

RED BULLS: BEYOND DEPLOYMENT

The new science of PTSD

by [Jessica Mador](#), Minnesota Public Radio

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St. Paul, Minn. — A door opened at the Inver Grove Heights armory and 55 soldiers marched in, home after a year in Iraq. The crowd cheered as they lined up in formation. Seconds later, they were dismissed.

Looking happy and slightly dazed, soldier Jeremiah Hokeness said it's great to be home.

"It's nice, just kind of a relief, just kind of a nice feeling. This is my second deployment so I'm kind of used to it," Hokeness said.

The soldiers made their way to a line of over-stuffed camouflage bags. For the last time, they heaved the giant bags onto their shoulders and headed off into the night. They are among the more than 1,000 Minnesota National Guard soldiers from the 34th Infantry Division coming home from Iraq this month.

For many of them, the road ahead will not be easy.

More than 1.6 million U.S. troops have deployed to Iraq and Afghanistan since October 2001. The Minnesota National Guard reports there have been 19,000 deployments, a number that includes people who've done multiple tours.

PTSD LINKED TO COMBAT TRAUMA

The Department of Defense estimates that up to 20 percent of those who've served will suffer from post-traumatic stress disorder or major depression.

Post-traumatic stress disorder, or PTSD, is a condition that can develop after a traumatic event like combat, sexual assault, child abuse or an accident.

While some of the symptoms of PTSD are considered part of a normal reaction to trauma, someone with PTSD experiences a very specific group of symptoms that generally don't fade.

They relive the traumatic event and experience the same fear and horror they did at the time of the trauma. They have severe nightmares and flashbacks.



Robert Thames

People with PTSD do everything possible to avoid situations that remind them of the trauma. They may feel numb or emotionally distant; hyper-vigilant; angry; and unable to sleep or relax.

University of Minnesota psychologist Michael Miller specializes in treating people with PTSD. He also served 22 years in the military, where he helped train commanders and soldiers how to manage combat stress.

Miller said loud noises like a car backfiring or fireworks can set off a PTSD reaction.

Driving in traffic is particularly scary. In Iraq, bombs are often hidden inside trash or other objects on the roadside. Overpasses offer cover for insurgents to ambush American convoys.

"So it's not uncommon for people to do everything they can to avoid being on the freeway, or being in places that remind them of being

AUDIO

 [The new science of PTSD \(feature audio\)](#)

RED BULLS: BEYOND DEPLOYMENT

More than 1,200 soldiers from Minnesota's 34th Infantry Division National Guard brigade are returning home. MPR looks at what happens on the home front after the welcome ceremonies.

[More in Red Bulls: Beyond Deployment](#)

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in Iraq," Miller said.

A major independent study of U.S. troops, which is used by the federal government and military, was conducted by the RAND Corporation in 2008.

It found that the single best predictor for PTSD and depression is exposure to combat trauma on deployment. Past trauma may also play a role.

The RAND study has provided benchmark data that is used by federal government and military sources.

A separate ongoing study of Minnesota National Guard soldiers by researchers at the Minneapolis VA found that high levels of anxiety before deployment, and the type of training, support and preparation a soldier has, can predict the likelihood of PTSD.

LEARNING FROM VIETNAM

In a lounge at a group home for homeless veterans in Minneapolis, Robert Thames explained how he lost 30 years and two marriages before he was ready to seek help for his PTSD.

Thames served in Vietnam as a Navy deck seaman and gunners mate. It was his job to clear the shoreline of enemy troops so the Marines could land.

When he got home, he was haunted by the things he saw. He knew something was wrong when he pulled a gun on his wife in the middle of the night.

"I would be in a dead sleep and I would jump. I would be so startled that I would grab my gun and it would scare her to death," Thames said. "That was really the demise of our marriage, because she couldn't handle it and I didn't see it. I couldn't recognize what it was."

"They recognize what they did wrong in Vietnam, and now they are trying to rectify that."

- Vietnam veteran Robert Thames

Thames and his Vietnam buddies tried to help each other because no other help was available. He said he drank to numb himself, but his symptoms only returned. He had flashbacks and horrible nightmares.

Despite struggling with PTSD, Thames held down a job and married again. But eventually, his drinking got the better of him.

After 18 years with his second wife, they split up. What followed was a downward spiral toward homelessness and loneliness.

A veteran Thames met at a shelter told him about a program for homeless veterans, which sent him to rehab. He got sober and moved into the group home, where he lived for two years.

