

Pesticides and Your Health – Researchers Search for Answers

Although pesticides have been widely used in the United States and elsewhere for many years with minimal safety problems, a number of scientists and non-scientists have expressed concerns about the possible long-term health consequences of exposure to these products.

The Department of Veterans Affairs (VA) and several other government departments and agencies are currently pursuing important research projects to respond to these concerns. VA is particularly interested because many Gulf War veterans may have been exposed to these chemicals during their service in the Southwest Asia theater of operations in the Gulf War. Some of these veterans have reported a wide array of illnesses that some suspect may be related to their exposure to pesticides by themselves or in combination with other health risk factors present in the Gulf War.

Gulf War Pesticide Use

Pesticides sent by the United States for use in the Gulf War can be divided into five major categories: organophosphorus (OP) pesticides, such as malathion and chlorpyrifos (Dursban®); methyl carbamate pesticides, such as carbaryl (Sevin®) and Propoxur (Baygon®); an organochlorine pesticide lindane; pyrethroid pesticides, such as permethrin; and the mosquito repellent DEET. All pesticides shipped to the Gulf region were approved by the Environmental Protection Agency (EPA) or Food and Drug Administration for unrestricted general use by individuals living in the United States at the time of the War. In general, these are the same pesticides currently available at local garden supply stores. One pesticide, chlorpyrifos, was recently restricted from general household use by the EPA based upon concerns about possible effects, particularly on children.

Although the Department of Defense (DoD) has detailed information about the type and quantity of pesticides shipped to the Gulf region for use in Operation Desert Shield/Storm, there are virtually no available records on how these pesticides were used there. It is not known how much of these pesticides were actually used and which troops used them.

According to DoD, the use of pesticides in the Gulf followed strict guidelines. They were to be used only after surveys identified the type of pests and their prevalence. Permethrin and DEET were distributed for personal protection against pests, but the distribution of all other pesticides was prohibited

unless approved by the local commander. Distribution or use for other than personal purposes was restricted to trained or certified personnel or contractors. There are reports that some veterans used other, locally obtained, unapproved pesticides. There are also reports of the misuse of dog flea collars.

The insect repellent permethrin was used to treat uniforms in the Gulf War. Some troops apparently used DEET on their skin and treated their clothing with permethrin between August and October 1990, the peak time for insect pests. From October 1990 to February 1991, the need for DEET and permethrin decreased as the population of insects went down. DEET is very commonly used as a mosquito repellent in the U.S. under various common brand names, such as OFF® including chlorpyrifos and Cutters®.

According to DoD, all other pesticides including chlorpyrifos shipped to the Gulf region were to be used only by specially trained individuals or for specific applications.

What We Know about the Health Problem Associated with Pesticides Used in the Gulf War

Exposure to large amounts of organophosphorus (OP) pesticides can cause nerve and nerve/muscle disorders. Immediate symptoms of poisoning with an OP pesticide usually appear within a few hours of exposure. These symptoms include narrowing of the pupil of the eye, headache, nausea, dizziness, anxiety, and restlessness. Other symptoms include muscle twitching, weakness, tremor, problems in coordination, vomiting, abdominal cramps, diarrhea, sweating, salivation, tearing, runny nose, and production of phlegm. In addition, life-threatening symptoms include unconsciousness, convulsions, and depression of breathing function.

The Department of Defense reported no cases of OP poisoning symptoms in U.S. troops during the Gulf War. However, individuals who survive severe OP poisoning sometime show subtle neuropsychological effects that can be measured from months to years following recovery from initial symptoms. Although more serious delayed neurologic effects have been seen in a few people who survived near-lethal exposure to certain OP pesticides, none of those shipped to the Gulf War region is commonly associated with these more serious long-term effects.

Methyl carbamate pesticides can cause similar immediate poisoning effects. Poisoning with methyl carbamates tends to be much shorter duration compared with OP pesticides.



A few people who have used very large amounts of lindane on their skin have had blood disorders and seizures. Under conditions of extremely high exposure, lindane can cause liver and kidney disease. Long-term exposure to lindane by some laboratory animals have been reported to cause liver cancer. Some pregnant laboratory animals fed very high doses of lindane have produced offspring with birth defects.

Clinical signs of immediate permethrin poisoning following enormous oral doses become evident within two hours. These signs include coordination problems, hyperactivity, and convulsions, followed by collapse, paralysis, and death. There is no evidence of long-term health problems from permethrin poisoning in humans.

