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NGWRC Guide to Today's Toxic Wars



*Information and Support for those
involved in and affected by the Gulf War I&II*

February 2010 update



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Chapter 1 Introduction

Thank you for your interest in the 7th edition of the National Gulf War Resource Center's (NGWRC) *Self-Help Guide for Gulf War Illnesses*. If you are an ill Gulf War veteran or a family member or friend of such a person, you should find this *Guide* highly useful in understanding research and legislative developments and how to get help and support. We distributed over 80,000 copies of our last edition of the *Guide*, and by now there have been more than 150,000 visits to our website to view the *Guide*. Free copies are available for download



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providing assistance to veterans. Please visit our website, www.ngwrc.org, for constant updates regarding important developments in research and benefits.

I. The NGWRC Mission and Background

The National Gulf War Resource Center (NGWRC) is an international coalition of advocates, organizations, and members providing information, support, and referrals for all those concerned with the complexities of Persian Gulf War issues. In 1995, several grass roots veterans' groups from across the country formed a coalition to get their health issues addressed by Congress, the Department of Defense (DoD), the Veterans Administration (VA) and the media. NGWRC has represented as many as 60 groups in the U.S. and the United Kingdom.

The NGWRC has done much to bring Gulf War issues before Congress and the media, exposing Pentagon and VA policies that have severely impacted veterans and their families. Our most valuable efforts have resulted in legislation that required research and service-connected disabilities for certain conditions associated with Gulf War service. NGWRC does this with the grants and donation we receive from individual and foundations. **WE do not get any government funding.**

II. Summary of Updated Material

Both the VA and DoD now recognize that Gulf War veterans are ill. The health problems exceed those seen in comparable populations. Studies have shown that it is not caused by stress or psychiatric disorders.

Different epidemiological studies consistently show 25-33% of the veterans who served in the Gulf War are ill. This is over and above the control population chosen for every study. It is increasingly evident that at least one important category of illness in Gulf War veterans is neurological in character. There is enough evidence at present to conclude that this line of inquiry represents a potential breakthrough that is aggressively being pursued.

From the Research and Advisory Committee on gulf war illness November 2008 report:

Evidence strongly and consistently indicates that two Gulf War neurotoxic exposures are causally associated with Gulf War illness: 1) use of pyridostigmine bromide (PB) pills, given to protect troops from effects of nerve agents, and 2) pesticide use during deployment. Evidence includes the consistent association of Gulf War illness with PB and pesticides across studies of Gulf War veterans, identified dose-response effects, and research findings in other populations and in animal models.

For several Gulf War exposures, an association with Gulf War illness cannot be ruled out. These include low-level exposure to nerve agents, close proximity to oil well fires, receipt of multiple vaccines, and effects of combinations of Gulf War exposures. There is some evidence supporting a possible association between these exposures and Gulf War illness, but that evidence is inconsistent or limited in important ways.



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The VA has sent a message to its researchers that Gulf War Illness is an area ripe for important discoveries. That there is honor in this work not only to improve the health of veterans of the Gulf War, but to protect American troops and civilians in the future. The message to veterans is that science is finally beginning to unravel the mysteries of Gulf War Illnesses. That the VA will not look at stress as a cause and look for treatment. The NGWRC is committed to pushing for and following new science, medical breakthroughs, and new treatments.

III. Descriptions of Gulf War Illnesses

“Gulf War Illness” has come to be the appropriate and accepted term to describe a collection of overlapping symptoms resulting from one or more exposures to toxic substances (examined in the “Exposures and Research” section of the Guide). This term replaces the former “Gulf War Syndrome” (still expressed by some) which has implied that stress was the primary cause of Gulf War veterans’ ailments. In recent years, the Veterans Administration in particular has departed from the older connotation as conclusions from non-governmental studies and closer analysis of government reports have overtaken denials of real physical problems. In its November 2008 report the Veterans Administration (VA) Research and Advisory Committee (FAC) on Gulf War Illnesses stated that these conditions are very often neurological, not psychological, in nature. See <http://www1.va.gov/rac-gwvi/>

The multiple toxins present in the Gulf War Theater of Operations created considerable confusion among veterans, researchers, and the public, making it difficult to provide a single case definition or effective treatments.