With counseling, Thames' PTSD is under control for the first time since he got back from Vietnam in 1975. Recently, he moved out of the group home and into his own apartment.

He said he's glad the government is trying to help returning veterans from Iraq and Afghanistan, so they don't have to suffer what he went through.

"They recognize what they did wrong in Vietnam, and now they are trying to rectify that and make sure they don't make that same mistake with these young vets that are coming from the Gulf and the Iraqi War," Thames said. "I'm kind of proud of them for doing that."

Miller credits Vietnam veterans with raising awareness of PTSD.

"They paid a very heavy cost. But I think they really did put the groundwork in place for the current vets who are struggling, to be able to say, 'This is an issue, it was an issue for me before, I'm not going to allow it to be an issue for you now.'"

THE MILITARY'S NEW STRATEGY FOR PTSD

Many say the military is addressing mental health issues head on for the first time. The Defense Department launched a new strategy to reduce stigma around mental health. There are also a number of new counseling programs.

"I do think there has been an incredible amount of effort, and certainly military leaders at the highest levels of the chain of command are very engaged and very interested in this issue," said Navy Cpt. Edward Simmer, M.D.



A MEG machine

Simmer heads the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury, an agency designed to study the psychological effects of war and create programs to treat traumatic brain injury and PTSD.

The military has taken concrete steps to encourage veterans with PTSD to seek help. For example, mental health records related to PTSD are no longer required when service members apply for a security clearance. In most cases, the military does not share medical records with promotion boards, to prevent job discrimination against people with PTSD.

Historically, simply diagnosing post-traumatic stress disorder was a subjective process, and that left room for doubt.

The military uses an equation when it discharges someone with a disability, and that number is used to determine their amount of disability and health care benefits.

Recently, a group of veterans with PTSD brought a class action suit alleging the military illegally denied them health care and other benefits.

The plaintiffs in the class action lawsuit -- which covered a period ending in 2008 -- were given a disability rating for PTSD that indicated they were only 10 percent disabled or less. Since 2008, the military has given veterans discharged with PTSD a disability rating of at least 50 percent.

The numbers matter because a higher disability rating ensures a veteran lifelong disability benefits, and free health care for them and their family.

Last month, the military agreed to review their cases. The review could bring millions of dollars in benefits to thousands of veterans with PTSD. Disagreements over whether someone has PTSD may soon be a thing of the past.

NEW SCIENCE FOR DIAGNOSING PTSD

At the Brain Sciences Center at the Minneapolis VA Medical Center, Dr. Apostolos Georgopoulos explains how a MEG, or magnetoencephalography scanner, works.

Georgopoulos and his colleagues used the scanner for their research, and what they found was breathtaking. For the first time, they identified a distinctive brain pattern for PTSD in more than 97 percent of the subjects.

Until now, other brain-imaging techniques like an MRI were too slow or imprecise to capture a pattern associated with PTSD.



Dr. Apostolos Georgopoulos

The MEG scanner sensors take a series of overlapping images of the brain. The images give doctors a detailed picture of the neural activity and communication patterns in the brain's cerebral cortex. The scans are painless and take just one minute to complete.

Georgopoulos said the discovery proves that PTSD is a brain disease.

"These recurrent experiences, these memories that haunt you and come back and back and back, and you relive these disasters -- to the extent that you cannot do anything else and you are incapacitated -- they create a brain pattern that we can identify very uniquely," Georgopoulos said.

Georgopoulos said the image shows changes over time, which would allow doctors to chart the effectiveness of treatment. It would also allow for the development of new drugs and therapies tailored precisely for PTSD.

First, researchers hope to replicate their findings in a larger study.

Georgopoulos said there could soon be a day when all service members have their brains scanned before deployment and after they get home.

If it lives up to its promises, the identification of a distinct brain pattern could give legitimacy to generations of soldiers with PTSD who have been fighting for recognition.

It's a breakthrough, but science only goes so far. The burden is still on service members to ask for help.

The University of Minnesota's Miller said military culture makes admitting mental illness difficult.

"If you are in an organization such as the military, the last thing you want to do is show any vulnerability. That is not acceptable, not

when you have to rely on the person next to you to keep you alive," Miller said.

Many fear seeking help could hurt their careers.

A recent national study found that only about half of service members with PTSD or depression have sought treatment, and of those who did, only about half got adequate care.

The RAND Corporation study found that PTSD and depression cost the nation as much as \$6.2 billion in the two years following deployment, a figure which includes medical care and costs for lost productivity and suicide.

The study estimates that investing in more high-quality treatment could save close to \$2 billion within two years.

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