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## **B. New Initiatives**

### **Request for Applications on the Etiology, Pathogenesis, and Treatment of ALS (RFA-NS-04-003)**

On August 8, 2003 a joint Request for Applications (RFA-NS-04-003) was issued by the Department of Veteran's Affairs (VA), National Institute of Neurological Disorders and Stroke (NINDS), and The Amyotrophic Lateral Sclerosis Association (ALSA) for research proposals that address the etiology, pathogenesis, and treatment of amyotrophic lateral sclerosis. Sixty-nine proposals were received by the submission deadline of October 22, 2003, and reviewed on January 22, 2004. Of the eight projects selected for funding, one (VA-101) was determined to be directly relevant to the illnesses affecting Gulf War veterans.

### **VA Request for Applications on Gulf War Veterans Research**

In April 2004, the VA Office of Research and Development issued a Request for Applications (RFA) on Gulf War Veterans Research. Forty-five proposals were received by the application deadline of June 25, 2004. These proposals were reviewed on September 14-15, 2004. Since they did not receive funds until October 1, 2004 (the first quarter of FY 2005), proposals selected for funding from this RFA will be included in the Annual Report to Congress on Federally Sponsored Research on Gulf War Veterans' Illnesses for 2005.

## **C. Ongoing Initiatives**

### **VA Program Announcement on Deployment Health Research**

On October 18, 2002, the VA Office of Research and Development issued a Program Announcement on Deployment Health Research in recognition of the high priority for development of improved methods of diagnosis, treatment, and prevention of illnesses related to hazardous deployments, such as the Gulf War, Bosnia/Kosovo, Afghanistan, and the current war in Iraq. The Program Announcement recognized five major research priorities:

- Long-term health impacts of hazardous deployments
- Health impacts of specific military occupational and environmental exposures
- Improvements in evaluation and diagnosis of deployment-related illnesses
- Improvements in treatment of deployment related illnesses
- Health risk communication for veterans and health care providers

Funding of one new project (VA-091) in FY 2004 resulted from this Program Announcement. The complete Program Announcement can be accessed at the following URL:

[www.va.gov/resdev/fr/ProgramAnnouncementDeploymentHealthIssues.pdf](http://www.va.gov/resdev/fr/ProgramAnnouncementDeploymentHealthIssues.pdf)









































































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## Environmental Toxicology

### Epidemiology

Research Focus	Project Focus	Project	Project Title
Chemical Weapons	Exposure; Symptoms;	DoD-116A	Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground (Pilot Study) (See also VA-63A; formerly VA/DoD-2DA)
Chemical Weapons	Exposure; Symptoms;	VA-063A	Follow-Up Investigation of troops exposed to nerve agents at Aberdeen Proving Ground (Pilot Study) (See also DoD-116A; formerly VA/DoD-2VA/2DA)
Chemical Weapons; Symptoms and General Health	Exposure; Symptoms;	DoD-069	Five Year Follow-Up of Army Personnel Exposed to Chemical Warfare Agents
Chemical Weapons; Symptoms and General Health	Exposure; Symptoms;	DoD-093	Troops Exposed to Nerve Agents at Aberdeen Proving Ground: Follow-Up
Pyridostigmine Bromide	Exposure	DoD-017	Retrospective Studies Involving Military Use of Pyridostigmine as a Pretreatment for Nerve Agent Poisoning
Pyridostigmine Bromide	Prevention; Exposure;	DoD-021	Study of Variability In Pyridostigmine Inhibition of Blood Cholinesterases in Healthy Adults and Individuals With Symptoms Following Participation in Operation Desert Storm
Symptoms and General Health	Symptoms	DoD-013	Effects of Persian Gulf War Service on Military Working Dogs
Symptoms and General Health	Exposure; Symptoms;	DoD-094	Combined Analysis of the VA and DoD Gulf War Clinical Registries: A Study of Clinical Findings from Systematic Medical Examinations of 100,000 U.S. Gulf War Veterans
Symptoms and General Health	Exposure; Symptoms;	DoD-099	DoD-wide Medical Surveillance for Potential Long-Term Adverse Events associated with Anthrax Immunization in Active Duty Service Members, Proposal 1: Hospitalizations
Symptoms and General Health	Exposure; Symptoms;	VA-003	Use of Roster of Veterans Who Served in Persian Gulf Area
Symptoms and General Health	Exposure; Symptoms;	VA-006	Core Program: Portland Environmental Hazards Research Center: Environment, Veterans Health and the Gulf War Syndrome. Core Project for Clinical and Epidemiology

## Environmental Toxicology

### Mechanistic

Research Focus	Project Focus	Project	Project Title
	Exposure; Interactions;	DoD-103	Human Metabolism and Interactions of Deployment-related Chemicals

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## Environmental Toxicology

### Mechanistic

Research Focus	Project Focus	Project	Project Title
	Exposure; Prevention;	HHS-003	Biomarkers of Susceptibility and Polycyclic Aromatic Hydrocarbon (PAH) Exposure in Urine and Blood Cell DNA from U.S. Army Soldiers Exposed to Kuwaiti Oil Well Fires
	Exposure; Prevention;	VA-004E	The Aromatic Hydrocarbon Receptor (AhR) as a Biomarker of Susceptibility
Brain and Nervous System Function; Chemical Weapons	Exposure; Symptoms;	DoD-022	Chronic Organophosphorus Exposure and Cognition
Brain and Nervous System Function; Immune Function and Infectious	Exposure; Interactions;	DoD-037	Neurobehavioral and Immunological Toxicity of Pyridostigmine, Permethrin, and DEET in Male and Female Rats
Brain and Nervous System Function;	Exposure	DoD-126	Blood-Brain Barrier Transport of Uranium
Brain and Nervous System Function;	Exposure; Symptoms;	DoD-128	Multifactorial Assessment of Depleted Uranium Neurotoxicity
Brain and Nervous System Function;	Exposure; Symptoms;	DoD-129	Inhalation of Uranium Oxide Aerosol: CNS Deposition, Neurotoxicity, and Role in Gulf War Illness
Brain and Nervous System Function; Symptoms and General Health	Exposure; Symptoms;	DoD-007A	Health Risk Assessment of Embedded Depleted Uranium: Behavior, Physiology, Histology, and Biokinetic Modeling
Chemical Weapons	Exposure; Diagnosis;	DoD-136	A Mechanism-Based, Molecular Fingerprint Strategy for Detecting Biomarkers of Organophosphate Exposure
Chemical Weapons; Brain and Nervous System Function	Exposure	VA-006D	DNA Damage from Chemical Agents and Its Repair (Project IV)
Chemical Weapons; Brain and Nervous System Function	Exposure; Diagnosis;	DoD-135	Biochemical Markers for Exposure to Low Doses of Organophosphorous Exposure
Chemical Weapons; Brain and Nervous System Function	Prevention; Exposure;	DoD-051	Transgenic Engineering of Cholinesterases: Tools for Exploring Cholinergic Responses
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-054	Assessment of Subchronic Neurobehavioral and Neuropathologic Effects in Rats Following Low-Level Sarin
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-055	Low-Level Exposure to GB Vapor in Air: Diagnosis/Dosimetry, Lowest Observable Effect Levels, Performance-Incapacitation, and Possible Delayed Effects
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-056	Low-Level Sarin Neurotoxicity and Its Modulation by Pyridostigmine
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-061	Neurophysiologic and Neuropathologic Effects in Monkeys of Low Level Exposures to Sarin, Pyridostigmine, Pesticides, and Botulinum Toxoid
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-062	Sarin and Pyridostigmine Interaction under Physical Stress: Neurotoxic Effects in Mice

