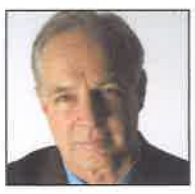
'I'M A CHEERLEADER FOR THE BRAIN.'

PART 9
OF 9



In this series, Rick Telander catches up with former teammates who describe how football helped them in their lives, but also how injuries suffered 40 years ago haunt them today.

by RICK TELANDER

A new brain has come in.

Dr. Ann McKee leads me to the morgue. Neurologist McKee and her co-workers here at the New England Veterans Administration Medical Center in Bedford, Mass., call it the "brain bank" because this is where more than a thousand human brains are stored in freezers at minus-80 degrees Celsius. The brains are stored in labeled baggies and are stacked carefully like items in a metaphysical supermarket.

There are also four large, metal drawers in another refrigerated unit, and signs on each say, "FEET FIRST, HEAD BY DOOR." So I will call this a morgue.

Dr. McKee puts on a blue surgical suit and purple latex gloves. There are a scalpel, scissors and an 18-inch, black-handled knife lying on the dissection table. She points to the human brain that is in front of us, in halves, on a black cutting board. The brain is gray. It came from a man, a former football player, who had been embalmed. The man had advanced chronic traumatic encephalopathy (CTE) when he died. Dr. McKee shows me the odd hollows and indentations at the top of each lobe.

"Those holes in the membrane should not be there," she says.

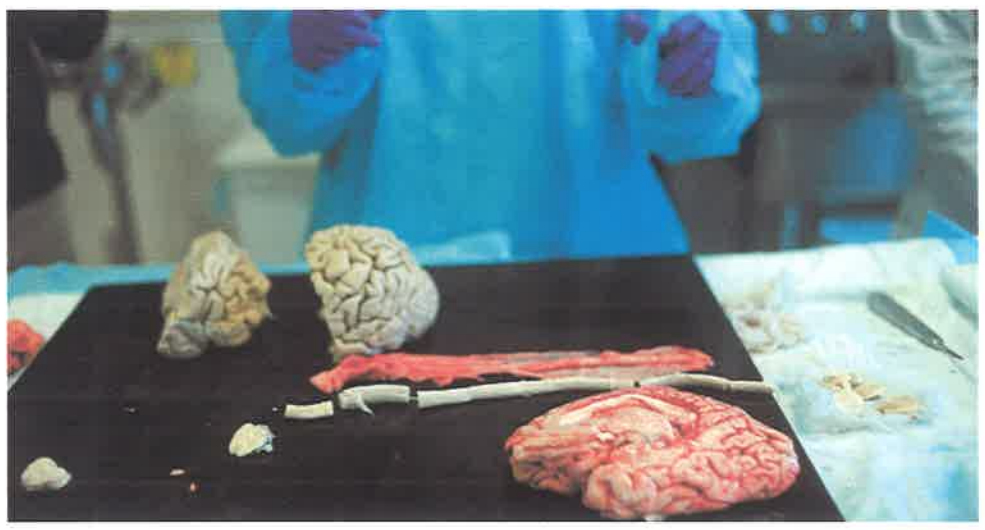
But this isn't the new brain. The new one is to the right on the cutting board and is wrapped in something resembling butcher's paper, which has turned pink. This brain wasn't embalmed.

"This just came in," Dr. McKee says as she unwraps the brain, which is in two parcels. "It's a nice sample. It's the brain of an older NFL player."

She picks up the scalpel.

"This is the cerebellum," Dr. McKee says as she cuts away a thin piece of the tissue from deep within the hemisphere.

She takes the slice and puts it on a metal tray, which she hands to an assistant. The sample will be flash-frozen and stored until she can begin her cellular investigation.



JOHN J. KIM~SUN-TIMES

'I DO SEE A PERSON. I TREAT THESE BRAINS WITH RESPECT. IT'S SO PERSONAL. FOR ME, IT'S . . . A GIFT." —DR. ANN McKEE, as she examines brains of former NFL players

I ask her what she feels, what she sees.

