

# Military uses virtual therapy to help troops heal wounds

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The military is turning to the virtual world to treat traumatized veterans of the Iraq war, giving troops a high-tech way to confront and overcome mental war wounds.

Virtual Iraq uses electronically re-created Iraqi environs that look like a video game, as well as the sounds and smells of deployment, to help those suffering from post-traumatic stress disorder revisit the events that affected them so profoundly.

It is a joint venture of the Air Force, Navy and Army, along with the University of Southern California and Virtually Better Inc. The visual environs created for the therapy are based on the video game "Full Spectrum Warrior."

"We help them confront the memory of the trauma," said Dr. Barbara Rothbaum, psychologist and director of Atlanta's Emory University's



*Courtesy of the University of Southern California's Institute of Creative Technologies*

**An insurgent in Virtual Iraq, a simulated warzone designed to help troops suffering from post-traumatic stress disorder confront and overcome the incidents that scarred them.**



*Courtesy of Virtually Better Inc.*

**An airman tries out the Virtual Iraq program at a Virtually Better training**

Trauma and Anxiety Recovery Program. Rothbaum is a pioneer of virtual reality therapy who co-founded Virtually Better. "Sometimes it's hard to get at it. What we think is the virtual reality can help create a more potent exposure. ... It puts the person back there."

Almost everyone responds to a traumatic situation with fear, which goes away for most people, according to Rothbaum. PTSD is at least in part caused by a person not dealing with that fear and the emotion of their traumatic event. The event is so painful or horrific, that a person's natural tendency is to avoid it, she said in an e-mail.

"However, when people avoid thinking about it and all reminders of it, the fear does not [lessen]," she said.

In exposure therapy, a therapist helps the servicemember confront the memories, so that he or she becomes less afraid of those memories, thus being able to look at the situation differently and more rationally.

"Once their fear has decreased enough that they can really look at the situation and what happened and what they did, more than likely they will come to think about it differently, and realize, for example, it

site.



*Courtesy of the University of Southern California's Institute of Creative Technologies*  
**While Virtual Iraq may look cartoonish, therapists said that in previous virtual reality therapies used to treat other forms of PTSD, patients projected their own memories into the environment. One Vietnam veteran reported seeing tanks and people that were not part of the program.**



*Courtesy of the University of Southern California's Institute of Creative Technologies*  
**A local child waves to the convoy in Virtual Iraq.**

### **Reaching across stigma to a younger crowd**

Mental health therapists hope that Virtual Iraq's similarity to video games will help draw younger traumatized troops

wasn't their fault, or there was nothing they could have done differently, or they did the best they could under the circumstances," Rothbaum said.

### Re-creating scenes

Virtual Iraq offers a technological upgrade to standard exposure therapy.

There are about 40 Virtual Iraq systems in Defense Department and Veterans Affairs hospitals and clinics, according to Navy Cmdr. Russell Shilling, who helped create the system and is now the senior scientific adviser for psychological health at the Defense Center of Excellence for Psychological Health and Traumatic Brain Injury.

Citing privacy regulations preventing contact with therapy participants, military officials would not provide Stars and Stripes with access to troops who had used Virtual Iraq.

The Navy invested about \$6 million in research and development of the system in the past five years, Shilling said. The Army and Air Force are investing funds to study the system, as well as deploying it to various locations as the studies continue.

Post-traumatic stress disorder is among the most common diagnoses made by the Veterans Health Administration. Of approximately 300,000 Iraq and Afghanistan veterans with access to VA care, nearly 60,000 were diagnosed with PTSD,

to the treatment.

"They may be more likely to seek care like this than just going and talking," said Dr. Beth Davis, a deployment behavioral psychologist at Andrews Air Force Base, Md., one of eight stateside Air Force installations that started using Virtual Iraq this year.

Still, stigma remains a primary adversary in treating post-traumatic stress disorder, according to Dr. Barbara Rothbaum, a virtual reality therapy pioneer and director of Emory University's Trauma and Anxiety Research Program.

"Some people in the military don't want the stigma," she said. "I've had people tell me it makes them look weak."

Piled on top of all that is the notion that mental health therapy is not what a strong soldier should need.

"They were good and they were strong and it isn't a sign of weakness," Rothbaum said. "They go into the hospital for a physical injury and that's not a sign of weakness. We know these are all the wounds of war."

according to a 2008 House Committee on Veterans Affairs hearing.

Virtual Iraq helps PTSD patients access traumatic memories by replicating the war zone in a safe way that therapists can control, according to Dr. Beth Davis, a deployment behavioral health psychologist at Andrews Air Force Base, Md., where the program was introduced this spring.

"When servicemembers are experiencing PTSD, on certain occasions [they] have difficulty accessing particular memories or sensations," she said.

With Virtual Iraq, a troop is back driving a Humvee down an Iraqi highway, or exploring a city on foot patrols, she said. Ambient sound recordings including prayer calls, gunfire, men yelling and taunting, can be varied in intensity by the therapist.

The smell of fire, diesel, cordite, body odor and burning rubber are also used to facilitate memory recall and emotional processing, Davis said.

"It allows the therapist to manipulate the situations to best suit the individual in a standard therapy hour," she said. "We can re-create this scenario in an environment that is safe."

A variety of scents can be manufactured, both pleasant and unpleasant, according to Shilling. Scent devices have also been used in other virtual reality applications aimed at helping people overcome addictive behaviors such as smoking or drinking, Shilling wrote in an e-mail.

Therapists who conduct the virtual therapy train at Madigan Army Medical Center in Tacoma, Wash.

The Air Force has eight Virtual Iraq systems at base clinics around the States and is setting up another at Germany's Ramstein Air Base this fall, according to Lt. Col. Timothy Lacy, chief of telehealth and enterprise imaging for the Air Force's Medical Support Agency.

About a third of the troops using Virtual Iraq so far at Air Force clinics are from other branches, primarily the Army, Lacy said.

"They are bearing the brunt of the trauma," he said.

But the Air Force also tweaked the program for airmen, incorporating Air Force uniforms and scenarios.

"A lot of our folks have PTSD from collecting bodies and mortuary services," Lacy said.

Studies are ongoing to gauge the prospects for further investment in therapeutic tools similar to Virtual Iraq, Shilling said.

A Virtual Afghanistan is also in the works.

### **'Too real?'**

In the future, the military may build on the virtual world's potential by allowing deployed troops and their families to create online avatars. A deployed troop could walk around a virtual war zone with their family, conversing and describing day-to-day life during a deployment.

Despite its video game look, Rothbaum said virtual reality therapy has proved effective. In the past, virtual therapy was used to help patients with a fear of elevators, for example. Even though the elevator wasn't real and was digitally rendered, it still evoked anxiety, she said.

The system was used 10 years ago on Vietnam veterans at a less technologically advanced time. Rothbaum said patients reported seeing tanks and people in the simulation that weren't there. Survivors of 9/11 using virtual reality therapy have also reported seeing things that aren't in the program.

"It triggers it enough where people's memories complete the images," she said.

In Virtual Iraq, therapists say a servicemember's traumatic memories would fill out the virtual Iraqi street, helping them relive and overcome the incident.

"People tend to project things into it," Shilling said. "One of the debates we had was, can this be too real?"

In PTSD sufferers, disconnects often form between the

memory of a traumatic event and the emotions associated with it.

"The memories almost get stored without the emotions," Rothbaum said. "We have them go back in their mind's eye to the moment of trauma and have them recount it. The therapist tries to match the virtual reality to what they're describing is happening to them."

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