The common mosquito repellent DEET is used by at least 50 million Americans annually to repel insects. There are some reports of tingling, mild irritation and skin peeling following repeated skin application. In adult humans, ingestion of enormous doses of DEET has been associated with **immediate** toxic effects, but no long-term health effects have been documented.

Although all pesticide can be toxic to humans if they take in large doses, the pesticides sent to the Gulf were selected as having particularly low toxicity to humans. In fact, they were considered safe enough for general unrestricted use within the U.S.

What Independent Scientific Review Committees Have Concluded

Various expert groups have examined the possible effects of pesticides on the health of Gulf War veterans.

In its final report, dated December 1996, the Presidential Advisory Committee (PAC) on Gulf War Veterans' Illnesses states that "it is unlikely that health effects and symptoms reported today by Gulf War veterans are the result of exposure to pesticides during the Gulf War. Lindane is an animal liver carcinogen, but it is too early to see an elevated liver cancer rate in Gulf War veterans." The PAC found that the current scientific evidence does not support a causal link between the symptoms and illnesses reported today by Gulf War veterans and exposure while in the Gulf to pesticides.

In its 1996 report, entitled *Health Consequences of Service During the Persian Gulf War: Recommendations for Research and Information Systems*, the non-governmental organization National Academy of Sciences' Institute of Medicine (IOM) indicated that "in general, it appears that the average personal usage of pesticides available in the PGW theater of operations was low and unlikely to be associated with the induction of chronic disease."

The Senate Special Investigation Unit (SIU) in its 1998 report noted that, with regard to pesticide exposure, "some troops reportedly developed rashes as a consequence of their use. However, no other acute health effects have been linked

to the use of pesticides during the Gulf War. The SIU found most troops were likely exposed to some level of a variety of these chemicals although the amount or level of exposure is not known."

What We Don't Know — Combination of Pesticides and Interaction with Other Possible Exposures or Risk Factors

Virtually all of the independent expert groups cited earlier indicated that more research on the health effects of pesticide exposure was warranted. Some researchers have suggested that a combination of exposures may explain health problems currently experienced by some Gulf War veterans. Studies giving cockroaches and chickens very large doses of a combination of pesticides and other material have suggested this possibility. It is unclear whether these combinations or interactive effects may be applicable to humans who generally have much smaller exposure to these materials. Ongoing federally-funded research efforts should help clarify this matter.

The federal government is currently pursuing a variety of research projects examining this issue, at a cost of more than \$5 million. Some titles of federal research projects include *Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET*; *Toxic Interactions of Prophylactic Drugs and Pesticides*; *Evaluations of Immunotoxicity due to Concurrent Exposure to DEET, Pyridostigmine, and JP-8 Jet Fuel*; and *Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War*.

Most of these projects are still ongoing. VA expects that these investigations will provide answers to many, if not all, of the questions that have been raised by Gulf War veterans and their families regarding the possible long-term health effects of exposure to pesticides used in the Gulf War, including the effects of their interaction with other possible health risk factors.

For this article, the editor contacted several scientists pursuing research efforts relative to the pesticides used in the Gulf War. Here is some of what we learned:

Drs. Deborah Keil, Margie Peden-Adams, and Gary Gilkeson at the Medical University of South Carolina and the Ralph H. Johnson VA Medical Center are investigating the immune effects of combined exposures to DEET, pyridostigmine, JP8 fuel, and stress on the immune systems. Initial experiments focused on the effects of the individual agents. Exposure to DEET alone had only minor effects on antibody production. Experiments of combined exposures on immune function, resistance to infection, resistance to cancer, and development of autoimmune disease are ongoing.

Dr. Jim E. Riviere of the North Carolina State University in Raleigh noted that his initial work on the dermal absorption of permethrin, either alone or in combination with DEET, suggests that there is minimal systemic absorption through skin. Dr. Riviere cautioned that while this is "good news," he and his associates have not yet tested the combinations of other chemicals and agents." He added that it would be "premature to draw broad conclusions."

Toxicologist Dr. Mark A. Brown, Director, VA's Environmental Agents Service, noting that the pesticides used in the Gulf War have been used extensively for many years in the U.S. and other countries without significant health problems, speculated that health risk factors other than pesticide exposure were likely responsible for the undiagnosed maladies that Gulf War veterans are currently experiencing. Dr. Brown added, "Several years ago, I actually went to my local garden supply store to check – and all the pesticides used by the DoD in the Gulf War were right there on the shelf."