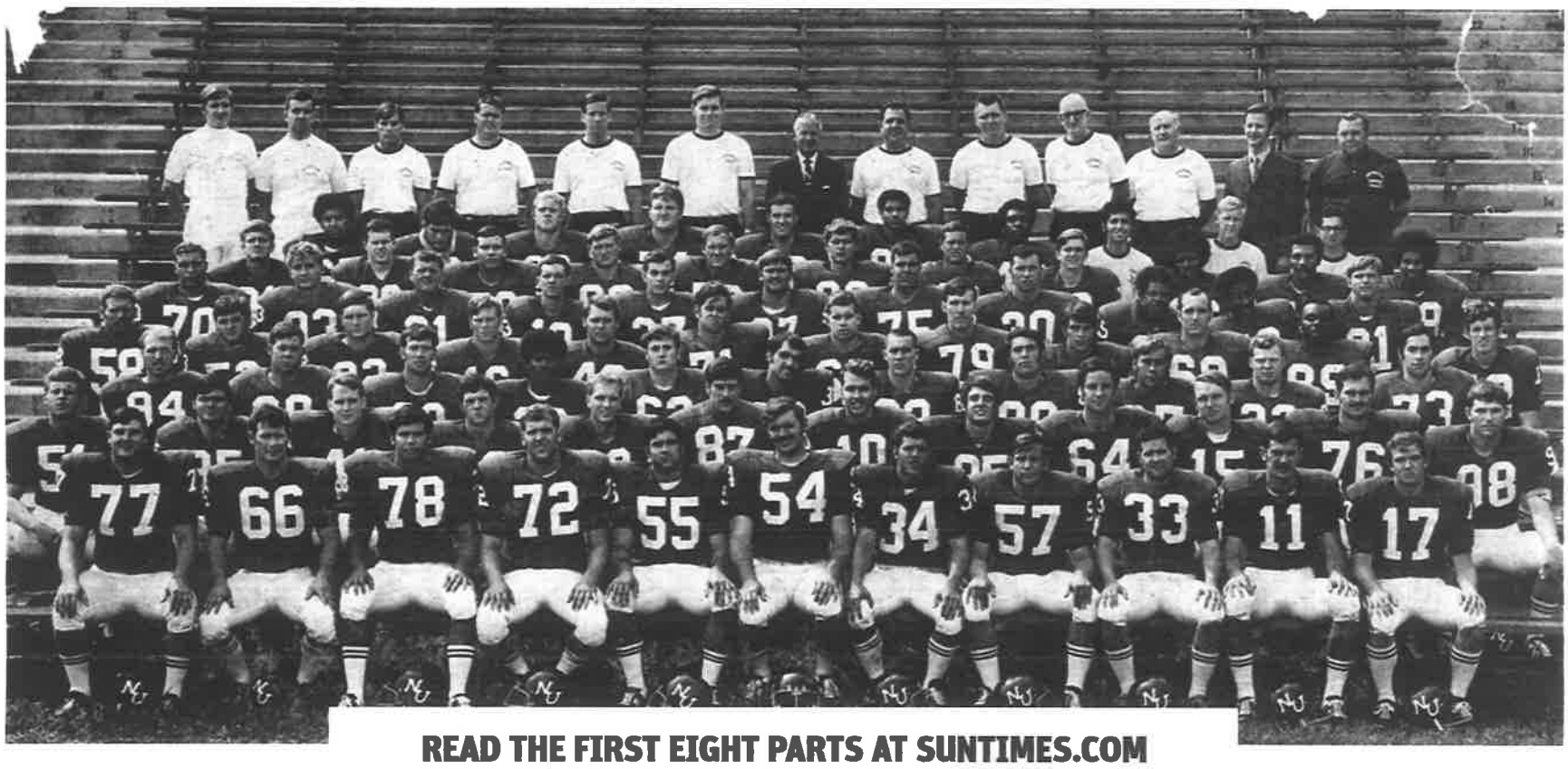
"I do see a person," Dr. McKee answers. "I treat these brains with respect. It's so personal. For me, it's . . . a gift."

Dr. McKee's research on brain trauma, as well as the research done at several other major universities and hospitals, hopefully is changing the landscape of football forever. To begin with, after finding out the connection between brain hits and future dementia, parents of young football players might reassess their attitudes about routine

THE TEAM

WHAT FOOTBALL DID FOR US . . . AND WHAT FOOTBALL DID TO US

THE STORY OF THE 1968-1970 NORTHWESTERN WILDCATS



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Football, the brain and CTE

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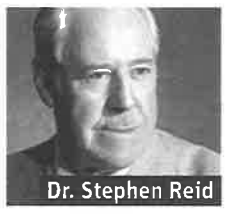

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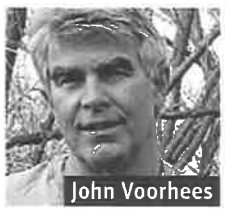

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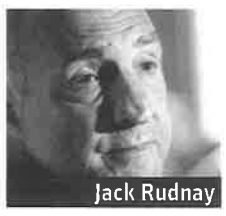

PART 7
My battered — but unbowed — friend

PART 8
Memory loss: From football or just aging?

