

New 'National Sports Brain Bank' will boost head injury research

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A new brain bank is accepting future donations from living athletes, in

an effort to perform long-term research into the effects of sports-related concussion.

[The National Sports Brain Bank](#) (NSBB) at the University of Pittsburgh will track the health of living participants on an annual basis, and will autopsy their donated brains after their death.

"We want to follow prospective donors longitudinally while they're still alive and get information from them about their sports participation, trauma, history, other medical history, any symptoms they may experience," said NSBB Director [Dr. Julia Kofler](#).

"We can then correlate their clinical information with what we see down the road under the microscope, at the time of autopsy," she said.

Two former NFL stars—Hall of Fame running back [Jerome Bettis](#) and former Pittsburgh Steelers running back [Merril Hoge](#)—pledged at a news conference announcing the NSBB to stand among the first group of pro athletes who will participate in the brain bank.

Bettis said he's taking part as a way of giving back to [professional football](#), and also potentially help protect his children's health.

"I'm a father and my son plays [high school football](#). My daughter played high school basketball. She had multiple concussions," Bettis said. "For me, it's important that I be that [role model](#) to show that we have that job, if you will, as a parent, to help protect our children. And that's providing the information that can possibly help my son or my daughter in later years so that we can understand what we're dealing with and do a better job with the next generation."

Sports concussions have been linked to a neurodegenerative disease called [chronic traumatic encephalopathy](#) (CTE), but one of the

challenges in researching CTE is that patients are often studied only after death, Kofler said.

"We don't want to have to rely on collecting medical information from their families after they have passed away," she said. "We want to hear from the patients themselves."

The endeavor is casting a wide net for participants, Kofler said. Anyone who's played a contact sport at any time in their lives can sign up to donate their brain.

"These can be the traditional contact sports like football, boxing, wrestling, hockey, soccer, but also other sports that you may not think of like equestrians, motocross riding or cheerleading," Kofler said. "All of these participants may be at an increased risk for concussions."

Invitations will be also extended to lower-level players.

"In addition to [professional athletes](#), the research team will invite former athletes who participated in a variety of contact sports, whether that was playing on a high school level, college level or recreationally," said [Dr. Anantha Shekhar](#), dean of the University of Pittsburgh School of Medicine.

"Importantly, athletes who have not previously incurred a sports-related brain injury can also participate," he added. "The registry is open to all comers."

University of Pittsburgh Chancellor [Patrick Gallagher](#) said the health information and donated brains will be used to "significantly expand and advance the study of neurodegenerative diseases and traumatic brain injuries that result from a wide range of sports and other activities."

Much is known about CTE, but researchers are still trying to refine ways to diagnose it and predict who might fall prey to it, and to understand why it happens at all, Kofler said.

"We need additional brains because there are many other open questions," she said.

"Many patients live who have played contact sports and some of them are here in the room and live on into the 70s and 80s. I just want to highlight two examples sitting in the room who are completely cognitive intact," Kofler said at the briefing, indicating Bettis and Hoge.

"On the other hand, with my own eyes, I've looked at the brain of a 15-year-old teenager who had early CTE findings in their brain," Kofler continued. "So there's a huge range of vulnerability, with some people being very susceptible and other people very resilient. And we don't really know what makes one person more vulnerable than other."

However, the brain diseases to be studied by the NSBB will not be limited to CTE, Gallagher noted.

"Researchers at the National Sports Brain Bank will use donated tissue from adults who played a wide range of contact sports at the amateur or professional level to investigate the frequency and severity of chronic traumatic encephalopathy or CTE, and to screen for neurodegenerative disorders like Alzheimer's and Parkinson's disease and ALS," Gallagher said. "Donations to the brain bank will merge with our existing neurodegenerative brain bank, which was founded more than 35 years ago and is one of the largest in the country."

The findings that come back from a brain donation can provide families with needed answers, said [Dusty Kirk](#), a board member of the Chuck Noll Foundation for Brain Injury Research, which provided the lead

donation for the NSBB.

Kirk said her late husband, Bill Caroselli, was an outstanding trial lawyer in Pittsburgh but had played football in high school and both football and rugby in college.

"I started to notice that Bill was having difficulty in finding words and speaking," Kirk said. "He lost his ability to articulate, and I knew this must have been devastating for a trial lawyer."

Caroselli agreed to have his [brain](#) donated to the University of Pittsburgh for research after his death, which occurred in 2018, Kirk said.

"Most people thought, oh, he played sports. He must have CTE. But we just weren't sure," she said.

It turned out that Caroselli was actually suffering from a difficult-to-diagnose disease called progressive supranuclear palsy, Kirk said.

"Knowing the cause of what happened to Bill gave me some peace of mind," she said. "I knew it wasn't from the sports that he loved to play. And it assured me that I had done the right thing and not just for Bill, but for others who might present with similar symptoms."

The NSBB will offer the same service to the families of all participants, Kofler said.

"We will do a detailed evaluation, share the results back with the family, and then make the tissue available to the research community for a wide range of studies," she said. "We will be able to connect autopsies either back to the clinical data."

More information: The National Sports Brain Bank has more about

[signing up for its long-term study](#). Boston University has more about [chronic traumatic encephalopathy](#).

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