What a Concerned Gulf War Veteran Should Do

There are no tests available today that could tell if a person was exposed to any pesticide during the Gulf War. However, Gulf War veterans with health concerns are encouraged to contact the nearest VA medical center for a Gulf War Registry health examination. The telephone number of the medical center can be found in local telephone directories under the Department of Veterans Affairs in the "U.S. Government" listings.

Veterans with service-related disabilities may wish to file a claim for disability compensation. A Veterans Benefits Counselor (VBC) at the nearest VA regional office or medical center can provide the application and any needed assistance. The national toll-free telephone number to reach a VBC is **1-800-827-1000**. Veterans service organizations also may be helpful to Gulf War veterans seeking benefits from VA.

Benefit Information

The following guide to benefits was prepared for the "Gulf War Review" by officials in the Compensation and Pension Service, Veterans Benefits Administration, Department of Veterans Affairs (VA) Central Office, Washington, DC. The next issue of the "Review" will include information about appealing a VA claim decision. For additional information call toll-free: 1-800-827-1000.

Am I a Gulf War Veteran?

The U.S. Department of Veterans Affairs (VA) considers a veteran to be a "Gulf War veteran" if they served on active military, naval, or air service in the Southwest Asia theater of operations during the Gulf War. The Southwest Asia theater of operations includes Iraq, Kuwait, Saudi Arabia, the neutral zone between Iraq and Saudi Arabia, Bahrain, Qatar, the United Arab Emirates, Oman, the Gulf of Aden, the Gulf of Oman, the Persian Gulf, the Arabian Sea, the Red Sea, and the airspace above these locations. The official dates of the Gulf War period are from August 2, 1990, through a date to be set by law or by Presidential Proclamation.

What Kind of Benefits Can I Get ?

VA pays disability compensation to veterans with injuries or diseases that began in, or were aggravated by, their military service. These are called "service-connected" disabilities. VA has several pamphlets describing VA benefits. They are

available on the Internet at: www.va.gov/publ/direc/eds/edspamph.htm. If you do not have Internet access at home, you can get free access at most public libraries. Publications are also available at your VA Regional Office or by calling these offices at **1-800-827-1000**.

How Much Money Will I Get ?

These monthly payment rates (for the year 2000) are based on the veteran's combined rating for his or her service-connected disabilities. Additional amounts are paid to certain veterans with severe disabilities ("special monthly compensation") and certain veterans with dependents. A veteran with a 10% rating receives \$98 a month; a veteran with a 50% rating gets \$589; and a veteran with a 90% rating is paid \$1224 each month.

10%	20%	30%	40%	50%
\$ 98	\$188	\$288	\$413	\$589

60%	70%	80%	90%	100%
\$743	\$937	\$1087	\$1224	\$2036

What Evidence Do I Need?

To show that a veteran's disability is service-connected there must be:

- satisfactory medical evidence of a current disability;
- satisfactory evidence that a disease or injury began or worsened during military service; and
- satisfactory medical evidence that the in-service disease or injury caused or contributed to the current disability.

Gulf War veterans can be service-connected under the above rules or under special rules established to assist Gulf War veterans. Under the special rules, Gulf War veterans can be service-connected if they showed "objective indications of chronic disability resulting from an illness or combination of illnesses manifested by one or more signs or symptoms such as those listed below. The disability must have appeared either during the veteran's service in the Southwest Asia theater of operations or to a degree of 10 percent or more not later than December 31, 2001. Also, the disability must be one that cannot be attributed to any known clinical diagnosis. Some examples of the signs or symptoms for which service-connection may be granted are:

- Fatigue
- Signs or symptoms involving skin
- Headache
- Muscle pain
- Joint pain
- Neurologic signs or symptoms
- Neuropsychological signs or symptoms
- Signs or symptoms involving the respiratory system (upper or lower)
- Sleep disturbances
- Gastrointestinal signs or symptoms

- Cardiovascular signs or symptoms
- Abnormal weight loss
- Menstrual disorders.