### Environmental Toxicology

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## Mechanistic

Research Focus	Project Focus	Project	Project Title
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-072	Long-term Effects of Subchronic Exposure to Sarin, Alone and with Stress or Other Chemicals
Chemical Weapons; Brain and Nervous System Function	Exposure; Interactions;	DoD-113	Interactions of Subsymptomatic Doses of Sarin with Pyridostigmine: Neurochemical, Behavioral, and Physiological Effects
Chemical Weapons; Brain and Nervous System Function	Exposure; Symptoms;	DoD-053	Long-Term Effects of Subclinical Exposures to Sarin
Chemical Weapons; Brain and Nervous System Function	Exposure; Symptoms;	DoD-152	Characterization of Intracellular Signaling Pathways Activated by Nerve Agents
Immune Function and Infectious Diseases	Exposure; Interactions;	HHS-007	Immunotoxicity of Dermal Permethrin and Cis-Urocanic Acid
Immune Function and Infectious Diseases	Exposure	DoD-123	Immunotoxicity of Depleted Uranium and Heavy Metal Tungsten Alloys
Immune Function and Infectious Diseases; Pyridostigmine Bromide	Exposure; Interactions;	DoD-077	Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War
Immune Function and Infectious Diseases; Symptoms and General Health	Exposure; Symptoms;	DoD-130	Carcinogenicity and Immunotoxicity of Embedded Depleted Uranium and Heavy-Metal Tungsten Alloys in Rodents
Pyridostigmine Bromide	Prevention; Exposure;	DoD-033	Effects of Pyridostigmine in Flinders Line Rats Differing in Cholinergic Sensitivity
Pyridostigmine Bromide	Exposure; Interactions;	DoD-010	Pyridostigmine Synergistic Toxicity Study
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	DoD-002	Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	DoD-075	Toxic Interactions of Prophylactic Drugs and Pesticides
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	DoD-107	Stress, Organophosphates and Blood Brain Barrier Integrity
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	DoD-078	Experimental Models of Gulf War Syndrome
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	DoD-079	Time Course of Stress-induced Impairment of Blood Brain Barrier
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	DoD-139	Assessment of the Role of Stress-Activated Kinase in the Pathogenesis of Gulf War Illnesses
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	VA-006C	Neurotoxicity of Environmental Pollutants and Warfare Agents (Project III)

## Environmental Toxicology

## Mechanistic

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<b>Research Focus</b>	<b>Project Focus</b>	<b>Project</b>	<b>Project Title</b>
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Interactions;	VA-080	Neurochemical and Neurobehavioral Impact of Pyridostigmine Bromide Treatment and Stress
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Symptoms;	DoD-059	Pyridostigmine-induced Neurodegeneration: Role of neuronal Apoptosis
Pyridostigmine Bromide; Brain and Nervous System Function	Exposure; Symptoms;	VA-049	Sensitivity to Pyridostigmine Bromide: Persistent Neural Dysfunction
Pyridostigmine Bromide; Symptoms and General Health	Exposure; Interactions;	VA-005D	Effects of Genetics and Stress on Responses to Environmental Toxins
Reproductive Health	Exposure; Symptoms;	DoD-121	Evaluation of the Health Risks of Embedded Depleted Uranium Shrapnel During Pregnancy and Offspring
Symptoms and General Health	Exposure	VA-065	San Antonio Environmental Hazards Research Center
Symptoms and General Health	Exposure	VA-065A	Does a variant of the human SOD2 gene increase sensitivity to hazards?
Symptoms and General Health	Exposure	VA-065B	The contribution of FEN-1 to genetic integrity subsequent to oxidative stress
Symptoms and General Health	Exposure	VA-065C	The importance of hydrogen peroxide detoxification in cellular protection
Symptoms and General Health	Exposure	VA-065D	Do defective Gpx1 and ALDH2 genes increase sensitivity to environmental hazards?
Symptoms and General Health;	Exposure	DoD-007B	Carcinogenicity of Depleted Uranium Fragments
Symptoms and General Health	Exposure; Symptoms;	DoD-122	Carcinogenic Potential of Depleted Uranium and Tungsten Alloys
Symptoms and General Health;	Exposure; Symptoms;	DoD-127	Depleted Uranium Fragment Carcinogenicity: Extrapolation of Findings in Rodents to Man

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## Immune Function and Infectious Diseases

### Clinical

Research Focus	Project Focus	Project	Project Title
	Diagnosis	DoD-047	Study of Mycoplasmal Infections in Gulf War Veterans
	Symptoms	DoD-048	Assessment of Genomic Instability via Chromosome 7 Inversion Frequency in a Gulf-War Syndrome Cohort vs Selected Control Groups
	Diagnosis; Treatment;	VA-006E	Clinical and Epidemiology Leishmania Research
Brain and Nervous System Function	Symptoms	DoD-088	Clinical Relevance of Novel Immunological Markers in PTSD
Brain and Nervous System Function	Symptoms	VA-017	Immunological Evaluation of Persian Gulf Veterans
Environmental Toxicology	Exposure; Interactions;	DoD-106	The Role of Th1/Th2 cytokine balance in Gulf War-related illness
Symptoms and General Health	Treatment; Diagnosis;	DoD-067	Antibacterial Treatment Method Based Upon the Excretion of Dead and Decaying Spherical Bacteria
Symptoms and General Health	Symptoms; Exposure;	VA-006B	Clinical and Neuroendocrine Aspects of Fibromyalgia (Project II)
Symptoms and General Health	Exposure; Symptoms;	DoD-042	The Symptomatic Persian Gulf Veterans Protocol: An Analysis of Risk Factors with an Immunologic and Neuropsychiatric Assessment
Symptoms and General Health	Treatment; Symptoms;	DoD-119	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT) (See also VA-55)
Symptoms and General Health	Treatment; Symptoms;	VA-055	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT) (See also DoD-119)