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might lead to a philosophical lessening, a gradual mental degrading over time and through large numbers, of men in this country?

I asked Dr. Rowland W. Chang, a professor of preventive medicine at Northwestern's Feinberg School of Medicine, that question. Chang deals with statistics and diseases.

"Prevalence is equal to incidence times average length of duration," he says. "That's an epidemiological principle. You have to be careful with statistics, but there are a lot of diseases that are gender-based."

Prostate cancer and ovarian cancer are two obvious ones.

So if there was something unhealthy that only males did and that incubated and hatched later, would it make sense that there might be some noticeable difference down the road between men and women?

"I think that's reasonable to speculate," Chang said, adding it was all theoretical.

I brought up Chernobyl and the way people who lived closer to the nuclear meltdown generally had more radiation-related problems in the years to come than those who lived farther away. I brought up the fact that children exposed to lead paint had problems that children who weren't exposed to it didn't have. I brought up smoking. Dr. McKee, in fact, has compared CTE and the "cascade" of problems it causes with smoking, in that it takes many years for the smoke damage to manifest itself as cancer, emphysema, stroke or heart attack.

What if football players in America have been even slightly brain-damaged during their careers? It has been estimated that a college lineman takes about 1,500 subconcussive hits during a single season. Maybe an outside linebacker takes fewer hits, but they are of greater intensity. Maybe a wide receiver takes even fewer, but a couple of them are of great magnitude. Maybe pee-wee players get the equivalent of soft rain on the prairie.

Those hits, including the ones we wouldn't even classify as injuries, must do something to males as a populace. Might head blows from football lead to a vague "dumbing down" of guys? Or to some misfortune that hasn't been quantified yet?

Dr. Chang says it's possible.

I think it's more than possible.

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Should we stop playing football? No. I'm sorry, but we males need it. As Scientific American Mind stated in a recent article on human gender differences: "Males are the more belligerent sex in virtually all mammalian species that biologists have studied." The marked exception is the female spotted hyena. But even this, the authors noted, might prove the rule because female spotted hyenas have more testosterone than their male counterparts. Yep, we guys will find something violent to play, like football, whether society likes it or not. But there are ways to make the game safer. I've mentioned some obvious ones. Bright minds can determine a lot more.

It's too bad football causes joint damage, but it's worse that our head is in the middle of our shoulders. "Put your hat on him!" is a favorite coaching expression. Maybe it won't be someday.

Before we say goodbye, Dr. McKee wishes me and all my pals the best of luck. She is an upbeat person, she loves sports and she is incredibly positive about the human brain.

"The more you know about it, the more you can't believe it exists," she says. "I'm a cheerleader for the brain."

As each of us should be.

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ERIC DAVIS~FOR SUN-TIMES MEDIA

head-knocking.

Dr. McKee has three children, ages 14 (girl), 20 (boy) and 24 (girl). Though she loves football — she's a diehard Packers fan from Appleton, Wis., remember — she is appalled at the example the jack-'em-up, knock-'em-out culture of machismo embodied by the NFL sets for youth. Indeed, it is now known that head trauma can be even more damaging for young kids than for adults.

"Young players, they follow the NFL," she says. "It starts at the top."

But change can start everywhere, too. Brutal, untrained coaches and uninformed trainers must not be tolerated at any level. Football is a rough game, but constant head injuries don't have to be a part of it. That in itself might be news. Certain drills that serve no purpose other than to increase the rate of head and neck injuries can be made illegal. Equipment can change and become safer, and rules can follow along to ensure the added protection — harder helmets and tougher shoulder pads, for example — doesn't simply become more weaponry. (These moderate suggestions come from a former player who remembers what it was like when drinking water in practice was against the rules.)

Above all, when a player does hurt his head, he must not play again until he is completely healthy.

