



This report was written for Gulf War veterans and their families to highlight what the Department of Veterans Affairs (VA) is doing with regard to research on the health problems of these veterans. The report describes the establishment of an advisory group, major population studies, and clinical research. Also, it offers a broad summary of findings to date.

While most ill Gulf War veterans who have been seen at Department of Veterans Affairs health care facilities have symptoms that can be diagnosed and effectively treated, a small number of Americans who served in Operations Desert Shield/Storm or Iraqi Freedom suffer health problems that doctors cannot easily diagnose. In 1993, to help these veterans, the President established the Persian Gulf Veterans Coordinating Board (PGVCB), co-chaired by the Secretaries of Defense, Health and Human Services, and Veterans Affairs to take necessary actions to respond to the health concerns of Gulf War veterans and their families. Through the PGVCB's Research Working Group and in coordination with other Federal departments and agencies, VA has developed a comprehensive collection of research studies to focus on the highest priority medical and scientific issues. In 2000, the PGVCB was incorporated into the Military and Veterans Health Coordinating Board (MVHCB). In 2002, the MVHCB was replaced by another interagency coordinating group, the Deployment Health Working Group.

A total of 224 federally-funded Gulf War-related research efforts costing about \$213 million have been authorized to date. As of September 30, 2001, there are 124 completed Federally-funded projects, and 100 projects still ongoing. The scope of this research is very broad, from small pilot studies to large-scale studies involving many study subjects and major research and academic medical center programs. Projects are described in detail in the annual reports to Congress. Many of these reports are available online. For the most recent information on this research, visit www.va.gov/resdev/ (look for publications).

In January 2002, Secretary of Veterans Affairs Anthony J. Principi announced the establishment of a new advisory committee to help VA review its research of the medical problems of some Gulf War veterans. The Research Advisory Committee on Gulf War Veterans' Illnesses was mandated by Public Law 105-368. The 12-member committee is chaired by James H. Binns Jr., a Vietnam veteran.

Major Epidemiological Research on the Health of Gulf War Veterans

Scientific studies show that Gulf War veterans report a variety of symptoms at about double the rate of non-deployed veterans. British, Canadian, and U.S. studies have each demonstrated increased rates for several self-reported illnesses in Gulf War veterans, including chronic fatigue, memory problems, post-traumatic stress disorder (PTSD), musculoskeletal problems, and asthma. Some of the studies include comprehensive evaluations that provide medical verification of illnesses in Gulf War and non-deployed veterans.

However, several major studies have shown that Gulf War veterans do not appear to be suffering from a unique, previously unrecognized "syndrome." In particular, the health of thousands of Gulf War veterans has been evaluated in more than five separate studies of U.S. and British service members from the Air Force, Navy, Army, Marines, and reservists. In each study, Gulf War veterans reported a similar pattern of symptoms when compared to non-deployed veterans.



The results of these studies — as well as the findings of the 1994 *The Persian Gulf Experience and Health: National Institutes of Health Technology Assessment Workshop Statement*, the 1994 Defense Science Board Task Force Report, the 1996 Presidential Advisory Committee on Gulf War Veterans' Illnesses Report, and the 1998 Senate Veterans' Affairs Committee Report — are consistent with the conclusion of the National Academy of Sciences' Institute of Medicine (IOM): “Thus far, there is insufficient evidence to classify veterans' symptoms as a new syndrome.” The IOM also concluded, “All Gulf War veterans do not experience the same array of symptoms. Thus, the nature of the symptoms suffered by many Gulf War veterans does not point to an obvious diagnosis, etiology [cause], or standard treatment.”

Researchers have also compared the rates and causes of death in a large number of Gulf War veterans and non-deployed veterans for the years 1991 to 1993. They found no increase in overall death rates among Gulf War veterans. A significantly increased rate of death due to accidents, for example, motor vehicle accidents, occurred in Gulf War veterans for the first six years after the initial War. This finding is not limited to Gulf War veterans, as it has been observed among other troops who participated in other deployments, including World War II, Korea, and Vietnam. A more recent VA study, which examined data through 1997, found that deaths from accidents in Gulf War veterans have returned to normal after this period. This mortality study is continuing indefinitely.

The rates and causes of hospitalization were compared between 697,000 Gulf War veterans and an equal number of non-deployed veterans for the years 1991 to 1994. Hospitalizations for fractures and soft-tissue injuries were higher in Gulf War veterans in military hospitals nationwide and in civilian hospitals in California. Hospitalizations for respiratory-system and digestive-system diagnoses were higher in Gulf War veterans in VA hospitals nationwide.

There have been several studies that compared the rates and types of birth defects in the children of Gulf War veterans. These studies have not produced consistent findings that indicate that a particular birth defect is more common among the children of Gulf War veterans. The results, published in 2003, of a large-scale study conducted at the Naval Health Research Center in San Diego reported greater rates of five birth defects out of 48 studied defects among infants of Gulf War veterans. In contrast, researchers on this study indicated the overall rate of birth defects was not higher among Gulf War veterans. Previous similar studies have shown no statistically significant increase in medically confirmed birth defects among children born to Gulf War veterans.

