Research to Advance

Posttraumatic Stress Disorder

Prevention, Diagnosis, and Treatment

DISCOVERY INNOVATION ADVANCEMENT

POSTTRAUMATIC STRESS DISORDER

VA investigators are leading the way in understanding posttraumatic stress disorder and developing effective strategies for prevention, diagnosis, and treatment.

Veterans Health Administration
Research & Development
Improving Veterans' Lives www.research.va.gov

A Message to Our Veterans

VA Research—Vital Progress in the Prevention, Diagnosis, and Treatment of Posttraumatic Stress Disorder

What was termed "soldier's heart," "shell shock," or "combat fatigue" in previous wars is now recognized by doctors as a distinct medical condition known as posttraumatic stress disorder, or PTSD. Today, this disorder is taking a significant toll on our soldiers returning from Afghanistan and Iraq, occurring in 6 to 11 percent of U.S. veterans of the Afghanistan war and in 12 to 20 percent of our veterans from the Iraq war.

This condition, so often associated with combat traumas, also affects many Americans who have lived through other types of traumatic events, such as physical or sexual assaults, car crashes or other serious accidents, fires, or natural disasters. All told, about 8 percent of the U.S. population will have PTSD during their lifetime, according to VA's National Center for PTSD.

Further improving prevention, diagnosis, and treatment of PTSD is a top priority for the VA research program. VA investigators have recently conducted some of the most pivotal research in the field. Today, veterans with PTSD can benefit from many effective treatments, including psychotherapy and various medications, which were developed and refined over the years in large part thanks to VA research.

VA's PTSD studies display a tremendous diversity of approach—spanning the research continuum from bench to bedside and including lab studies and clinical research ranging from small pilot studies to large trials conducted at multiple sites. Some studies are conducted wholly by VA, while others involve partners such as the National Institutes of Health, the Department of Defense, the Centers for Disease Control and Prevention, and the Substance Abuse and Mental Health Services Administration.

Though VA's research on PTSD takes many forms, the studies share a common objective: promoting the well-being and long-term quality of life of the men and women who have served this country in uniform, whether in past conflicts or the current global war on terror.

This brochure presents examples of VA's recent accomplishments in PTSD research. These studies, it is hoped, will benefit veterans and many other Americans now and in the future and spare them from PTSD's life-disrupting symptoms and complications.

Joel Kupersmith, M.D.
Chief Research and Development Officer
Department of Veterans Affairs

Spotlight on VA Research

VA researchers dedicated to improving strategies for the prevention, diagnosis, and treatment of PTSD are looking at the condition from many different perspectives. Key research questions include:

- **What factors determine who will develop PTSD and how can we identify those factors that can be changed to reduce the risk?**
- **What determines the most effective treatment for a particular patient?**
- **Can we identify biological markers, such as proteins in the blood or certain patterns of brain activity, that are associated with PTSD?**

Answering these questions can help researchers in the development of both psychological and pharmacological approaches to PTSD prevention and treatment.

"I am grateful for the VA's PTSD study for the many changes it inspired in me. Today I am able to do things that I have not been able to do in a long time, and my life is continuing to improve."

Gulf War veteran and participant in a landmark VA clinical trial of prolonged exposure therapy involving women veterans.

Psychological Approaches and Related Therapeutic Tools

A type of cognitive behavioral therapy (CBT) called prolonged exposure therapy is currently recognized as the best evidence-based treatment available for PTSD. Other counseling approaches, including a form of CBT known as cognitive therapy, may also be effective. But further research on effective psychotherapeutic methods is needed to advance the care of veterans with PTSD.

Examples of research in this area include the following:

- **Prolonged Exposure Therapy.** In the largest study to date in women veterans with PTSD, VA researchers found prolonged exposure therapy, in which patients are helped to recall their traumas in a safe, controlled environment, to be more effective than supportive counseling that does not involve trauma recall. VA is systematically adopting this treatment approach, with a nationwide dissemination effort being spearheaded by the National Center for PTSD.
- **Virtual Reality Simulations.** Computer-generated environments are continually evolving that simulate the sights, sounds, sensations, and smells of feared situations. Therapists can use the technology as an aid to prolonged exposure therapy as they work with patients to change the negative thoughts, feelings, and behaviors linked to traumatic events.
- **Guided Imagery.** VA researchers are examining whether guided imagery—a technique involving relaxation and mental visualization—is effective for PTSD. As part of this study, women who developed PTSD as a result of sexual trauma in the military and did not improve with other therapies are being taught to use specially created audio programs, specific to PTSD, that enable them to practice guided imagery at home.

