
Project tracks veterans' brain injuries

Dr. David Cifu of VCU's Medical School leads a national research study that aims to help physicians understand more about concussions and their long-term effects



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It's an injury that leaves no visible scars.

People who suffer a concussion, formally known as traumatic brain injury, can experience headaches, confusion and amnesia, but rarely is there physical evidence of brain damage. While the effects are usually temporary, for about 15 percent of affected individuals, symptoms never fully disappear.

Concussions can occur in any scenario – from playing football or other sports to being in a

‘There are millions of people in this country who have combat-associated concussions from the vagaries of war, as well as secondary mental health disorders from those wars,’ says Dr. David Cifu.



Dr. David Cifu talking to his medical colleagues. (Photo courtesy of Dr. Cifu)



Dr. David Cifu talks with fellow CENC members at a meeting of the consortium in 2014. (Photo courtesy of VCU Department of Physical Medicine and Rehabilitation)

traffic accident. They’re especially prevalent in the military: About 20 percent of U.S. veterans who fought in the Iraq War sustained concussions. Of soldiers who received head trauma, about 8 percent continue to have symptoms today, said Dr. David Cifu, chair of the Department of Physical Medicine and Rehabilitation in the VCU School of Medicine.

“There are hundreds of thousands of people in this country who have combat-associated concussions from the vagaries of war, as well as secondary mental health disorders from those wars,” Cifu said. “We need to understand how they’re going to do in terms of those symptoms. Will they worsen? Will they have degeneration?”

Since 2013, Cifu has led a national research project that aims to help physicians understand more about concussions and their long-term effects. The Chronic Effects of Neurotrauma Consortium, centered at VCU, involves 30 universities and 10 research studies across the country. The U.S. Department of Defense and the U.S. Department of Veterans Affairs jointly fund CENC with a grant of more than \$62 million.

While brain injuries have been an issue in every war, they are also common in sports and civilian life. More than 2.5 million concussions are reported annually in the United States; they contribute to about 30 percent of all injury deaths, according to the U.S. Centers for Disease Control and Prevention.

As part of CENC, Cifu is leading an observational study involving 1,100 Iraq War veterans, of whom 880 experienced concussions and 220 did not. Some of these veterans suffered their injury more than 10 years ago. To study the long-term effects, Cifu and his team are using studies like MRIs, balance tests and eye tracking.



Dr. David Cifu



In 2008, Dr. David Cifu, then medical director of the McGuire Veterans Affairs Medical Center, tells Marine Corps Gen. James E. Cartwright, vice chairman of the Joint Chiefs of Staff, about treatment facilities at the center in Richmond. (Photo courtesy of the U.S. Defense Department)

‘If you’re always exposed to constant trauma or stress, and you’ve got depression or anxiety before you have a brain injury, you’re going to do worse after a brain injury.’

“While these are folks that are relying on VAs or health clinics for care, they’re just like you and me. Even though they’ve had these concussions, we’re seeing that they’re still working, have regular lives, houses to live in. They’re productive in their lives,” Cifu said. “But they’re having difficulties, having some persistent headaches or sleep disturbances, or high-level attention or memory problems.”

While researchers have not found a direct causation, about 75 percent of those veterans also suffer from mental illnesses like depression and posttraumatic stress disorder. Treatments exist, but there isn’t a comprehensive treatment that applies to every victim. As of now, the most effective treatment is “prehab” rather than rehab, Cifu said.

“If you’re always exposed to constant trauma or stress, and you’ve got depression or anxiety before you have a brain injury, you’re going to do worse after a brain injury,” Cifu said. “So we want to try and keep the brain as healthy as possible, build resiliency inside these folks so if they do get trauma or a brain injury, they can rebound as quickly as possible and are aware that steps will be done to try and treat them.”

Across the country, more organizations are organizing a call to arms to study concussions. The Defense Department has also partnered with the NCAA to better detect such injuries among athletes. At the University of California, San Francisco, the research group TRACK-TBI is looking at better treatment strategies in the civilian sector.

With the CENC in its final two years, Cifu hopes the consortium will receive additional funding so researchers can continue following veterans who have suffered traumatic brain injuries.



“This isn’t a one-year problem. This isn’t a three-year problem. What we’re seeing are chronic issues, lifelong issues,” Cifu said. •