## Immune Function and Infectious Diseases

### Development

Research Focus	Project Focus	Project	Project Title
	Diagnosis	DoD-008A	Serologic Diagnosis of Viscerotropic Leishmaniasis (VTL)
	Diagnosis	DoD-008B	Development of a Leishmania Skin Test Antigen (LSTA)
	Diagnosis	DoD-038	Diagnostic Antigens of Leishmania tropica
	Diagnosis	DoD-066	Testing for mycoplasmal infection replicability of nucleoprotein gene tracking and forensic polymerase chain reaction

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## Immune Function and Infectious Diseases

### Development

Research Focus	Project Focus	Project	Project Title
	Diagnosis; Treatment;	DoD-095	Development of Diagnostic tools and alternative treatment drugs for Leishmania
Symptoms and General Health	Diagnosis	DoD-097	Surveillance of B. pertussis among Military Trainees with Respiratory Disease: Development and Validation of a Highly Sensitive PCR and Beacon Probe based Method for Diagnosis of Pertussis
Symptoms and General Health	Prevention; Symptoms;	VA-099	Vaccination Against Visceral Leishmaniasis with a multi-epitope vaccine

## Immune Function and Infectious Diseases

### Mechanistic

Research Focus	Project Focus	Project	Project Title
	Treatment	DoD-009	Identification of the Genetic Factors Which Control Tropism in Leishmania
	Prevention	VA-015	Vaccine-Mediated Immunity Against Leishmaniasis
	Prevention	VA-016	Protective Immunity in Experimental Visceral Leishmaniasis
	Prevention; Treatment;	VA-094	The Immunology of Chronic Cutaneous Leishmaniasis
Environmental Toxicology	Exposure	DoD-151	Mechanisms and Consequences of Vaccine Effects on Th1/Th2 Balance in Gulf War Veterans
Environmental Toxicology	Exposure; Interactions;	DoD-112	Role of Respirable Saudi Arabian Sand and Pyridostigmine in the Gulf War Syndrome: An Autoimmune Adjuvant Disease?
Environmental Toxicology; Pyridostigmine Bromide	Exposure; Interactions;	DoD-076	Evaluations of Immunotoxicity due to Concurrent Exposure to DEET, Pyridostigmine, and JP-8 Jet Fuel
Environmental Toxicology; Pyridostigmine Bromide	Exposure; Interactions;	DoD-081	Immunotoxicity due to Coexposure to DEET, Pyridostigmine, and Stress
Symptoms and General Health	Treatment; Symptoms;	VA-105	Expression of the Major Surface Protease of Leishmania Chagasi



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## Reproductive Health

### Clinical

Research Focus	Project Focus	Project	Project Title
	Symptoms	VA-053	Spouses and Children Program
Environmental Toxicology; Chemical Weapons	Symptoms	VA-047	Retrospective Verification of Mustard Gas Exposure
Immune Function and Infectious Diseases	Symptoms	DoD-044	Investigation of Seminal Plasma Hypersensitivity Reactions

## Reproductive Health

### Epidemiology

Research Focus	Project Focus	Project	Project Title
	Prevention	DoD-001C	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 3: A comparative study of pregnancy outcomes among Gulf War veterans and other active-duty personnel
	Prevention	DoD-001D	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 4: Infertility and Miscarriage in Gulf War Veterans
	Symptoms	DoD-001G	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 7: Prevalence of Congenital Anomalies Among Children of Persian Gulf War Veterans
	Prevention; Symptoms;	DoD-035	Feasibility of Investigating Whether There is a Relationship Between Birth Defects and Service in the Gulf War
	Prevention; Symptoms;	HHS-004	Suspected Increase of Birth Defects and Health Problems Among Children Born to Persian Gulf War Veterans In Mississippi

## Symptoms and General Health

### Clinical

Research Focus	Project Focus	Project	Project Title
	Symptoms	DoD-001A	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; A Study of Symptoms Among 1500 Seabees
	Diagnosis	DoD-109	Disordered Responses to Orthostatic Stress in the Pathogenesis of Gulf War Syndrome Symptoms

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## Symptoms and General Health

### Clinical

Research Focus	Project Focus	Project	Project Title
	Symptoms	VA-018	Chronic Gastrointestinal Illness in Persian Gulf Veterans
	Symptoms	VA-040	Musculoskeletal Symptoms in Gulf War Syndrome
	Treatment; Symptoms;	VA-056	Birmingham's Gulf War Veterans' Illness Demonstration Clinic (13)
	Treatment; Symptoms;	VA-058	Implementation and Evaluation of Gulf War Veterans' Demonstration Project (13)
	Diagnosis; Symptoms;	VA-104	Characterization of Pain Processing Mechanisms in the Irritable Bowel Syndrome
Brain and Nervous System Function	Symptoms	DoD-036	Fatigue in Persian Gulf Syndrome-Physiologic Mechanisms
Brain and Nervous System Function	Symptoms	DoD-041	Evaluation of Muscle Function in Persian Gulf Veterans
Brain and Nervous System Function	Symptoms	DoD-058	Illness Among Persian Gulf War Veterans: Case Validation Studies
Brain and Nervous System Function	Symptoms	DoD-085	CNS Cytokines and CRH in Gulf War Veterans with Multiple Unexplained Symptoms
Brain and Nervous System Function	Symptoms	DoD-101	Mechanisms in Chronic Multisymptom Illnesses
Brain and Nervous System Function	Symptoms	VA-069	Cardiovascular Hyporeactivity and Fatiguing Illness in Gulf War Veterans
Brain and Nervous System Function	Symptoms	VA-071	Central Nervous System Modulation of Visceral Pain in the Persian Gulf Syndrome
Brain and Nervous System Function	Symptoms	VA-073	Pain Sensitivity in Gulf War Veterans with Medically Unexplained Musculoskeletal Pain
Brain and Nervous System Function	Symptoms	VA-082	Pituitary Adrenal Function in People with Fatiguing Illness
Brain and Nervous System Function	Symptoms	VA-096	Functional Imaging of Pain in Veterans with Unexplained Muscle Pain
Brain and Nervous System Function	Diagnosis; Symptoms;	DoD-111	Autonomic Dysfunction in Gulf War Veterans
Brain and Nervous System Function	Treatment; Symptoms;	DoD-115	A Randomized, Multi-Center, Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illnesses (EBT) (See also VA-62; formerly VA/DoD 1D)
Brain and Nervous System Function	Treatment; Symptoms;	VA-057	Case Management and Residential Rehabilitation for Persian Gulf War Veterans (13)