"We're so much better equipped today to help veterans suffering from PTSD than even after the first Persian Gulf War, let alone Vietnam, Korea, or World War II."
Terence M. Keane, Ph.D., associate chief of staff for research at the VA Boston Healthcare System and director of the behavioral science division of VA's National Center for PTSD.

Medication for PTSD

Medications, including the class of antidepressants known as selective serotonin reuptake inhibitors (SSRIs), may be effective for PTSD, either by themselves or in combination with psychotherapy.

Highlights of VA Research in this area include:

- **Hypertension drug found to help nightmares.** The inexpensive, well-tested generic drug prazosin, already used by millions of Americans for high blood pressure and prostate problems, has been found in pilot studies to improve sleep and lessen trauma nightmares in veterans with PTSD. A large multisite trial has been launched to follow up on these results.
- **Beta-blocker may weaken traumatic memories.** A small clinical trial is underway to test the theory that traumatic memories may be weakened or extinguished by giving the drug propranolol, a beta blocker commonly used to treat high blood pressure, as the troubling memories are reactivated under controlled conditions.
- **Drug risperidone for persistent PTSD.** VA investigators are conducting the first-ever multisite clinical trial of a medication to treat military-related chronic PTSD. This study, which will include 400 veterans, will help determine whether risperidone—a drug shown to be safe and previously tested in the treatment of PTSD in general populations—is effective in veterans with chronic PTSD who have not been helped by antidepressants.
- **Medication may boost psychotherapy outcomes.** VA investigators are studying whether the drug D-cycloserine, originally used to treat tuberculosis and more recently shown to lessen anxiety, can improve the results of psychotherapy treatment for PTSD.

Biological Factors in PTSD

VA investigators have established much of the evidence relating to the biological basis of PTSD, and they continue to learn about changes in the body that are linked to the condition.

Important examples of VA research in this area include:

- **Role of stress-related hormones.** VA researchers studied patients with war-related PTSD to see how their levels of certain stress-related hormones changed as they watched a film containing combat footage, compared with changes as they watched a neutral film about oil painting. Understanding the link between PTSD and hormone levels may help researchers develop new therapies or evaluate the effects of existing treatments.
- **Imaging brain activity.** A new VA research program will focus on the study of brain and mental health conditions, including PTSD, common among troops returning from Afghanistan and Iraq. The program features a mobile "functional MRI" machine that will be used with veterans and active-duty troops at two VA sites and a nearby military base. Brain images taken with the machine will help researchers correlate PTSD symptoms with activity in particular areas of the brain.

Risk Factors for PTSD

VA researchers also study clinical and lifestyle factors that may increase a person's risk of developing PTSD.

Highlights of VA research in this area include:

- **Testing before and after deployment.** In a major study, VA researchers and colleagues from the Department of Defense are collecting health information from military personnel prior to their deployments to Iraq. These soldiers will be reassessed upon their return and several times thereafter to identify possible changes that occurred in emotions or thinking as a result of their tours of duty and to identify possible risk factors for PTSD and other health conditions.
- **Long-term PTSD in veterans of the Vietnam war.** VA Research has launched a 20-year study of PTSD in veterans of the Vietnam War to look at the long-term course of the disorder, its long-termmedical consequences, and patterns of health care usage among these veterans. Findings from the study will help VA better understand the current and future health care needs of those who served in the Vietnam era.

Ongoing PTSD Initiatives

As research continues to shed more light on PTSD and its prevention, diagnosis, and treatment, VA is working to translate research findings into advancements in care. As part of this effort, Best Practices Guidelines for the diagnosis and treatment of PTSD, based on past study findings, have been distributed to clinicians throughout the VA health care system.

Another current effort involves the creation of a PTSD registry, in collaboration with the Department of Defense, that will help researchers learn more about the risk factors and health outcomes associated with PTSD.

VA researchers are also working to develop telehealth models of PTSD care that take advantage of communication technologies such as the telephone, Internet, videoconferencing, email, and text messaging. These initiatives are especially important for veterans with PTSD who live in rural areas.

More Information

A recent issue of VA's Journal of Rehabilitation Research & Development (Volume 45, Number 3) is devoted entirely to the discussion of scientific research on PTSD.
Full text of the articles is available online at http://www.research.va.gov/programs/jrrd/45_3.cfm.

General information about PTSD is available online from VA's National Center for Post-Traumatic Stress Disorder, at www.ncptsd.va.gov. The site includes a "Where to Get Help" page that offers resources and guidance for veterans seeking care.

R&D Communications (12)
103 South Gay Street, Ste. 517
Baltimore, MD 21202
(410) 962-1800 x223
research.publications@va.gov

Veterans Health Administration
Research & Development
Improving Veterans' Lives—www.research.va.gov

DISCOVERY — INNOVATION — ADVANCEMENT — DISCOVERY — INNOVATION — ADVANCEMENT