Under these rules, VA service-connection **cannot** be granted if there is evidence of one of the following:

- an undiagnosed illness was not incurred during active military, naval, or air service in the Southwest Asia theater of operations during the Gulf War; or
- an undiagnosed illness was caused by a supervening condition or event that occurred between the veteran's most recent departure from active duty in the Southwest Asia theater of operations during the Gulf War and the onset of the illness; or
- an undiagnosed illness is the result of the veteran's own willful misconduct or the abuse of alcohol or drugs.

What Benefits Can My Family Get?

Survivor Benefits

Survivors of veterans (including spouses, children and dependent parents) who died as the result of a service-connected disability may be eligible for monthly Dependency and Indemnity Compensation benefits. These survivors may also be eligible for education, home loan and medical care benefits.

How Can I Apply for VA Benefits?

To apply for benefits, send the VA Regional Office a letter stating that you have a specific health problem and that you claim it is due to your service during the Gulf War. This is called an informal claim and will set the effective date for your benefits payments, if your claim is granted. The VA Regional Office will then send you an application form, which you must fill out and return. To get the address of your VA Regional Office, call **1-800-827-1000**.

Can I Get a Representative to Be My Advocate?

You may get a representative to help you present your claim to VA. Most veterans service organizations and state and county veterans service agencies offer free representation. A listing of veterans service organizations is available on the Internet at: www.va.gov/vso/index.htm. A listing of state veterans agencies is available on the Internet at: www.va.gov/partners/stateoffice/index.htm.

Major Gulf War Research Efforts Underway

The Department of Veterans Affairs (VA) has drafted and will soon release the *Annual Report to Congress – 1999—Research on Gulf War Veterans' Illnesses*, which will describe in detail 159 federally-sponsored projects related to Gulf War veterans' illnesses. The scope of federal research is broad, from small pilot studies to large-scale epidemiology studies involving large study populations and major research and academic medical center programs using significantly large amounts of appropriated research funds. According to the

draft *Annual Report*, there has been cumulative expenditures of more than \$145 million for this research, Fiscal Years 1994-2000.

On August 31, 1993, President Clinton asked the Secretary of Veterans Affairs to coordinate research funded by the Executive Branch of the Federal Government into the health consequence of Gulf War service. VA carries out its research coordinating role through the auspices of the Research Working Group of the Persian Gulf Veterans Coordinating Board, chaired jointly by the Secretaries of Defense, Health and Human Services, and Veterans Affairs.

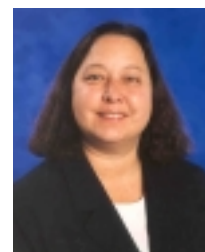
VA is required to submit an annual report to Congress on the results, status, and priorities for each year. The soon to be released document is the sixth report on such research. The reports highlights and summarizes research progress since the last annual report by analyzing the Federal Government's research portfolio on Gulf War veterans' illnesses, highlighting significant research and research-related events and milestones, discussing the management of Federal Gulf War veterans' illnesses research programs, including research oversight, peer-review and coordination, and articulating priorities for future research.

The report also includes important and relevant background information not strictly research-related to help the reader better understand the overall context related to Gulf War veterans' research issues.

The report will be available on the at <http://vaww.va.gov/resdev/pgprpt99.htm>. A very limited supply may also be available from the Environmental Agents Service (131), Attn: Annual Report, VA Central Office, 810 Vermont Avenue, N.W., Washington, DC 20420.

Kelley Brix Joins VA's Office of Research and Development

Kelley Ann Brix, M.D., is the new Assistant Chief Research and Development Officer. She is responsible for the management of environmental programs, including the federal research program on illnesses in Gulf War veterans. This consists of more than 150 studies funded by VA, DoD and HHS. In addition, she serves as VA liaison with DoD scientists on medical research issues of mutual interest. She provides the link for VA environmental research with individual investigators, other VA divisions, other federal agencies, and Congress.



Dr. Brix joined the Office of Research and Development on January 31, 2000, after a 19-year career as physician, investigator, and public health officer. Most recently, she served for 3 years as Medical Director for SRA International, Inc., located in Falls Church, Virginia. During these 3 years, she also served as Physician Consultant for the DoD Office of the Special Assistant for Gulf War Illnesses. There she

provided consultation to the Under Secretary of the U.S. Army and to technical staff on clinical medicine, occupational and environmental health, and health education strategies regarding environmental exposures among Gulf War veterans and relevant ongoing health research.