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## Symptoms and General Health

### Clinical

Research Focus	Project Focus	Project	Project Title
Brain and Nervous System Function	Treatment; Symptoms;	VA-059	Demonstration Treatment Program for Gulf War Veterans With Unexplained Physical Symptoms (13)
Brain and Nervous System Function	Treatment; Symptoms;	VA-062	A Randomized, Multi-Center, Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illness (EBT) (See also DoD-115; formerly VA/DoD 1V)
Brain and Nervous System Function;	Diagnosis; Symptoms;	DoD-031	Dysregulation of the Stress Response in the Persian Gulf Syndrome

## Symptoms and General Health

### Epidemiology

Research Focus	Project Focus	Project	Project Title
	Symptoms	DoD-001B	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 2: A Comparative Study of Hospitalizations among Active-Duty Personnel Who Participated in the Gulf War and Similar Personnel Who Did Not.
	Symptoms	DoD-001E	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 5: Seabee Health Study
	Symptoms	DoD-001F	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 6: A Comparison of Nonfederal Hospitalization Experience Among Veterans in California who have separated from active service: GWV vs. NDV
	Symptoms	DoD-004	The General Well-Being of Gulf War Era Service Personnel from the States of Pennsylvania and Hawaii: A Survey
	Symptoms	DoD-014	Risk Factors Among US Army Soldiers for Enrolling on the Department of Veterans Affairs Gulf War Registry
	Symptoms	DoD-046	Exploratory Data Analysis with the CCEP Database
	Symptoms	DoD-070	War Syndromes from 1900 to the Present: Symptom Patterns and Long-term Health Outcomes

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## Symptoms and General Health

### Epidemiology

Research Focus	Project Focus	Project	Project Title
	Symptoms	DoD-071	A Comparison of Post Deployment Hospitalization Between Vietnam and Gulf War Veterans
	Symptoms	DoD-098	Investigation of a Baseline Medical Database to Evaluate the Health of Military Forces and Veterans
	Prevention	DoD-110	Predictors of Career and Family Dysfunction in Young Adults Enlisting in the United States Navy
	Symptoms	DoD-116B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking, Pilot Study (See also VA-63B; formerly VA/DoD- 2DB)
	Symptoms	DoD-120	Assessing the Potential Health Impact of the Gulf War on Saudi Arabia National Guard Members and Their Dependents
	Diagnosis	DoD-140	US Department of Defense Surveillance for Neoplasms in Infancy
	Symptoms	DoD-148	Predicting Operational Readiness for Deployed Army National Guard and Army Reserve Soldiers and Families
	Symptoms	DoD-150	Validation Study of Gulf War Deployment Files
	Symptoms	HHS-001	Health Assessment of Persian Gulf War Veterans from Iowa
	Prevention	HHS-009	Improving Health Risk Communications to Prevent Unexplained Illnesses Related to Military Deployments
	Symptoms	HHS-011	Deployment to the Gulf War and the Subsequent Development of Cancer
	Symptoms	VA-002	National Health Survey of Persian Gulf Veterans
	Symptoms	VA-002A	VA National Survey of Persian Gulf Veterans - Phase I
	Symptoms	VA-002B	VA National Survey of Persian Gulf Veterans - Phase II
	Symptoms	VA-004C	Gulf War And Vietnam Veterans Cancer Incidence Surveillance
	Symptoms	VA-046	Diarrhea in Persian Gulf Veterans: An Irritable Bowel-Like Disorder
	Symptoms	VA-063B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking Pilot Study (See also DoD-116B; previously VA/DoD-
	Symptoms	VA-070	A Clinical Evaluation of the Health Status of Persian Gulf War Veterans in VISN 8

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## Symptoms and General Health

### Epidemiology

Research Focus	Project Focus	Project	Project Title
	Symptoms; Exposure;	DoD-073	Post-deployment Morbid Stress, Behavior and Health: Developing a Model for Predicting Morbidity, Mortality, and other Adverse Outcomes
	Prevention; Symptoms;	DoD-108	Health Status of Current National Guard Members
	Prevention; Symptoms;	DoD-117	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking
	Prevention; Treatment;	HHS-010	Health-e Voice: Optimized Implementation of a Stepped Clinical Risk Communications Guideline
	Symptoms	DoD-015	Comparative Mortality Among US Military Personnel Worldwide During Operations Desert Shield and Desert Storm
	Prevention	DoD-102	Case-Control Study of Fatal Motor Vehicle Crashes Among Gulf War and Non-Deployed Veterans
	Symptoms	VA-001	Mortality Follow-up Study of Persian Gulf Veterans
Brain and Nervous System Function	Symptoms	DoD-039	A Controlled Epidemiological and Clinical Study into the Effect of Gulf War Service on Servicemen and Women of the United Kingdom Armed Forces
Brain and Nervous System Function	Symptoms	DoD-141	Physical, Mental, Social, and Family Health Outcomes of Gulf War Veterans
Brain and Nervous System Function	Symptoms	DoD-142	Illnesses Among Persian Gulf War Veterans: Case Validation Studies (Iowa / Great Britain)
Brain and Nervous System Function	Symptoms	DoD-143	Millennium Cohort Study
Brain and Nervous System Function	Symptoms	DoD-149	Longitudinal Health Study of Gulf War Veterans
Brain and Nervous System Function	Symptoms	VA-002C	VA National Survey of Persian Gulf Veterans - Phase III
Brain and Nervous System Function	Symptoms	VA-005A	Health and Exposure Survey of Persian Gulf Veterans
Brain and Nervous System Function	Symptoms	VA-078	Millennium Cohort Study
Brain and Nervous System Function; Reproductive Health	Symptoms	DoD-045	Air Force Women's Health Surveillance Study
Environmental Toxicology	Symptoms; Exposure;	DoD-074	Relationship of Stress Exposures to Health in Gulf War Veterans

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## Symptoms and General Health