Dr. McKee's mission is to find out how and why brain trauma causes tau protein to build up and cells to die. She hopes her work can assist in the development of a vaccine or cure for CTE or, at the very least, a test that can be used to detect CTE in a living brain. She suggests a urine test for tau as a possibility. Her research will help athletes, abuse victims, aging people and, of course, soldiers.

"An IED explodes from 150 yards away, and you can have brain trauma," she says.

In that regard, her work could be of benefit, if it were needed, to people such as my old roommate Jack Smeeton, the ballplayer, and John Smeeton, his Marine son. Indeed, according to Army Times, 100,000 members of the armed forces have been diagnosed with mild traumatic brain injuries since 2003.

None of this is simple. For instance, it long has been assumed that head injuries caused by explosions and sports-related blows are about the same. In most ways, they are. But a recent study by scientists at the Massachusetts Institute of Technology hints that the brief electromagnetic charge created inside the skull when a bomb goes off might cause even more inflammation and wiring damage to the brain than mere vector force does.

Not only that, it appears genetic factors — specifically, a variant of the gene known as ApoE4 — might make some athletes more susceptible to the long-term, harmful effects of tackles and punches. As far as medical knowledge goes, if we can use a metaphor here, the human body is a deep forest, but the brain is an uncharted jungle of boundless mystery and wonder.

"We're tremendously hopeful," Dr. McKee says as we leave the brain bank. "There are treatments coming. We're working on anti-tau. The main thing is, you can't do anything when you don't know."

For a while, nobody wanted to know anything. The NFL was moving so slowly on brain research that it took troubled, depressed, sometimes-suicidal former players such as Andre Waters, Terry Long, Mike Webster and Justin Strzelczyk to get the attention of the league — and the public.

Dr. Ira Casson, the former co-chairman of the NFL's committee on mild traumatic brain injury, told Congress in January that there wasn't enough evidence to prove that chronic head blows in football "result in long-term brain damage." Other brain experts, as you might guess, have ridiculed that stance. Dr. McKee calls Casson "the voice of denial."

THE CONNECTION BETWEEN BRAIN HITS AND FUTURE DEMENTIA MIGHT MAKE PARENTS OF YOUNG FOOTBALL PLAYERS RETHINK THEIR ATTITUDES ABOUT ROUTINE HEAD-KNOCKING.

All the Northwestern players I talked with for this series, including those who weren't quoted, were happy to have played the sport. Each thinks football, with its discipline and subordination to a cause, helped him achieve larger goals in life. Jack Rudnay says it is the philosophy of not giving up, of being a warrior, that has stayed with him. And now he knows no other way.

John Voorhees was troubled, as was I, by things that happened during our time in college. So were others. Eric Hutchinson still doesn't want to talk about the old days. And he was a potential first-round draft pick who told "Cadillac" Jack Dustin, one of his housemates and now a medical doctor, to hang up on inquiring NFL teams when they called.

The Kent State and Jackson State killings occurred in May 1970, at the end of our spring season. My teammate Mike Adamle, from Kent, Ohio, had gone to high school with some of the National Guard members who were in the group that fired on the unarmed students at Kent State, killing four and wounding nine. A presidential commission that same year declared the shootings "unnecessary, unwarranted and inexcusable." There was a military draft back then for all young men. To tell the complete story of our college football experience, intertwined as it was with the Vietnam War, civil disobedience, racial inequality and a country in the tumult of cultural revolution, is a story for another day.

All of us, even the disenchanted, agree that football was a defining moment in our lives. All praised the friendships made, the brotherhood joined. We recognize the osteoarthritis issues we'll be dealing with for the rest of our lives because of the pounding, misalignment of joints and surgery. Dr. Victoria Brander, an arthritis expert at Northwestern, says we need to be able to walk well, to be "normal" for many more years, so that we can work and enjoy life. She is right. But for some of us, it's a little late. We all limp at the end, don't we?

Football will improve; that is certain. Dr. Hunt Batjer, a neurologist from Northwestern, and Dr. Richard Ellenbogen, from the University of Washington, recently were named co-chairmen of the newly titled NFL Head, Neck and Spine Medical Committee. I tried to get ahold of Batjer to hear what his thoughts about concussions were, but he said through an intermediary: "The NFL has requested that Rich and I stay out of the press till we reorganize the committee." Fair enough.

But there is something I wonder. Is it possible that football, while it develops many things that are of social and psychological benefit to its participants,

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