

Dr. Ann McKee on Frontline

# ‘Would you let your kids play football?’



ANN MCKEE, MD, is a professor of neurology and pathology at Boston University Medical School and director of the Neuropathology Service for the New England Veterans Administration Medical Centers in Bedford, Massachusetts. In an interview on Frontline in 2013 she drew attention to the damage caused by subconcussive blows to the head.

Excerpts from an interview by Michael Kirk that aired May 10, 2013. Kirk asks why Dr. McKee appeared at a press conference on Super Bowl Sunday in 2009.

MCKEE: We were trying to draw attention to this condition and [the idea] that this condition could occur, we felt, as a result of playing football; that just these concussions, and even the subconcussions of football, were causing this disease to develop in some individuals. That was extremely newsworthy, we felt, and people needed to pay attention.

And at the time, we also had the brain of—I can say it now— Eric Pelly, although I wasn’t able to say it at that news conference, an 18-year-old. We had been able to get the brain of an 18-year-old who had died 10 days after suffering his fourth con-

cussion playing high school sports. We treated it the same way as the others. I was shocked to find that, in the brain of this 18-year-old, there were little tiny spots, little tiny areas in the frontal lobe, that looked just like this disease. But they were just tiny spots, as though this is how this disease starts.

And the fact that he was 18 was just—I mean, I had an 18-year-old at that time. You know that that brain is supposed to be pristine. It’s supposed to be perfect. It’s still laying down tracks. It’s still developing. And this brain already had signs of very serious deterioration in it. I have no idea if he would have lived longer if it would have gone onto this other thing. But the fact that it was there, and he was only playing high school-level sports, I think that’s a cause for concern...

KIRK: What are the facts of the [Owen Thomas] case?

MCKEE: ...The family wanted to donate the brain because they thought he would be a control, because he had loved football. They had heard about our work. They knew how important football was to Owen, and they thought he would be—if they could contribute to the work in any way, they wanted to.

I remember looking at the brain, expecting—I knew it was a 21-year-old that had committed suicide, and I was fully prepared to see nothing... I just couldn’t believe what I was seeing, that in the brain of a 21-year-old, you can see damage.

And it wasn’t just one spot; it was 20 spots. It was eating away at multiple areas of his brain. And a 21-year-old. Honestly, even now, it just—it’s something I couldn’t conceive of before, you know. To see a process that’s destroying brain cells and looks like it’s spreading in such a young kid, I don’t know, it just -- it just floored me.

KIRK: Had he had lots of concussions?

MCKEE: He had never had a concussion, as it turns out. He only played football.

KIRK: Ergo? (Therefore)

MCKEE: Ergo those subconcussive hits, those hits that don’t even rise to the level of what we call a concussion, or symptoms, just playing the game can be dangerous for some people.

KIRK: Does the NFL get that message?

MCKEE: I think so. I mean, we’ve said it so long now.

KIRK: At that time?

MCKEE: Oh, at that time, no, I don’t think so. At that time, no. Subconcussive hits were just beginning to come into people’s sight. We were just hearing from some accelerometer data that individual linemen were getting like 900 to 1,500 hits over the level of 10g’s, which is, you know, a mild

hit, but it’s still something, every season. So if you think about it, if you play 10 seasons, you’ve got 10,000, 15,000 hits. That data was just starting to come in.

KIRK: Wait a minute. Say that again.

MCKEE: Well, there’s data from accelerometers. [Dartmouth University’s Richard] Greenwald and other people were putting detectors in the helmets to measure the velocity of the hits. And even though it’s an imperfect system, and it doesn’t register all the hits, they were measuring 900 to 1,500 hits in a season for one player. And sometimes some players were getting 2,200 hits in one season—college football and now high school football. It’s not just professional football...

KIRK: If you had children who were 8 and 10 and 12, would they play football?

MCKEE: Eight, 10, 12? No, they would not.

KIRK: Why?

MCKEE: Because the way football is being played currently, that I’ve seen, it’s dangerous. It’s dangerous, and it could impact their long-term mental health. You only get one brain. The thing you want your kids to do most of all is succeed in life and be everything they can be. And if there’s anything that may infringe on that, that may limit that, I don’t want my kids doing it.

KIRK: High school OK?

MCKEE: You know, I just don’t feel like I’m in a position to say anything is OK right now. I’m not going to—I’m not even sure about high school football, even well-managed high school football. We see this in some high schoolers. Let’s figure out what this is and how to prevent it, and then I’ll say we should all be playing football.

KIRK: College?

MCKEE: I have a lot of college football players in my Brain Bank with CTE.

## Intractable headache after back surgery

### Could Steve Kerr Have Used Better Coaching?

Steve Kerr is the Golden State Warriors’ likable, brilliant coach. In 2015, soon after his team won the NBA championship, Kerr underwent surgery to eliminate the pain caused by a ruptured disk. A scalpel evidently nicked the membrane that contains the fluid surrounding the spinal cord. When the spine and brain lose cushioning, severe headaches, nausea and other symptoms can ensue. Kerr had to take off much of the 2015-2016 season. A second surgery was supposed to correct the problem but did not.



Kerr returned to coaching in the fall of 2016. He never said that he was cured, only that he was feeling better. He said that he had tried cannabis and that it had not alleviated his symptoms. He was quoted in the Washington Post expressing strong regret about having opted for surgery in the first place:

“I can tell you if you’re listening out there, stay away from back surgery. I can say that from the bottom of my heart. Rehab, rehab, rehab. Don’t let anyone get in there.”

Experience has given Steve Kerr a new perspective on back surgery. Maybe experience will, in due course, change his perspective on cannabis.

Jeffrey Hergenrather, MD, president of the Society of Cannabis Clinicians, is an aging jock who thinks very highly of Steve

Kerr. (Who doesn’t?) Upon hearing that cannabis hadn’t provided him relief, Hergenrather commented,

“Maybe he could have used better advice. How much did his doctor know about cannabis? Maybe he needed help finding the right delivery system, the right cannabinoid ratios, the right dose.”

Steve Kerr may be unaware that there are specialists worth consulting when trying cannabis to treat an unusual problem. The media has successfully created an image of the “potdoc” as a profiteer who plays no role beyond authorizing people to use the herb as medicine. In reality, there is a spectrum of expertise. At one end are doctors with an understanding of how the endocannabinoid system works, and the range of symptoms that can be alleviated by cannabis, and the specific needs of the individual they are treating. —Fred Gardner

## Add Backstories...

We previously noted studies published in the *Journal of the American Medical Association*, *Spine*, and the *New England Journal of Medicine* showing that vertebroplasty (a back surgery procedure) doesn’t provide more pain relief to patients with compression fractures than a fake procedure. Add this paper <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5941218/> from the *BMJ*, which concludes, ‘Percutaneous vertebroplasty did not result in statistically significant greater pain relief than a sham procedure during 12 months follow-up among a group of patients with acute osteoporotic compression fractures of the vertebral body. These results do not support using percutaneous vertebroplasty to treat acute osteoporotic vertebral compression fractures.’