### Epidemiology

<b>Research Focus</b>	<b>Project Focus</b>	<b>Project</b>	<b>Project Title</b>
Environmental Toxicology; Chemical Weapons	Exposure; Symptoms;	DoD-116	VA/DoD Core Funding of the Medical Follow-Up Agency (See also VA-63; formerly VA-DoD-2D/2V)
Environmental Toxicology; Chemical Weapons	Exposure; Symptoms;	VA-063	VA/DoD Core funding of the Medical Follow-Up Agency (See also DoD-116; formerly VA/DoD-2V/2D)
Reproductive Health	Symptoms	DoD-030	Epidemiological Studies Persian Gulf War Illnesses, PG Women's Health Linkage Study
Reproductive Health	Symptoms; Diagnosis; Prevention	DoD-096	Deployment Health Center
Reproductive Health	Symptoms; Prevention;	DoD-001	Naval Health Study Program

# **Appendix C**

## **Project Funding**

**(As of September 30, 2004)**

# NOTES ON REVISED TABLE OF SPENDING FOR GULF WAR VETERANS' ILLNESSES RESEARCH

## General Notes

1. All entries for research funding reflect money centrally obligated to researchers (both intramural and extramural) to carry out the specific projects. These funds also cover operational costs for administration, infrastructure, etc. Each department allocates these costs in slightly different ways, making it difficult to completely account for these funds. For example, in VA the research appropriation does not pay for clinician/investigator salaries. By law those funds must come from the patient care appropriation. These salary costs are not included in the obligated costs listed in the table.
2. A "blank" funding entry generally reflects years in which a project was not active (e.g. it had not started or it had come to an end).
3. Some multiyear projects receive all of their funding in the fiscal year of the authorization and appropriation. For those, the dollars authorized and obligated are shown for that fiscal year. The remaining funding entries show \$0 for the years that the project is active.
4. Although all projects funded from FY 1994-2004 are listed, only the financial data for FY 1995-2004 (a 10-year window) are shown in Appendix C. Projects that received all of their obligated funds in FY 2004 (or earlier) will, therefore, appear in the table as having no funding.
5. Some intramural projects/programs are supported out of operational costs. For those projects, \$0 is entered for the funds in the fiscal years that the project is active.
6. Programs consisting of multiple projects are represented in one of two ways depending on how funds are centrally obligated:
  - a. **Funds centrally obligated to the program:** These programs are shown in the table as a main program indicated by project designation such as DoD-1, and projects within the program as DoD-1A, DoD-1B, etc. All funds are shown under the main program. Blank funding entries are shown for the individual projects.
  - b. **Funds centrally obligated to projects within a program:** The funds for these programs are only indicated by their projects without a main program identifier, for example, VA-2A and VA-2B.
7. Totals for projects that began prior to 1995 may not reflect the total dollars obligated for their entire funding period.

## Specific Notes

1. DoD-4 is part of a larger US Army study conducted at Walter Reed Army Institute of Research. Funding for this project has been combined into project DoD-23. In addition, projects DoD-8A and 8B are part of a larger US Army study in which all funding has been combined and is shown under program DoD-8.
2. HHS-3 was funded from the FY'91 appropriation, which is not included in this accounting.
3. HHS-4 was funded from the FY'93 appropriation, which is not included in this accounting.
4. Funds for VA-1 for FY'94 through FY'97 represent an aggregate of funds for both the VA Mortality Study and the VA National Survey of Persian Gulf Veterans. Beginning in FY'98, VA-1 reflects continuation of the VA Mortality Study. Beginning in FY'98, VA-2A, 2B, and 2C reflect funding for separate components of the VA National Survey of Persian Gulf Veterans.
5. In seven instances (DoD-115 & VA-62, DoD-116 & VA-63, DoD-118 & VA-61, DoD-119 & VA-55, DoD-125 & VA-74, DoD-143 & VA-78, and DoD-154 & VA-88), two different designations represent the same project because both DoD and VA funded them jointly. The total funding appropriated for each of these five projects is broken down and reported separately by funding agency.



**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	TOTALS* FY '95-'04
DoD-001	Naval Health Study Program	C	\$1,010,000	\$2,250,000	\$2,000,000	\$2,654,000							\$7,914,000
DoD-001 A	Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 1: A Study of Symptoms among 1500 Seabees.	C											\$0
DoD-001 B	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 2: A Comparative Study of Hospitalizations among Active-Duty Personnel Who Participated in the Gulf War and Similar Personnel Who Did Not.	C											\$0
DoD-001 C	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 3: A comparative study of pregnancy outcomes among Gulf War veterans and other active-duty personnel.	C											\$0
DoD-001 D	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 4: Infertility and Miscarriage in Gulf War Veterans.	C											\$0
DoD-001 E	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 5: Seabee Health Study.	C											\$0

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Status: C=Complete; O=Ongoing

**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	TOTALS* FY '95-'04
DoD-001 F	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 6: A Comparison of Nonfederal Hospitalization Experience Among Veterans in California who have separated from active service: PGW vs. EV.	C											\$0
DoD-001 G	Epidemiologic Studies of Morbidity among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors; Study 7: Prevalence of Congenital Anomalies Among Children of Persian Gulf War Veterans.	C											\$0
DoD-002	Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET.	C	\$0	\$0	\$0								\$0
DoD-004	The General Well-Being of Gulf War Era Service Personnel from the States of Pennsylvania and Hawaii: A Survey.	C											\$0
DoD-007 A	Health Risk Assessment of Embedded Depleted Uranium: Behavior, Physiology, Histology, and Biokinetic Modeling.	C											\$0
DoD-007 B	Carcinogenicity of Depleted Uranium Fragments.	C					\$121,400	\$0					\$121,400
DoD-008	Program DoD-8.	C	\$895,000	\$652,000	\$695,000	\$694,000	\$0						\$2,936,000
DoD-008 A	Serologic Diagnosis of Viscerotropic Leishmaniasis (VTL).	C	\$0	\$0									\$0
DoD-008 B	Development of a Leishmania Skin Test Antigen (LSTA).	C											\$0

