



# GULF WAR ILLNESS

## A GUIDE FOR VETERAN HEALTH CARE PROVIDERS

### WHAT IS GULF WAR ILLNESS?

Gulf War Illness (GWI) is a term that refers to a group of unexplained or ill-defined chronic symptoms found in Veterans deployed to the Persian Gulf during Operation Desert Storm/ Operation Desert Shield (1990-1991). GWI falls under the umbrella of chronic multisystem illness (CMI). Understanding GWI and effectively evaluating, diagnosing, and managing associated health concerns and medically unexplained conditions are critical components of delivering optimal care to affected Veterans.

### WHAT ARE THE SYMPTOMS OF GULF WAR ILLNESS?

Symptoms of GWI vary; there is not a single consistent pattern of symptoms. This may make it challenging for healthcare providers to recognize and treat it. The most common symptoms of GWI include:

- Fatigue
- Muscle and joint pain
- Cognitive trouble
- Skin rashes
- Abdominal discomfort/ bowel changes
- Headaches
- Shortness of breath
- Sleep disturbances

Several studies showed that about one-third of Gulf War Veterans (GWV) have GWI.

### WHAT ARE THE POSSIBLE CAUSES OF GULF WAR ILLNESS?

Despite much research, the causes of GWI remain unclear. A number of possible causes of GWI include:

- Immune dysfunction
- Nerve dysfunction
- Mitochondrial dysfunction
- A genetic and environmental exposure interaction

During deployment, many service members encountered a variety of different exposures that may place them at risk for adverse health effects. Exposures specific for GWI include pyridostigmine bromide tablets (taken as a preventative measure), burning oil well fires, and the Anthrax Vaccination. There have been no clear or consistent links found between specific exposures and GWI. If a Veteran is concerned about the possible relationship between their symptoms and deployment exposure, it may be worthwhile to conduct a comprehensive exposure assessment (see side bar).

While several mental health conditions are often comorbid with GWI, GWI is not considered a mental health condition nor is GWI considered to be a result of malingering.

### ★ IN CLINICAL PRACTICE,

the first questions a provider needs to ask is about the Veteran's military and deployment history including specific locations and times of deployment and possible exposures of concern. Providers can suggest further evaluation with an environmental health clinician or expert in occupational and environmental exposures if they have specific exposure concerns. A directory of Environmental Health Coordinators is available here:

<https://www.publichealth.va.gov/exposures/coordinators.asp>

### DEFINING GULF WAR ILLNESS

In 2015, the Institute of Medicine (now the National Academy of Medicine) met to discuss the evidence supporting various GWI case definitions. Two definitions were recommended for research purposes. These definitions can also inform clinical encounters with Veterans to determine if a Veteran meets criteria for a GWI diagnosis.

The CDC Definition is considered the more sensitive of the two





definitions and includes: At least one symptom (of at least 6 months duration) from at least two categories:

- Fatigue
- Musculoskeletal
- Mood and Cognition

The Kansas Definition is the more specific and includes: Moderately severe or multiple symptoms in 3 of 6 complexes:

- Fatigue/Sleep problems
- Pain symptoms
- Neurologic/Cognitive/Mood
- Gastrointestinal problems
- Respiratory problems
- Skin problems
- Symptoms cannot be explained by another medical condition
- No condition that would impair ability to report symptoms
- Symptoms must have started during or after deployment

More recently, VA has formed a working group to develop a single, clinical case definition of GWI.

**Until a single case definition exists, a clinical diagnosis of GWI should reflect the following:**

- **The diagnosis must refer specifically to Veterans deployed to combat theatre of operations in support of Operation Desert Shield and Operation Desert Storm, between years 1990-1991.**
- **The Veteran's symptoms cannot be better explained by another medical condition, including a psychiatric condition. If the Veteran has comorbid conditions with overlapping symptoms, such as Post Traumatic Stress Disorder (PTSD) or heart disease, GWI can be diagnosed if the symptoms are in excess of what is expected from the comorbid condition.**
- **The Veteran's symptoms must include at least two or more chronic symptoms in different body systems that occurred during or shortly after the deployment, and persist or regularly occur since then.**

### WHAT IS THE TREATMENT FOR GULF WAR ILLNESS?

GWI falls under a broader umbrella term for a constellation of chronic, unexplained symptoms referred to as CMI and therefore treatment is similar. CMI is an umbrella term which conditions include:

- Chronic Fatigue Syndrome, a condition of long-term and severe fatigue and post-exertional malaise that is not relieved by rest and is not directly caused by other conditions.
- Fibromyalgia, a condition characterized by widespread muscle pain. Other symptoms may include sleep disruption or unrefreshing sleep, headache, and memory problems.
- Functional gastrointestinal disorders, a group of conditions marked by chronic or recurrent symptoms related to any part of the gastrointestinal tract. Examples include irritable bowel syndrome (IBS), functional dyspepsia, and functional abdominal pain syndrome.
- Undiagnosed illnesses with symptoms that may include but are not limited to: abnormal weight loss, fatigue, cardiovascular disease, muscle and joint pain, headache, menstrual disorders, neurological and psychological problems, skin conditions, respiratory disorders, and sleep disturbances.