The Kansas Commission on Veterans Affairs completed the only state-sponsored study of Gulf War Illnesses in 2000. The VA’s RAC interim report in 2004 conclusions study agreed with the Kansas study; that Gulf War Illnesses is a major health problem for veterans who deployed to the theater. The Kansas study identified six types of symptom groups associated with Gulf War service:

- A. Neurological (memory, headache, mood, dizziness problems)**
- B. Fatigue and sleep disorders**
- C. Pain in joints and muscles**
- D. Gastrointestinal (diarrhea and nausea)**
- E. Respiratory (persistent cough and wheezing)**
- F. Skin (rashes and other problems)**

This random telephone study of Kansas Gulf War veterans, which was published in the November 15, 2000 issues of *The American Journal of Epidemiology*, noted that deployed Gulf-era veterans were two to five times more likely to report having the above symptoms compared to non-deployed veterans. The tendency of deployed veterans to have multiple symptoms (3-6) on a chronic basis was referred to as “Gulf War Illness.” The Kansas study also showed difference in symptom severity based on branch of service, time in theater, and specific in-theater locations. Additionally, this research demonstrated that health problems from vaccines existed even in those who did not deploy – important information for later-serving service members.



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On November 2, 1994, Congress enacted the “Persian Gulf War Veterans’ Benefits Act,” Title I of the “*Veterans’ Benefits Improvements Act of 1994*,” *Public Law (PL) 103-446*.

The statute added a new section, [38 U.S.C. 1117](#), authorizing the Department of Veterans Affairs (VA) to compensate any Gulf War (GW) veteran suffering from a chronic disability resulting from an undiagnosed illness or combination of undiagnosed illnesses which manifested either

- during active duty in the Southwest Asia theater of operations during the GW,
- or to a degree of 10 percent more within a presumptive period following service in the Southwest Asia theater of operations during the GW

The “*Persian Gulf War Veterans’ Act of 1998*,” *PL 105-277*, authorized VA to compensate GW veterans for diagnosed or undiagnosed disabilities that are determined by VA regulation to warrant a presumption of service connection based on a positive association with exposure to one of the following as a result of GW service:

- a toxic agent
- an environmental or wartime hazard, or
- a preventive medication or vaccine

Note: This statute added [38 U.S.C. 1118](#).

The “*Veterans Education and Benefits Expansion Act of 2001*,” *PL 107-103*, expanded the definition of “qualifying chronic disability” under [38 U.S.C. 1117](#) to include, effective March 1, 2002, not only a disability resulting from an undiagnosed illness but also

- a medically unexplained chronic multi-symptom illness that is defined by a cluster of signs and symptoms, and
- any diagnosed illness that is determined by VA regulation to warrant presumption of service connection

[38 CFR 3.317](#), which implements [38 U.S.C. 1117](#), defines GW service and “qualifying chronic disability,” and provides

- a broad, but non-exclusive, list of signs and symptoms which may be representative of undiagnosed or chronic, multi-symptom illnesses for which compensation may be paid,
- and the presumptive period for service connection

Qualifying chronic disability, under [38 CFR 3.317](#), means a chronic disability resulting from any of the following or any combination of the following:



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- an undiagnosed illness
- a medically unexplained chronic multi-symptom illness, such as chronic fatigue syndrome, fibromyalgia, and irritable bowel syndrome, that is defined by a cluster of signs or symptoms, and/or
- any diagnosed illness that is determined by VA regulation to warrant a presumption of service connection

The presumptive period for manifestation of qualifying chronic disability under [38 CFR 3.317](#)

- begins on the date following last performance of active military, naval, or air service in the Southwest Asia theater of operations during the GW,
- and extends through December 31, 2011 (There is movement to change this)