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	TOTALS* FY '95-'04
DoD-009	Identification of the Genetic Factors Which Control Tropism in Leishmania.	C	\$150,000	\$0	\$0	\$0	\$0						\$150,000
DoD-010	Pyridostigmine Synergistic Toxicity Study.	C	\$44,000										\$44,000
DoD-011	Male/Female Differential Tolerances to Pyridostigmine Bromide.	C	\$359,000	\$0	\$0	\$0							\$359,000
DoD-013	Effects of Persian Gulf War Service on Military Working Dogs.	C	\$0	\$97,000	\$200,000	\$120,000	\$200,000	\$0	\$0	\$0	\$0		\$617,000
DoD-014	Risk Factors Among US Army Soldiers for Enrolling on the Department of Veterans Affairs Gulf War Registry.	C											\$0
DoD-015	Comparative Mortality Among US Military Personnel Worldwide During Operations Desert Shield and Desert Storm.	C											\$0
DoD-016	Kuwait Oil Fire Health Risk Assessment.	C	\$137,000	\$50,000	\$127,000								\$314,000
DoD-017	Retrospective Studies Involving Military Use of Pyridostigmine as a Pretreatment for Nerve Agent Poisoning.	C											\$0
DoD-018	Kuwait Oil Fires Troop Exposure Assessment Model (TEAM).	C	\$151,000	\$770,000	\$193,000	\$290,000	\$295,000	\$295,000	\$306,000	\$195,000	\$225,000		\$2,720,000
DoD-019	Persian Gulf Veterans Health Tracking System.	C	\$25,000	\$0	\$0	\$450,000	\$450,000	\$0	\$0	\$100,000	\$50,000		\$1,075,000
DoD-021	Study of Variability In Pyridostigmine Inhibition of Blood Cholinesterases in Healthy Adults and Individuals With Symptoms Following Participation in Operation Desert Storm.	C	\$100,000	\$0	\$0								\$100,000
DoD-022	Chronic Organophosphorus Exposure and Cognition.	C			\$0	\$0	\$0	\$0					\$0

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
DoD-023	Acute and Long-Term Impact of Deployment to Southwest Asia on the Physical and Mental Health of Soldiers and their Families.	C	\$688,000	\$764,000	\$985,000								\$2,437,000
DoD-030	Epidemiological Studies Persian Gulf War Illnesses, PG Women's Health Linkage Study.	C	\$779,000	\$0	\$0	\$0	\$0	\$0	\$0				\$779,000
DoD-031	Dysregulation of the Stress Response in the Persian Gulf Syndrome.	C	\$971,000	\$0	\$0	\$0	\$0	\$0					\$971,000
DoD-032	Neuropsychological Functioning in Persian Gulf Era Veterans.	C	\$353,000	\$0	\$0	\$0	\$0						\$353,000
DoD-033	Effects of Pyridostigmine in Flinders Line Rats Differing in Cholinergic Sensitivity.	C	\$354,000	\$0	\$0	\$0	\$0						\$354,000
DoD-034	Characterization of Emissions from Heaters Burning Leaded Diesel Fuel in Unvented Tents.	C	\$283,000	\$0	\$0	\$0	\$0						\$283,000
DoD-035	Feasibility of Investigating Whether There is a Relationship Between Birth Defects and Service in the Gulf War.	C	\$427,000	\$10,000	\$63,000	\$0	\$10,500	\$0	\$0				\$510,500
DoD-036	Fatigue in Persian Gulf Syndrome-Physiologic Mechanisms.	C	\$416,000	\$138,000	\$0	\$0	\$0						\$554,000
DoD-037	Neurobehavioral and Immunological Toxicity of Pyridostigmine, Permethrin, and DEET in Male and Female Rats.	C	\$934,000	\$5,000	\$0	\$0	\$0						\$939,000
DoD-038	Diagnostic Antigens of Leishmania tropica.	C	\$612,000	\$0	\$0	\$0							\$612,000
DoD-039	A Controlled Epidemiological and Clinical Study into the Effect of Gulf War Service on Servicemen and Women of the United Kingdom Armed Forces.	C	\$865,000	\$0	\$28,400	\$155,000	\$0	\$124,868	\$0				\$1,173,268

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	TOTALS* FY '95-'04
DoD-040	Psychological and Neurobiological Consequences of the Gulf War Experience.	C	\$264,000	\$0	\$0	\$0	\$0	\$0	\$0				\$264,000
DoD-041	Evaluation of Muscle Function in Persian Gulf Veterans.	C	\$906,000	\$0	\$0	\$0	\$0	\$0					\$906,000
DoD-042	The Symptomatic Persian Gulf Veterans Protocol: An Analysis of Risk Factors with an Immunologic and Neuropsychiatric Assessment.	C		\$700,000	\$0	\$0	\$0	\$0	\$0				\$700,000
DoD-044	Investigation of Seminal Plasma Hypersensitivity Reactions.	C		\$634,000	\$0	\$5,000	\$14,200						\$653,200
DoD-045	Physical and Emotional Health of Gulf War Veterans Women.	C		\$299,274	\$0	\$456,732	\$20,505	\$0	\$99,628	\$0			\$876,139
DoD-046	Exploratory Data Analysis with the CCEP Database.	C		\$60,000	\$100,000								\$160,000
DoD-047	Infections in Gulf War Veterans.	C		\$112,000	\$0	\$0							\$112,000
DoD-048	Assessment of Genomic Instability via Chromosome 7 Inversion Frequency in a Gulf War Syndrome Cohort vs. Selected Control Groups.	C		\$74,000	\$0	\$0							\$74,000
DoD-049	Diagnosis and Dosimetry of Exposure to Sulfur Mustard: Development of Standard Operating Procedures and Exploratory Research on Protein Adducts.	C		\$927,000	\$0	\$0	\$0	\$0					\$927,000
DoD-050	Toxicokinetics of O-Ethyl S-(2-Diisopropylaminoethyl) Methylphosphothioate [(+)-VX] in Rats, Hairless Guinea Pigs and Marmosets - Identification of Metabolic Pathways.	C		\$699,000	\$0	\$0	\$0						\$699,000

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
DoD-051	Transgenic Engineering of Cholinesterases: Tools for Exploring Cholinergic Responses.	C	\$0	\$864,000	\$0	\$0	\$0	\$0					\$864,000
DoD-052	Female Gender and Other Potential Predictors of Functional Health Status Among Persian Gulf War Veterans.	C											\$0
DoD-053	Long-Term Effects of Subclinical Exposures to Sarin.	C	\$400,000	\$1,000,000	\$0	\$0	\$0	\$217,137	\$0				\$1,617,137
DoD-054	Assessment of Subchronic Neurobehavioral and Neuropathologic Effects in Rats Following Low-Level Sarin Exposure.	C	\$100,000	\$315,000	\$100,000	\$0	\$0	\$0					\$415,000
DoD-055	Low-Level Exposure to GB Vapor in Air: Diagnosis/Dosimetry, Lowest Observable Effect Levels, Performance-Incapacitation, and Possible Delayed Effects.	C	\$136,000	\$500,000	\$136,000	\$0	\$0	\$0	\$0				\$636,000
DoD-056	Low-Level Sarin Neurotoxicity and Its Modulation by Pyridostigmine.	C	\$100,000	\$685,000	\$100,000	\$0	\$0	\$0	\$0				\$785,000
DoD-057	Physiologic Effects of Stress in Gulf War Veterans.	C	\$909,000		\$909,000	\$0	\$0	\$0	\$0	\$0			\$909,000
DoD-058	Illness Among Persian Gulf War Veterans: Case Validation Studies.	C	\$2,208,000		\$2,208,000	\$0	\$0	\$4,264	\$267,337	\$0	\$0		\$2,479,601
DoD-059	Pyridostigmine-induced Neurodegeneration: Role of neuronal Apoptosis.	C	\$625,000		\$625,000	\$0	\$0	\$0	\$0				\$625,000
DoD-060	Butyrylcholinesterase Genetic Variants in Persons with Gulf War Illness.	C	\$125,000		\$125,000	\$0	\$0						\$125,000

