am one of the best defensive fighters ever. Boxing is a sport where the goal is to hit and not get hit," he says. "I practiced my defensive skills just as much as my offensive skills. I never worried about showing off by going for the knockout—if it came, it came—or having to be in a bloodbath to get the victory. The best fighters are always the ones that can defend themselves while beating their opponent too."

Now that he's not a contender—at least until he decides to come out of retirement once again—Mayweather lives by the rules of the game he's played his whole life.

"I don't drink, smoke or do drugs," he says. "So I have the same strength I did during boxing not to abuse my health or wellness and to live as long as I can."

The Ring vs. the Cage

Is boxing more deadly than bloody mixed martial arts?

At press time, speculation continues to swirl about whether Floyd Mayweather will reemerge from retirement to fight mixed martial arts (MMA) fighter and reigning Ultimate Fighting Championship lightweight champ Conor McGregor. The buzz about this matchup has sparked intermittent flare-ups of trash talk between these two athletes and generated animated conversations among fans about which sport is more dangerous. The answer: The combat sports are equally perilous, albeit in different ways, according to findings reported in The New York Times.

For the study, researchers from the University of Alberta in Canada examined the post-fight medical records of more than 1,180 MMA fighters and 550 boxers during a 10-year period. Findings showed that fighters in the UFC cage (a.k.a. the Octagon) suffered injury more often than boxers, but pugilists received more severe damage, such as being knocked out.

In addition, scientists noted that MMA contenders were more likely to sustain minor injuries, such as contusions, bruises, bloody noses and facial cuts, at a higher rate than boxers. The boxers, however, experienced more harmful traumas, such as concussions, loss of consciousness, broken noses and bones, and eye injuries, including detached retinas.

What's more, despite the bloodletting at mixed martial arts bouts that seem to scream for

somebody to call the cops, boxers were more likely to require longer medical recovery periods than their MMA counterparts.