Dr. Brix formerly served as a senior health research and policy analyst on the Presidential Advisory Committee on Gulf War Veterans' Illnesses in Washington, DC. Her responsibilities included an evaluation of the federal response to health concerns related to Gulf War service and preparation of a report for President Clinton with recommended improvements for Gulf War veterans' research and health care.

Dr. Brix earned her medical degree in 1978 at the University of Michigan School of Medicine. She also holds a Master of Public Health degree in environmental and occupational health sciences. Among Dr. Brix's professional positions were assistant professor of occupational medicine and instructor of internal medicine at the University of Michigan. She was also an assistant professor of epidemiology at the State University of New York in Albany, New York. She served as a public health physician at the New York State Department of Public Health for eight years, where she was the Project Director of the long-term follow-up of the health of nearly 10,000 residents of the Love Canal neighborhood. She also worked as senior program officer at the National Academy of Sciences, where she directed studies on illnesses in Gulf War veterans and on the health effects of exposure to Agent Orange in Vietnam veterans.

Dr. Brix is a member of numerous professional organizations, including the American College of Preventive Medicine, the American College of Occupational and Environmental Medicine, and the American Public Health Association. She was born in Tulsa, Oklahoma and currently resides in Arlington, Virginia.

Depleted Uranium Health Effects Updated

The September 1999 issue of the *Gulf War Review* included a front page article regarding the Department of Veterans Affairs (VA) program to respond to the needs of Gulf War veterans regarding the possible long-term health consequences of exposure to depleted uranium (DU).

Early this year, the scientific journal *Environmental Research* published a research article by scientists and physicians who are working on the VA depleted uranium program. The authors wrote, in part, that a small group of Gulf War veterans have retained fragments of depleted uranium shrapnel. The long-term health consequences of which are unclear, but subtle effects have been detected in these patients. The investigators evaluated the clinical health effects of DU exposure in Gulf War veterans comparing them to Gulf War veterans who were not exposed to DU fragments.

Medical history was taken and follow-up medical examinations were performed on 29 exposed and 38

nonexposed Gulf War veterans. The authors found persistent elevated urinary uranium seven years after first exposure. Adverse health effects in the kidney, a presumed target organ of uranium were not present. However, other effects were observed. There was a statistical relationship between urine uranium levels and lower performance on computerized tests assessing performance efficiency. Furthermore, there were small effects seen in prolactin levels, which is a hormone important to reproduction. Again, the actual health impact of these effects are not clear.

About the Review...

The "Gulf War Review" is written by VA's Environmental Agents Service (EAS). The "Review" is published to provide information about the concerns of Gulf War veterans, their families, and others interested in possible long-term health consequences of military service in the Gulf War. The "Review" describes actions by VA and others to respond to these concerns.

The most recent, prior to this, issue of the newsletter is dated March 2000. Additional issues will be prepared when warranted by significant developments. EAS anticipates publication of the "Review" three or four times annually. This issue is the second for 2000. It was completed in May 2000 and does not include developments that occurred after that time.

Comments or questions concerning the content of the "Review" are encouraged. Suggestions and ideas for future issues of the newsletter should be sent to Donald J. Rosenblum, Deputy Director, Environmental Agents Service (131), VA Central Office, 810 Vermont Avenue, N.W., Washington, DC 20420.

Requests for additional copies of this and/or future issues should also be sent to Mr. Rosenblum. A limited supply of the prior issues is available. Please specify the quantity and issue date requested.

VA facilities should order additional copies from the VA Service and Distribution Center. Each station has a Publications Control Officer (PCO). VA facilities should place any orders through their PCO using the LOG system.

Questions about the Registry examination should be directed to the Registry Coordinator or Registry Physician at the nearest VA medical facility. The telephone number can be found in the local telephone directory under the "U.S. Government" listings. Assistance is also available from the toll-free VA Gulf War Helpline: **1-800-749-8387**.

IOM Report Expected in August 2000

In late August 2000 (or shortly thereafter), the National Academy of Sciences' Institute of Medicine (IOM) should release the results of a 27-month (June 12, 1998-August 31, 2000) independent and comprehensive review and analysis of scientific and medical literature regarding adverse health

effects associated with exposure experienced during the Gulf War. VA will use the report to help establish health care and compensation policies on behalf of Gulf War veterans.