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
	Neurophysiologic and Neuropathologic Effects in Monkeys of Low Level Exposures to Sarin, Pyridostigmine, Pesticides, and Botulinum Toxoid.	C			\$1,586,000	\$0	\$0	\$0					\$1,586,000
DoD-061	Sarin and Pyridostigmine Interaction under Physical Stress: Neurotoxic Effects in Mice.	C			\$201,000	\$0	\$0						\$201,000
	PGW Veterans: Epidemiological and Clinical Evidence for Residual Organophosphate Neurotoxicity.	C			\$1,626,000	\$0	\$0	\$0					\$1,626,000
DoD-063	Individual Differences in Neurobehavioral Effects of Pyridostigmine.	C			\$1,900,000	\$18,516	\$0	\$190,595	\$0				\$2,109,111
DoD-064	Multi-Disciplinary Pathophysiologic Studies of Neurotoxic Gulf War-Related Neurologic Syndromes Leading to Diagnosis and Treatment.	C			\$3,000,000	\$0	\$0	\$0	\$0				\$3,000,000
DoD-065	Testing for Mycoplasma Infection Replicability of Nucleoprotein Gene Tracking and Forensic Polymerase Chain Reaction.	C		\$49,940	\$100,000	\$40,000	\$403,000	\$140,319	\$0				\$733,259
DoD-066	Antibacterial Treatment Method Based Upon the Excretion of Dead and Decaying Spherical Bacteria.	C			\$3,400,000	\$0	\$0						\$3,400,000
DoD-067	Five Year Follow-Up of Army Personnel Potentially Exposed to Chemical Warfare Agents.	O			\$946,160	\$0	\$0	\$110,000	\$0	\$245,910	\$0	\$0	\$1,302,070
DoD-069	War Syndromes from 1900 to the Present: Symptom Patterns and Long Term Health Outcomes.	C			\$734,687	\$0	\$115,000	\$0	\$0				\$849,687

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
DoD-071	A Comparison of Post-Deployment Hospitalization Incidence between Vietnam and Gulf War Veterans.	C	\$566,000	\$0	\$0	\$0	\$0	\$0					\$566,000
DoD-072	Long-Term Effects of Subchronic Exposure to Sarin, Alone and with Stress and Other Chemicals.	C	\$996,000				\$0	\$0	\$0	\$0			\$996,000
DoD-073	Post-Deployment Morbid Stress, Behavior and Health: Developing a Model for Predicting Morbidity, Mortality, and other Adverse Outcomes.	C	\$500,000				\$0	\$0	\$0				\$500,000
DoD-074	Relationship of Stress Exposures to Health in Gulf War Veterans.	C	\$161,489			\$1,991,330	\$0	\$0	\$0	\$0			\$2,152,819
DoD-075	Toxic Interactions of Prophylactic Drugs and Pesticides.	C				\$1,380,157	\$0	\$0	\$0	\$0	\$0		\$1,380,157
DoD-076	Evaluation of Immunotoxicity Due to Concurrent Exposure to DEET, Pyridostigmine, and JP-8 Jet Fuel.	C				\$448,369	\$0	\$0	\$0	\$0	\$0		\$448,369
DoD-077	Percutaneous Absorption of Chemical Mixtures Relevant to the Gulf War.	C				\$760,031	\$0	\$0	\$0	\$0			\$760,031
DoD-078	Experimental Models of Gulf War Syndrome.	C				\$2,179,097	\$444,800	\$0	\$0	\$0			\$2,623,897
DoD-079	Time-course of Stress-Induced Impairment of the Blood Brain Barrier.	C	\$100,200			\$0	\$0	\$0					\$100,200
DoD-080	Molecular Regulation of Corticosteroid Receptor Expression in Stress-Responsive Cells.	C	\$297,400			\$0	\$0	\$0	\$0	\$0			\$297,400
DoD-081	Immunotoxicity Due to Coexposure of DEET, Pyridostigmine, and Stress.	C	\$300,000			\$0	\$0	\$0	\$0	\$0			\$300,000
DoD-082	Feasibility of Developing a Registry of PTSD-Affected Veteran Sib Pairs.	C	\$172,000			\$0	\$0	\$0	\$0	\$0			\$172,000

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
DoD-083	Risk for Stress-Related Substance Abuse: Effects of Family History of Alcoholism.	C	\$299,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0			\$299,700
DoD-084	Psychobiological Alterations Of Persian Gulf War Veterans with and without PTSD.	C	\$300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0			\$300,000
DoD-085	Central Nervous System Cytokines and CRH in Gulf War Veterans with Multiple Unexplained Symptoms.	C	\$149,900	\$149,200	\$0	\$0	\$0	\$0	\$0	\$0			\$299,100
DoD-086	Effects of Combat Stress on the Structure and Function of the Hippocampus.	C	\$300,000	\$297,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$597,800
DoD-087	Validation of Psychosocial Risk and Resilience Factors Accounting for Physical and Mental Health and Health-Related Quality of Life among PGWVs.	C	\$289,100	\$0	\$0	\$0	\$0	\$0	\$68,044	\$0	\$0		\$357,144
DoD-088	Clinical Relevance of Novel Immunological Markers in PTSD.	C	\$242,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0			\$242,300
DoD-089	Limbic Blood Flow and Opiate Receptor PET in Posttraumatic Stress Disorder.	C	\$288,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0			\$288,500
DoD-090	SPECT Benzodiazepine Receptor and MR Imaging in PTSD.	C	\$200,000	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0			\$300,000
DoD-091	Neurological and Circadian Substrates of PTSD-Like Behaviors.	C	\$300,000	\$299,000	\$0	\$0	\$0	\$0	\$0	\$0			\$599,000
DoD-092	Traumatic Experiences Persistently Enhance Cue-dependent Learning: Toward an Animal Model of Chronic Stress and Posttraumatic Stress Disorder.	C	\$249,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0			\$249,700