[38 CFR 3.317](#) specifies the following 13 categories of signs or symptoms that may represent a qualifying chronic disability:

- abnormal weight loss
- cardiovascular signs or symptoms
- fatigue
- gastrointestinal signs or symptoms
- headache
- joint pain
- menstrual disorders
- muscle pain
- neurologic signs or symptoms
- neuropsychological signs or symptoms
- signs or symptoms involving the skin
- signs or symptoms involving the upper and lower respiratory system, and
- sleep disturbances

Notes:

- The list of 13 illness categories is not exclusive.
- Signs or symptoms not represented by one of the listed categories may also qualify for consideration under [38 CFR 3.317](#).

A disability that is affirmatively shown to have resulted from a cause other than GW service may not be compensated under [38 CFR 3.317](#).

To qualify, the claimed disability must be chronic, that is, it *must* have persisted for a period of six months.



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Measure the six-month period of chronicity from the earliest date on which all pertinent evidence establishes that the signs or symptoms of the disability first became manifest.

Note: If a disability is subject to intermittent episodes of improvement and worsening within a six-month period, consider the disability to be chronic.

Dr. Robert Haley

Dr. Robert Haley (<http://www.utsouthwestern.edu/findfac/research/0,2357,12888,00.html>) and colleagues at the University of Texas Southwestern have been conducting epidemiologic, clinical and laboratory research on the “Gulf War Syndrome” and related neurological illnesses in Gulf War veterans since March 1994. The work has been supported by a continuing grant from the Perot Foundation until a contract was done with the VA. In 2009 the VA terminated the contract. The objectives of the research are to define new or unique clinical syndromes among Gulf War veterans, determine their causes, identify areas of damage or dysfunction in the brain and nervous system responsible for the symptoms, develop a cost-effective battery of clinical tests that can diagnose the illness, search for underlying genetic traits that might predispose to the illness, and perform clinical trials of promising treatments.

The initial studies identified three primary syndromes in a Naval Reserve construction battalion (Seabees) that appear to be unique, demonstrated that the syndromes are associated with subtle dysfunction of the brainstem and lower parts of the brain, and found epidemiologic associations between the syndromes and risk factors of exposure to combinations of chemicals in the Gulf War.

Genetic studies have identified a genetic trait (PON1 enzymes) that may explain why some soldiers sustained brain damage from exposure to neurotoxic chemicals while others working alongside them remained well. Most recently, research using magnetic resonance spectroscopy has demonstrated a loss of functioning brain cells in deep brain structures of ill Gulf War veterans. Additional commentaries by Dr. Haley have challenged the government’s stress theory of Gulf War syndrome and findings of no difference in morality, hospitalization and birth defects between Gulf War-deployed and nondeployed military populations, Additional research and publications are in process:

IV. Lack of Data

The failure of the Pentagon and Veterans Administration over the past decade to be candid with veterans about the number and extent of toxic exposures seriously complicated the ability of various interested parties to understand Gulf War Illnesses. At the request of the NGWRC, the DoD established a hotline for veterans to call with information regarding toxic exposures and incidents. The activities of the Pentagon office that administered the hotline (Office of the



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Special Assistant for Gulf War Illnesses) have now been incorporated in a much less visible way under the auspices of DoD's Deployment Health Support Directorate.

The first example of Pentagon non-cooperation that exacerbated suffering for veterans and their families was the constant denials, until 1996, of any health risks from widespread exposure to low levels of chemical agents. After initially indicating exposures for a few dozen veterans, estimates were revised upward every few weeks or months until the Pentagon concluded that 140,000 veterans had been exposed to chemical agents. The second major area of missing data concerned the Pentagon's denial, until 1998, that as many as 436,000 troops were exposed to radioactive depleted uranium contamination. The fact that the Pentagon did not keep adequate records of service members receiving investigational new drugs (Botulinum toxoid and anthrax shots, and pyridostigmine bromide tablets) constitutes the third major area of missing data problems. For other exposures such as oil well fires, pesticides, and endemic diseases, the Pentagon failed to record the type, amount, and length of time service members faced these toxicities.

