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Gulf War Syndrome Is Brain Damage Caused By Nerve Gas, Not Psychological Issues, UT Southwestern Study Proves

By Brantley Hargrove Thu., Sep. 15 2011 at 12:48 PM



There's no denying it now: Gulf War Syndrome, characterized by memory loss, lack of concentration, neuropathic pain and depression, is a physiological illness, not a psychological one.

A UT Southwestern study, published in the journal *Radiology*, used a specialized MRI that specifically measures blood flow in the brain and detected marked abnormalities in the brains of those with Gulf War Syndrome. Not only have those abnormalities persisted for 20 years, but in some cases they've worsened.

The findings mark a significant advancement in our understanding of the syndrome, which was for years written off by the Defense Department and the Department of Veterans Affairs as a form of combat stress rather than an objectively diagnosable injury. Dr. Robert Haley, chief epidemiologist at UT Southwestern, and a cadre of clinicians and researchers, have struggled with the government for some 18 years for research funding and to have the syndrome recognized as a legitimate war injury caused by chronic exposure to minimal amounts of sarin gas.

"This was really one of the first techniques to show an objective picture of whether there's really brain damage or not," Haley tells Unfair Park.

In this study, Haley used a neurotransmitter called acetylcholine, which mimics nerve gas and acts to slow the heart rate and blood flow to the brain, making you groggy. For those with receptors damaged by nerve gas, they don't become groggy at all. In fact, sometimes it has the opposite effect. By administering the neurotransmitter and projecting radio waves into the carotid artery, Haley used a kind of MRI to measure blood flow in response. Veterans afflicted with Gulf War Syndrome didn't respond normally by showing decreases in blood flow to the brain you'd expect.

It's no surprise, then, that many of them report sleep difficulties as well. Approximately 20 percent of the population has a weak form of a gene that protects nerve receptors from sarin gas, Haley says. As a result of this study, it's likely no coincidence that at least 25 percent of veterans who were deployed in Iraq are thought to have the syndrome, according to a VA report.

Because of Haley's work, we now know brain damage is involved. But which specific brain cells, and what's wrong with them? Until we understand the underlying pathology, Haley says, we can't treat them. "We're shooting in the dark," he said, referring to potential treatments. "So far, nobody's guessed right.

"But the research is really going to come to a head in the next six to 12 months."

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