VHA's Environmental Epidemiology Service is currently validating the findings from the VA National Survey of Gulf War veterans using birth records of their children. The VA study should be completed this year. Also, research is being conducted in Great Britain to assess the risk of birth defects in their population of Gulf War veterans' offspring; the results of this study are expected to be published in late 2003.

In another study published in 2003, VA and Department of Defense (DoD) scientists completed a national treatment trial to evaluate whether aerobic exercise and chronic behavior therapy trial (CBT) could improve symptoms experienced by some Gulf War veterans. The trial treated Gulf War veterans who have at least two of three major symptoms (fatigue, musculoskeletal pain, or memory problems) that have lasted for more than 6 months. The trial took place at 18 VA and 2 DoD sites. To evaluate the benefits of these treatments, 1,092 patients were assessed. Researchers found significant improvements in physical and mental health functions, due to aerobic exercise and CBT, but no improvement in pain symptoms.

Major Ongoing Research Initiatives

Followup studies to monitor whether the health of Gulf War veterans is getting better or worse over time are a high priority. There are five studies — supported by VA, Centers for Disease Control and Prevention, DoD, or a combination of these organizations — underway. Altogether, these five studies are following approximately 18,000 veterans from various states and regions of the United States and from the United Kingdom, obtaining information on physical symptoms, psychological symptoms, and exposures during the Gulf War. Some of these studies also include comprehensive medical histories and physical examinations.

In 1996, to characterize the health status of the U.S. Gulf War veteran population more completely, VA began the “National Health Survey of Gulf War Era Veterans and Their Families,” mentioned above. For this study, health questionnaires were mailed to a random sample of 15,000 Gulf War veterans and 15,000 non-Gulf War service members of the same time period. The study compares incidence rates between the two groups for a variety of symptoms and reproductive health problems, and attempts to relate them to self-reported environmental exposures. To adequately understand the health concerns in sub-populations, VA deliberately over-sampled minority groups, including women veterans.

Results from the initial phases of this study showed that Gulf War veterans self-report significantly greater rates of virtually all symptoms, especially those involving joint and muscle, respiratory, gastrointestinal, and skin problems. This population also shows greater rates of chronic fatigue and post-traumatic stress disorder. Both Gulf War and non-Gulf War veterans report these health problems, suggesting they are not unique to either group. Deployed veterans, however, show significantly greater rates for essentially all symptoms examined. VA has completed the final phase of this study, which included a physical examination of the veterans, their spouses, and their children. Examinations were provided for about 2,000 veterans and approximately 3,000 spouses and children. The evaluations focused on the same symptoms and diseases of concern among the Gulf War veterans as during the earlier phases of the study, including birth defects among children.

A joint VA/DoD study published in September 2003, found that veterans who were deployed to the combat theater during the Gulf War were nearly twice as likely to develop amyotrophic lateral sclerosis (also known as ALS or Lou Gehrig’s Disease) as veterans not deployed to the Gulf. The incidence of ALS was especially high among deployed Air Force personnel, who were 2.7 times more likely to develop ALS than non-deployed Air Force personnel. In December 2001, based upon preliminary data available at that time, the Secretary of Veterans Affairs recognized ALS for service-connection for Gulf War veterans.

In 1999, the Centers for Disease Control and Prevention and other Department of Health and Human Services agencies held a public forum to discuss recommendations regarding the direction of future research on Gulf War veterans’ undiagnosed illnesses and their possible links with multiple environmental exposures. Research recommendations were made on the causes and manner in which various exposure agents effect the body, and the assessment, diagnosis, treatment, and prevention of exposures in future deployments. A report highlighting the recommendations for each of the four topic areas was distributed to all conference participants and placed on the Internet (www.cdc.gov/nceh/meetings/1999/gulfwar).

Clinical and Research Summary

The findings of the large and growing collection of scientific literature on the health of Gulf War veterans can be summarized as follows:

- Military personnel who served in the Gulf War have had a significantly higher (than non-deployed personnel) prevalence of reporting one or more symptoms that include fatigue, memory loss, difficulty concentrating, pains in muscles and joints, and rashes;
- The symptoms range in severity from barely detectable to completely debilitating;
- Other symptoms are noted with reduced frequency, but still may be experienced more often by deployed than non-deployed veterans;
- No single accepted diagnosis or group of diagnoses has been identified that describes and explains these symptoms;
- No single exposure, or set of exposures has been shown conclusively to cause individual or combinations of symptoms;
- No diseases included in the international disease classification systems have been shown to be more frequent in deployed or in non-deployed veterans with the exception of PTSD symptoms;
- Deaths among deployed veterans are not higher in general than deaths among non-deployed veterans (through 1997) and are much lower in comparison with similar American civilians; and
- Death due to accidents were higher among veterans that deployed to the Gulf during the first few years after the war.



Questions?

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VA Gulf War Information Helpline:

1-800-PGW-VETS (1-800-749-8387)

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