V. Gulf War Veterans Information System

Department of Veterans Affairs established the "Gulf War Veterans Information System" (GWVIS) in 1997 to identify and monitor benefit use among Gulf War veterans.

VA's quarterly GWVIS reports are produced in compliance with the "Veterans Health Care Act of 1992" (Public Law 102-585). The National Gulf War Resource Center supports this law and thanks VA for producing these highly reliable reports.

In 2009 the new Chief of Staff for the VA reported the numbers under this system was wrong. I is working with a new VA taskforce if fix this report and many of the problems that the gulf war veterans have.

Veterans from the United Kingdom, Canada, Australia, the Czech Republic, and other coalition countries also report Gulf War veterans' illnesses. However, there are no official statistics published by other governments.

A. Civilians

Civilians present during the Gulf War had many of the same exposures as military personnel to chemical, biological and radiation contamination, endemic infectious diseases, and other toxic materials. Civilian participants include journalists, DOD contractors (such as logistics assistants representing the defense industry), Red Cross workers, and Iraqi and Kuwaiti civilians living in the area.

Other civilians possibly exposed include those at or near Coalition or U.S. military bases or contract facilities who cleaned and repaired returned tanks and airplanes, repackaged returned parachutes, sorted, cleaned, repaired and painted returned equipment, and removed clothing and equipment from the evacuated, injured and dead. The government's response to ill civilians has been very slow. Although some may be eligible for workers' compensation or Social Security



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benefits, the evidence needed to show exposure to contaminated personnel or equipment is difficult to provide, and scientific studies relating to civilian participants is still almost non-existent. The NGWRC actively shares information with deployed civilians to obtain answers and medical care, and we continue to press for research into the health problems reported by civilians.

B. Family and Close Living Contacts

A survey of 1,200 ill veterans performed in 1994 by former U.S. Senator Donald Reigle reported that 77% of spouses and 68% of children born after the war were experiencing Gulf War Illness symptoms or birth defects. Other surveys indicated similar disturbing trends. While these are not scientific studies, these surveys show an incidence of illness among family members of ill veterans.

The Association of Birth Defect Children (ABDC) is conducting a research study on this issue. Those with information regarding a Gulf War veteran's child with birth defects should contact ABDC in Florida at 407-566-8304. <http://www.birthdefects.org/>

A possible source of problems for families and close contacts may have been exposure to the veteran's equipment contaminated during Gulf War service. Another risk factor may be infectious diseases contracted by the veteran while overseas.

Female spouses of Gulf War veterans have reported a high rate of miscarriages, menstrual difficulties, reproductive problems, and burning semen during intercourse. Several other studies are currently being conducted on birth defect rates and burning semen.

VI. Current Concerns

The NGWRC expressed concern for reported mysterious illness coming out of Iraq.

We were told that DoD would send teams to Iraq to pinpoint the illness and report findings to the families of the soldiers who have recently passed away. The NGWRC is working behind the scenes with DoD and other agencies to help the family get all the details.

With the work of the NGWRC, and others, we got the VA to look at new research in to Traumatic Brain Injury (TBI). The latest report on TBI is now on the Institute of Medicine (IOM) website. <http://www.iom.edu/Reports/2008/Gulf-War-and-Health-Volume-7-Long-term-Consequences-of-Traumatic-Brain-Injury.aspx>

The VA is also asking that the OIF veterans to get on the VA's Gulf War Registry Exam. There is also a DU exam every veteran needs to get on if they feel they were exposed to DU.