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
DoD-093	Troops Exposed to Nerve Agents at Aberdeen Proving Ground: Follow-Up.	C					\$970,700	\$0	\$0				\$970,700
DoD-094	Combined Analysis of the VA and DoD Gulf War Clinical Registries: A Study of Clinical Findings from Systematic Medical Examinations of 100,000 U.S. Gulf War Veterans.	C					\$557,173	\$206,727	\$0	\$0			\$763,900
DoD-095	Development of Diagnostic tools and alternative treatment drugs for Leishmania.	C					\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000			\$6,000,000
DoD-096	Deployment Health Center: Surveillance of B. pertussis among Military Trainees with Respiratory Disease: Development and Validation of a Highly Sensitive PCR and Beacon Probe based Method for Diagnosis of Pertussis.	O					\$1,500,000	\$1,500,000	\$2,250,000	\$1,750,000	\$1,750,000	\$1,750,000	\$10,500,000
DoD-097	Investigation of a Baseline Medical Database to Evaluate the Health of Military Forces and Veterans.	C					\$177,300	\$146,742	\$151,202	\$151,000			\$626,244
DoD-098	DoD-wide Medical Surveillance for Potential Long-Term Adverse Events associated with Anthrax Immunization in Active Duty Service Members, Proposal 1: Hospitalizations.	O					\$332,500	\$188,000	\$364,182	\$0	\$0	\$0	\$884,682
DoD-099	Antibodies to Squalene.	O					\$207,876	\$204,205	\$224,265	\$0	\$0	\$0	\$636,346
DoD-100	Mechanisms in Chronic Multisymptom Illnesses.	O					\$582,756		\$50,000	\$487,333	\$0	\$0	\$1,120,089
DoD-101	Case-control Study of Fatal Motor Vehicle Crashes Among Gulf War and Non-deployed Veterans.	O					\$2,903,408	\$5,542,189	\$0	\$4,786,192	\$644,870	\$4,527,000	\$18,403,659
DoD-102		C					\$249,908	\$0	\$253,793	\$0	\$281,950		\$785,651

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY2003	FY 2004	TOTALS* FY '95-'04
DoD-103	Human Metabolism & Interactions of Deployment-related Chemicals.	O		\$46,315			\$583,319	\$46,315	\$0	\$0	\$349,994	\$242,424	\$1,222,052
DoD-104	Clinical Evaluation of a Proposed New Gulf War Syndrome.	C		\$9,311			\$1,003,937	\$9,311	\$0	\$0	\$40,844		\$1,054,092
DoD-105	Neuroplasticity and Calcium Signaling in Stressed Rat Amygdala.	C		\$0			\$950,490	\$0	\$0	\$0	\$0		\$950,490
DoD-106	The role of Th1/Th2 cytokine balance in Gulf War-related Illness.	C		\$0			\$292,411	\$0	\$0	\$0			\$292,411
DoD-107	Stress, Organophosphates and Blood Brain Barrier Integrity.	C		\$10,825			\$875,373	\$10,825	\$0	\$0	\$0		\$886,198
DoD-108	Health Status of Current National Guard Members.	O		\$0			\$578,970	\$0	\$264,375	\$174,651	\$0	\$0	\$1,017,996
DoD-109	Disordered responses to Orthostatic Stress in the Pathogenesis of Gulf War Syndrome Symptoms.	C		\$147,523			\$917,762	\$147,523	\$397,243	\$0	\$0		\$1,462,528
DoD-110	Predictors of Career and Family Dysfunction in Young Adults Enlisting in the United States Navy.	C		\$63,705			\$127,920	\$63,705	\$0	\$0			\$191,625
DoD-111	Autonomic Dysfunction in Gulf War Veterans.	O		\$0			\$999,144	\$0	\$0	\$0	\$189,609	\$0	\$1,188,753
DoD-112	Role of Respirable Saudi Arabian Sand and Pyridostigmine in the Gulf War Syndrome: An Autoimmune Adjuvant Disease?	C		\$0			\$256,916	\$0	\$0	\$0			\$256,916
DoD-113	Interactions of Subsymptomatic Doses of Sarin with Pyridostigmine, Neurochemical, Behavioral, and Physiological Effects.	C		\$0			\$802,140	\$0	\$0	\$0	\$0		\$802,140
DoD-114	A Re-Examination of Neuropsychological Functioning in Persian Gulf War Veterans.	C		\$0			\$593,712	\$0	\$0	\$0			\$593,712

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**Department of Defense Gulf War Research Funding**

PROJECT NO	PROJECT TITLE	STATUS	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	TOTALS* FY '95-'04
	A Randomized Multi-Center Controlled Trial of Multi-Model Therapy in Veterans with Gulf War Illness (EBT) (see also VA-62; formerly VA/DoD-1D).	C					\$1,000,000	\$2,000,000	\$0	\$0			\$3,000,000
DoD-1115	VA/DoD Core Funding of the Medical Follow-up Agency (See also VA-63; formerly VA/DoD-2D).	C	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000		\$2,250,000
	Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground, (Pilot Study) (See also VA-63A; formerly VA/DoD-2DA).	C											\$0
DoD-1116 A	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking, Pilot Study (See also VA-63B; formerly listed as VA/DoD-2DB).	C											\$0
DoD-1116 B	Patterns of Pre-Persian Gulf War Illness and Health Care Seeking.	C						\$1,232,050	\$0	\$0			\$1,232,050
DoD-1117	An Epidemiological Investigation into the Occurrence of Amyotrophic Lateral Sclerosis (ALS) among GWVs (See also VA-61).	C						\$430,824	\$832,272	\$0			\$1,263,096
DoD-1118	Antibiotic Treatment of Gulf War Veterans' Illnesses (ABT) (see also VA-055)	C					\$500,000	\$1,000,000	\$0	\$0			\$1,500,000
DoD-1119	Assessing Potential Health Impact of the Gulf War on Saudi Arabia National Guard Members and Their Dependents.	C					\$239,000	\$316,000	\$0	\$0			\$555,000
DoD-1120	Evaluation of the Health Risks of Embedded Depleted Uranium Shrapnel on Pregnancy and Offspring Development.	C			\$300,000	\$250,000	\$25,000	\$15,000	\$15,000				\$605,000

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