Head trauma may have contributed to Ali’s Parkinson’s

By Karen Weintraub, Special for USA TODAY

Muhammad Ali died Friday with the Parkinson’s disease that helped define his life for the last 32 years.

Boxing may have contributed to his illness, but genetics was likely a bigger factor, experts said. “It’s bad luck on top of genetics,” said Ole Isacson, a professor of neurology at Harvard Medical School who met Ali several times. People who lose consciousness through head trauma are at 50% higher risk of Parkinson’s than those who don’t, he said.

Ali’s symptoms and the course of his disease were also consistent with a genetic form of Parkinson’s, said Michael Okun, chairman of neurology at the University of Florida, who was a longtime Ali friend and adviser. About 10% of cases are believed to be caused directly by genetics.

Like people with the inherited form of the disease, Ali’s Parkinson’s arrived early, struck mainly on one side and responded well to the best drug treatment for the disease, Levodopa.

Ali was diagnosed in 1984, three years after he retired, but Okun said his neurological problems were evident in his later fights. In some ways, Okun said, it was good that Ali was forced to retire early. If he’d continued to fight, he might have done more damage to his brain.

In some patients, events like head trauma or medications can “unmask” disease that’s still in its earliest stage, said Okun, also national medical director of the National Parkinson’s Foundation, which focuses on ways to help patients cope with their disease. Ali was also an active fundraiser for Parkinson’s, particularly supporting the Muhammad Ali Parkinson Center at the Barrow Neurological Institute in Phoenix.

Isacson praised Ali’s “fight and spirit,” which led him to speak to Congress about Parkinson’s and raise public awareness. “It’s tremendous to see people who are in such severe conditions and who keep their spirits so high and do everything they can,” Isacson said. “Even if he was not moving, his whole presence was felt everywhere.”

Isacson said there is also reason to believe that repeated hits to the head might contribute to Parkinson’s.

Comparing the brain to a squishy ball, Isacson explained that when it’s hit extremely hard, the ball bounces against the skull. About three to 12 days later, massive inflammation follows and the brain is flooded with proteins that are associated with Alzheimer’s or Parkinson’s.
Parkinson’s results from a loss of brain cells that produce the chemical dopamine. After inflammation, these dopamine neurons are much more fragile, Isacson said, and more likely to become injured by other things, such as regular aging.

Peter Schmidt, senior vice president and chief mission officer with the National Parkinson’s Foundation, said it makes sense from an evolutionary perspective that a head injury would target the part of the brain that controls movement. A severe brain injury may target the so-called motor cortex, he said, to encourage people to rest so they can recover.

There are about 1 million Parkinson’s patients in the U.S. and about 8 million worldwide. Although most patients die with Parkinson’s, rather than of Parkinson’s, it can lead to lethal falls or infections as balance and swallowing become compromised.

Both Ali and actor Michael J. Fox developed the disease early in life, but it most often hits people around age 60, said Dr. Rachel Dolhun, a movement disorder specialist and vice president of the Michael J. Fox Foundation, which supports research toward treatment and a cure.

The course of the disease is different in everyone, Dolhun said, but Parkinson’s often starts with a tremor on one side that occurs while the person is at rest. Symptoms are usually divided into those that affect movement – such as tremors, stiffness, slowness, walking or balance problems – and those that don’t, including constipation (which can precede the tremor), loss of smell and sleep problems. Parkinson’s can also lead to memory problems and difficulty paying attention or multitasking, Dolhun said.

Okun said Ali had most of the typical symptoms of Parkinson’s. He also had symptoms suggestive of head trauma, including slurring of his speech, Okun said.

Ali never complained about those symptoms, Okun said, and never seemed defined by them.

Many people thought Ali should turn down the request to carry the Olympic torch in the 1996 Atlanta Olympics. But he did it. And in 2000, he agreed to hold the flame as it started its journey to Sydney, Australia. When the moment arrived, Ali was busy entertaining people with magic tricks and asked Okun to hold the torch until he was done. Then Ali proceeded to grasp it steadily enough to be lit. He carried the torch again in 2012 in London, again defying expectations.

“Though he had all this disability that was visible with our eyes, we were deceived,” said Okun, who described Ali as the most astonishing Parkinson’s patient he’s ever met. “He’s shuffling. He’s tremoring. He’s having trouble and we would just completely underestimate him.”