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TRAUMATIC BRAIN INJURY

Damage to the brain after trauma (for example, a blow or jolt to the head, a penetrating head injury, or exposure to an external energy source) is referred to as traumatic brain injury (TBI). TBI may be open (penetrating) or closed and is categorized as mild, moderate, or severe, depending on the clinical presentation. A brain injury that results from something passing through the skull, such as a bullet discharged from a gun or fragments from a missile, would be referred to as a penetrating or open head injury. A brain injury that results from something hitting the head or from the head hitting something forcefully, such as the dashboard of a car, is referred to as a nonpenetrating or closed head injury. According to the Centers for Disease Control and Prevention, mild TBI is manifested as a brief change in mental status or unconsciousness, whereas severe TBI results in an extended period of unconsciousness or amnesia. According to the World Health Organization Collaborating Task Force on Mild Traumatic Brain Injury, mild TBI might also be referred to as a concussion, a minor brain injury, a mild head injury, or a minor head injury. Furthermore, it has been noted that the term concussion, often used to indicate a mild or moderate brain injury, refers to a disturbance in neurologic function caused by the mechanical force of rapid acceleration or deceleration, and can include varied symptoms and severity.

OPERATION ENDURING FREEDOM AND OPERATION IRAQI FREEDOM

Throughout OEF and OIF, explosive devices have become more powerful, their detonation systems more creative, and their additives more devastating. According to the Department of Defense (DoD) Personnel and Procurement Statistics, 75% of all US military casualties in OEF and OIF are caused by explosive weaponry. As of January 2008, DOD reported that over 5,500 soldiers had suffered TBIs. As a continuing threat to our troops, blast injury, especially blast-induced neurotrauma (BINT), has been called the signature wound of the war in Iraq. In both civilian and military environments, exposure to a blast might cause instant death, injuries with immediate manifestation of symptoms, or injuries with delayed manifestation. BINT is a complex type of TBI that features closed (blunt) head injury that may be accompanied by polytrauma. The pathobiology of BINT parallels that seen in TBI, including secondary injury cascades that result in vasogenic and cytotoxic edema, emerging hemorrhagic lesions, metabolic disturbances, compromise of neural and glial structures that leads to cell death, and diffuse axonal injury in cases of sudden brain acceleration and deceleration.

As of June 30, 2008, there had been about 1.64 million US deployments as part of OEF and OIF and 4,128 US troop fatalities. The ratio of wounded troops to troop fatalities, 7.37:1, is higher than that in previous military conflicts, probably because of the widespread use of body armor, improved battlefield medical response, and advances in aeromedical evacuation. Despite those improvements, military personnel continue to be critically wounded, and TBI continues to be a source of concern. Furthermore, there is an outdated dogma that neurologic impairments caused by primary blasts are rare because the skull provides excellent protection for the brain that is, that brain injury is a consequence solely of air emboli in cerebral blood vessels. Despite recent clinical findings, experimental findings, and experience in contemporary military operations that suggest that substantial short-term and long-term neurologic deficits can be



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caused by blast exposure without a direct blow to the head, the old belief prevails in the professional literature and in civilian clinical practice. Indeed, information on blast injuries consists mainly of the consequences of secondary and tertiary blast mechanisms. Although BINT is one cause of in-theater injuries, it is often underdiagnosed. Its complex clinical syndrome is caused by the combination of all blast effects. It is noteworthy that blast injuries are usually manifested in a form of polytrauma, that is, injury involving multiple organs or organ systems.

Throughout Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), explosive devices have become more powerful, their detonation systems more creative, and their additives more devastating. According to the Department of Defense (DoD) Personnel and Procurement Statistics, 75% of all US military casualties in OEF and OIF are caused by explosive weaponry (DMDC, 2008). As of January 2008, DoD reported that over 5,500 soldiers had suffered TBIs (CRS, 2008). As a continuing threat to troops, blast injury, especially BINT, has been called the signature wound of the war in Iraq. Explosive devices are also used against civilians. Indeed, the use of explosive weaponry is the most common cause of casualties in terrorist incidents. Terrorists increasingly use suicidal-homicidal bombers that deliberately accompany the explosive device, often wearing it, to ensure the maximal harm. The bombers walk or drive into buses, subways, residential areas, shopping malls, and government buildings.