

# Bomb-induced brain injury may be its own disease

 [Gregg Zoroya](#), USA TODAY 4:29 p.m. EST January 15, 2015



(Photo: USA TODAY)

Scientists studying the brains of young veterans who died long after war shed light on a growing theory about damage caused by bomb blasts — that it's unique enough to be its own disease.

Roadside bombs and improvised explosive devices, or IEDs, were the No. 1 weapon for killing and wounding U.S. troops in Iraq and Afghanistan, and researchers are still trying to sort out what hidden damage might have occurred.

New study results announced this week by Johns Hopkins University School of Medicine reveal brain lesions different than those that occur in sports, car crashes or drug overdoses.

"We saw a pattern that we had not seen before," said Vassilis Koliatsos, co-author of the study and professor of pathology, neurology and psychiatry and behavioral sciences at Johns Hopkins. The research was published in *Acta Neuropathologica Communications*.

Scientists examined the brains of five deceased veterans from the ages of 23 to 38, all with a history of surviving exposures to blasts in combat. Researchers found a honeycomb pattern of damage, and the blotches were spread across an area of the brain that deals with executive functions such as decision-making, memory or reasoning.

Lasting damage to this area can cause moodiness, difficulty processing thoughts, memory problems, personality changes and impulsiveness, Koliatsos said.

Military and civilian scientists speculated years ago that there was something different about blast-related brain damage. Now-retired colonel Geoffrey Ling, who had been the Army's leading authority on brain injury, argued before a professional conclave in 2010 that blast-induced brain injury might deserve its own medical category, "a very interesting new disease."

Koliatsos said he agrees. He said the last time troops were similarly impacted by blasts was during World War I, when trenches were repeatedly bombarded and tens of thousands suffered behavioral problems blamed on what was then called shell shock.

Pentagon records show that since 2000, more than 300,000 servicemembers have suffered brain injuries — the vast majority of them mild and many from exposure to a blast. Those are only the cases the military knows about.

Another recent study published in the *Journal of Head Trauma Rehabilitation* by scientists at the Johns Hopkins Bloomberg School of Public Health conservatively estimates there were nearly 33,000 brain injury cases in Iraq and Afghanistan from 2003 to 2010 that were never diagnosed.

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