

Researchers collect brains to study battle-related disorders

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Brain scientists in Washington state are asking the families of armed services members to consider one last contribution.

Researchers at the University of Washington and the local Veterans Affairs health care system have begun collecting the donated brains of service members to examine for possible dementia and other disorders linked to repeated blast injury and head trauma.

The program, the Pacific Northwest Brain Donor Network, is aimed at understanding the impact of mild [traumatic brain injury](#) on active-duty military members and veterans.

"We are going to study these brains to the full extent that we are capable," said Dr. C. Dirk Keene, who leads the neuropathology core at UW Medicine. "They are so rare, so valuable and just so precious, and can give us so much information about what these exposures mean."

Keene and his colleagues, including Dr. Elaine Peskind, who co-directs the Mental Illness Research, Education and Clinical Centers at the Puget Sound Veterans Administration hospital, will look for signs that service members with mTBI also may have developed disorders including Alzheimer's disease or chronic traumatic encephalopathy.

CTE has received wide attention recently after a large number of former American football players were diagnosed with the neurological disorder. Like football players, troops who suffer repeated concussions

or other [head trauma](#) may develop the debilitating condition, which is diagnosed only after death.

But, so far, little research has confirmed any military connection.

"What's been published previously is on the brains of five Iraq veterans," Peskind said. "Another paper will be published soon with another five veterans. There's just nothing out there."

Since the program started in March, researchers have acquired three brains. They include donations from one military veteran, a middle-age man who was not exposed to blast injury, and a military contractor, a woman, also middle-age, who worked in a war zone.

The donations also include the brain of Cody Duran, 30, of Lakewood, who died April 5 from an unknown cause, said his mother, Victoria Padron.

"I donated everything," she said. "Whatever they could use, they could have."

Padron's son wasn't a veteran, but his young brain will serve as a control, an example of normal tissue against which scientists will measure changes.

For every brain from a veteran that researchers acquire, they'll also need the brain of someone who didn't serve, Keene said. Researchers expect to receive one brain a month for the study.

The brains will be stored at UW's brain bank, which already holds about 2,000 brains donated to study dementias and other diseases of aging. Although there are at least eight brain banks across the U.S., none is focused on studying military injuries, Keene said.

One reason is that many brain banks focus on collecting samples from people with fatal disorders, such as Alzheimer's disease. Participants in those studies know their fate and agree in advance to donate their brains after death.

"The approach we have to take for our service veterans is very different, because they are young people and we don't expect them to die soon," Peskind said.

For Padron, the request to donate her son's brain within days of his death was a "bizarre question," she said. But she quickly agreed because it was what her son, a father of three young children, would have wanted.

"That's how Cody was, a super-generous person," she said. "By giving his eyes, his eyes will continue living. By giving his brain to science, learning will continue."

Information from the study will be open to other researchers, Keene said.

The pilot study was paid for in part by a \$30,000 grant from the federal Alzheimer's Disease Research Centers obtained by Dr. Desiree Marshall, an assistant medical examiner at the King County Medical Examiner's Office who has also been working with Peskind.

Combining the study of military injuries with dementias and other disorders makes sense, Marshall said. It will be interesting to see whether the brains of veterans have signs of chronic traumatic encephalopathy, including a newly defined marker, a particular brain lesion caused by abnormal accumulations of proteins called tau. Tau proteins are considered a prime cause of Alzheimer's disease.

The goal now is to increase the number of brains collected-and to find

more funding, either through philanthropy or grants, the researchers said.

"It's so limited, the amount of information we have now," Marshall said. "Each [brain](#), each case, is going to be so important."

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