The IOM review and analysis is being conducted under a contract with the Department of Veterans Affairs (VA). The review includes assessment of biological plausibility that exposures, or synergistic effects of combinations of exposures, are associated with illnesses experienced by Gulf War veterans. IOM is expected to make recommendations for additional scientific studies to resolve areas of continued scientific uncertainty related to the health consequences of Gulf War service.

Exposures under consideration in this initial review include depleted uranium, chemical warfare agents, vaccines, and pyridostigmine bromide. Upon completion of this report, VA expects the IOM to review the health effects of other important risk factors (for example, pesticides, insecticides, biological warfare agents, heat stress, solvents, paints, fuels, smoke from oil-well fires, and sand) for Gulf War veterans.

The IOM established a committee, chaired by Harold Sox, M.D, to conduct the review. Dr. Sox directs the Robert Wood Johnson Generalist Physician Initiative at Dartmouth. He currently serves as President of the American College of Physicians-American Society of Internal Medicine.

Information about the Committee's activities should be posted on the NAS web site (<http://www.nas.edu>) including a brief description of the project, as well as short biographies of committee members, meeting notices, and other pertinent information.

In 1970, The National Academy of Sciences chartered the IOM to enlist distinguished members of appropriate professions in the examination of policy matters pertaining to public health. In this, the IOM acts under both the Academy's 1863 congressional charter responsibility to be an advisor to the Federal government and its own initiative in identifying issues of medical care, research, and education.

The Presidential Advisory Committee on Gulf War Veterans' Illnesses first recommended the literature review. The General Accounting Office and the Senate's Special Investigation Unit on Gulf War Illnesses later recommended this project. In October 1998 and November 1998, Public Laws 105-277 and 105-368 provided a legislative mandate for the review.

Women Veterans Coordinators Assist Women Veterans

There are Women Veterans Coordinators (WVC) at every Department of Veterans Affairs (VA) health care facility to help women veterans to get needed services and answers to questions or concerns they may have. The position of WVC, established by law in 1982, includes the following:

- Identifying services available to women veterans and ensuring equal access to care;

- Addressing privacy and safety issues;
- Assisting women veterans with eligibility issues;
- Providing education and sensitivity training to VA staff regarding the unique needs of women;
- Working with administration to identify areas for improvement;
- Publicizing the Women Veterans Health Programs and benefits through speaking engagements, written publications and interviews;
- Networking with Veteran Service Organizations, local DOD programs, and Regional Offices;
- Developing local policies and procedures related to the Women Veterans Health Programs;
- Ensuring the availability of special programs including Sexual Trauma Counseling; and
- Providing clinical services to women veterans in women's health clinics/gynecology clinics.

Women Veterans Coordinators are advocates for women veterans and can assist with a variety of issues and concerns, including those that relate to health problems experienced by women who served in the Gulf War. Any woman veteran wanting information about VA services or programs, or who has concerns about care received at a VA facility, should contact the nearest VA facility and ask to speak to the Women Veterans Coordinator.

This article was prepared by Sherri Bauch, MSW, Deputy Field Director, Women Veterans Health Program, VA Puget Sound Health Care System.

Has Your Address Recently Changed? Are You Receiving More Than One Copy of the Review?

If you have recently moved, please use this form to update our mailing list. Send the completed form to the Gulf War Review, Austin Automation Center (200/397A), 1615 Woodward Street, Austin, TX 78772-0001. Thank you.

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If you are receiving more than one copy of the newsletter, please let us know. Write to the address above. Please provide your name, address, and social security number. Thank you.

Where to Get Help

Active duty military personnel with questions or concerns about their service in the Persian Gulf region - contact your commanding officer or call the Department of Defense (DoD) Gulf War Veterans' Hotline (1-800-796-9699) for an examination.

Gulf War veterans with concerns about their health - contact the nearest VA medical center. The telephone number can be found in the local telephone directory under Department of Veterans Affairs in the "U.S. Government" listings. A Gulf War Registry examination will be offered. Treatment will be provided to eligible veterans. The VA Gulf War Information Helpline can also provide the latest information and assistance. The toll-free telephone number is 1-800-PGW-VETS (1-800-749-8387).

Gulf War veterans in need of **marital/family counseling** - contact the nearest VA medical center or VA vet center. For additional information, call the Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387).

Gulf War veterans seeking **disability compensation** for illnesses incurred in or aggravated by military service - contact a Veterans Benefits Counselor at the nearest VA regional office or health care facility at 1-800-827-1000, or call the VA Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387).

Gulf War veterans seeking participation for their **spouses or children** in the VA-funded health examination program for spouses and children - call the VA Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387). Veterans interested in the alternative self-funded examination for spouses or children - contact the Gulf War Registry Coordinator at the nearest VA medical center for forms and information.

Gulf War veterans interested in learning about the wide range of **benefit programs** administered by VA - contact a Veterans Benefits Counselor at the nearest VA regional office or health care facility at 1-800-827-1000, or call the VA Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387).

Anyone with first-hand information about "**incidents**" that occurred in the Southwest Asia theater of operations during the Gulf War that may be related to health problems experienced by military personnel who served in the War - call the DoD "Incidents" Hotline at 1-800-472-6719.

Veterans who have been diagnosed with a motor neuron disease (including **amyotrophic lateral sclerosis** or **Lou Gehrig's disease**) and who were on active duty between August 2, 1990 and July 31, 1991, regardless of whether they actually served in the Gulf War theater of operations (or family/friends of veterans who are deceased or otherwise unable to contact VA) - call 1-877-DIAL-ALS (1-877-342-5257) to participate in a national survey.

For additional information about VA's program initiatives, see VA's Gulf War **veterans' illnesses** home page at <http://www.va.gov/gulf.htm>.

Gulf War veterans who **encounter difficulties** at a VA medical facility can contact the "**patient advocate**" at that facility for assistance in resolving the problem.

Representatives of **veterans service organizations**, including the American Legion (1-800-433-3318), Veterans of Foreign Wars of the United States (1-800-VFW-1899), Disabled American Veterans (1-877-426-2838), etc., may also be very helpful to Gulf War veterans, especially veterans who are seeking disability compensation.

Updated Questions & Answers Brochure, Research Fact Sheet Available in Spanish

In March 2000, the Department of Veterans Affairs (VA) published a Spanish language version of an eight-page questions-and-answers brochure and a two-page research report on Gulf War veterans illnesses. The English language version of these two publications were released September 1999.

The English version of these publications were written by officials in the VA Environmental Agents Service in VA national headquarters. A contractor translated the publication into Spanish to assist readers who are more comfortable with that language. The March 2000 publications revise, update and replace similar Spanish publications, dated June 1998.

The revised publications are being widely distributed to VA sites throughout the Nation as well as non-VA locations.

Individuals who wish to obtain both or either of the English or Spanish versions can contact the nearest VA facility or the Environmental Agents Service (131), VA Central Office, 810 Vermont Avenue, N.W., Washington, DC 20420.

The brochure answers 18 questions, including the following: Is there a "Persian Gulf Syndrome" or "Gulf War Syndrome"? What symptoms are Gulf War veterans reporting? What is VA doing to help veterans of Desert Shield and Desert Storm? What is the Gulf War Registry health examination program? How can a veteran participate?

The research report describes major research initiatives (including two new major studies), the roles of the Persian Gulf Veterans Coordinating Board and the National Academy of Sciences' Institute of Medicine, VA environmental hazards research centers, two large-scale Gulf War-related studies undertaken by VA Environmental Epidemiology Service, and important research findings to date.

Registry Statistics

Number of Initial (1st time) Registry Health Examinations Since the Beginning of the Program (as of April 25, 2000): 78,864

Number of Initial Registry Health Examination most recent month (as of April 25, 2000): 320

Number of Veterans Admitted to VA Gulf War Referral Centers — Birmingham, AL; Houston, TX; West Los Angeles, CA; Washington, DC – Since the Beginning of the Program (as of April 30, 2000): 662

Most active VA medical centers – Number of Registry Health Examinations Since the Beginning of the Program (as of April 25, 2000):

Fayetteville, NC.....	2,121
Decatur/Atlanta, GA.....	1,908
Central Texas Health Care System (Temple,Waco).....	1,894
San Juan, PR.....	1,804
Denver, CO.....	1,765
Birmingham/Huntsville, AL.....	1,659
Tampa/Orlando/Pt. Ritchie, FL.....	1,460
Oklahoma City, OK.....	1,437
Nashville/Knoxville, TN.....	1,362
Houston, TX.....	1,253

Gulf War Review
*Information for Veterans Who
Served in Desert Storm*
June 2000

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