**In 2014, the Department of Veterans Affairs and Department of Defense (DoD) released clinical practice guidelines for healthcare providers caring for Veterans with CMI. These guidelines can be useful for the evaluation and management of GWI, as well.** The guidelines outline key steps that providers can follow to ensure a systematic approach is followed that addresses critical factors at each of the major decision points. Specifically the Clinical Practice Guidelines emphasizes an ordered sequence of steps of care, decisions to be considered, and action to be taken. More information and answers to frequently asked questions are provided at the links below.





- **CMI CPG Algorithm**  
<https://www.qmo.amedd.army.mil/mus/CPGSummary2014.pdf>
- **CMI Pocket Card**  
<https://www.qmo.amedd.army.mil/mus/CMIPOCKET20150715.pdf>
- **MI Frequently Asked Questions**  
[https://www.qmo.amedd.army.mil/mus/CMI\\_FAQ%20Sheet\\_Final.pdf](https://www.qmo.amedd.army.mil/mus/CMI_FAQ%20Sheet_Final.pdf)

★ **Refer Gulf War Veteran patients seeking information on health benefits related to GWI to the Veteran’s Benefits Administration to check eligibility. There is no International Classification of Diseases (ICD) code that is recognized automatically for service-connected benefits related to GWI.**

**PRINCIPLES OF CARE MANAGEMENT**

Several evaluation strategies and diagnostic tests may help determine if a Veteran meets the criteria for a diagnosis of GWI. During the evaluation and diagnosis stages providers should consider the following principles:

- The evaluation must be individualized to the Veteran’s presenting symptoms, concerns, and history based on clinical judgment.
- Medically explainable causes for the symptoms must be considered and appropriately evaluated.
- Sometimes, it is difficult to diagnose GWI if there are co-occurring and diagnosed medical health conditions that are not well controlled. For this reason, it is important that recognized diagnoses are treated and managed.
- The presence of other medically explained illnesses should not preclude patients from receiving a diagnosis of GWI except when all symptoms can be accounted for by these other illnesses. These comorbidities should be diagnosed and treated when caring for patients.
- Risk Communication is essential and requires the provider to listen carefully and

address Veteran concerns so that a shared treatment plan can be put into place.

- Take a holistic perspective and do not dichotomize Veterans medically unexplained symptoms as simply physiological or psychological symptoms. Often the etiology is more complex and multi-factorial.

★ **Learn more about risk communication and its importance in provider/patient interactions:**  
<https://www.publichealth.va.gov/docs/vhi/caring-for-gulf-war-veterans-vhi.pdf>

Once you determine that a Veteran has GWI, the patient should be treated symptomatically. The focus should be on addressing the specific symptoms of individual Veteran patients and developing management strategies designed to optimize overall quality of life. Because they’re generally lower risk, non-pharmacologic treatments are recommended before considering pharmacological treatment. Non-pharmacologic approaches could include recommending a low impact, graded exercise program or a trial of cognitive-behavioral therapy (CBT). CBT does not alter the symptoms directly, but may help patients with symptoms lead more productive lives by teaching them active management and coping skills. Each Veteran who has symptoms of GWI should receive individualized recommendations for specific symptom management, as what works well for one Veteran may not work well for another. It is also important to assess the response to any treatment. Care coordination is a central part of managing chronic conditions, such as GWI.

★ **VA’S GULF WAR REGISTRY HEALTH EXAM**

Encourage GWV patients to participate in the VA’s Gulf War Registry Health Exam to help identify health issues related to GWI and assist the VA in understanding and responding to these health problems more effectively. For more information:  
<https://www.publichealth.va.gov/exposures/gulfwar/benefits/registry-exam.asp>





**FUTURE OF CARING FOR GWI**

VA continues to investigate the best approaches to Veteran care and to conduct additional research into GWI and CMI.

**RESOURCE LINKS**

- **Department of Veterans Affairs Environmental Exposures Pocket Card**  
<https://www.publichealth.va.gov/docs/exposures/environmental-exposure-pocket-card.pdf>
- **WRIISC Website**  
<https://www.WarRelatedIllness.va.gov>
- **Risk Communication (EPA.gov)**  
<https://www.epa.gov/risk/risk-communication>
- **Office of Public Health Website**  
<https://www.publichealth.va.gov>
- **Gulf War Newsletter – Winter 2016**  
<https://www.publichealth.va.gov/exposures/publications/gulf-war/gulf-war-winter-2016>
- **Exercise To Help Manage Chronic Pain and/or Fatigue**  
<https://www.warrelatedillness.va.gov/education/factsheets/exercise-to-manage-pain.pdf>
- **Cognitive Behavioral Therapy for Chronic Pain**  
[https://www.va.gov/PAINMANAGEMENT/docs/CBT-CP\\_Therapist\\_Manual.pdf](https://www.va.gov/PAINMANAGEMENT/docs/CBT-CP_Therapist_Manual.pdf)
- **VHA DIRECTIVE 1325 on the Gulf War Registry**  
[https://www.va.gov/VHAPublications/ViewPublication.asp?pub\\_ID=5416](https://www.va.gov/VHAPublications/ViewPublication.asp?pub_ID=5416)
- **IOM Reports on Gulf War and Health**  
[http://www.nationalacademies.org/hmd/Global/Search.aspx?q=gulf+war&output=xaml\\_no\\_dtd&client=iom\\_frontend&site=iom&proxyreload=1](http://www.nationalacademies.org/hmd/Global/Search.aspx?q=gulf+war&output=xaml_no_dtd&client=iom_frontend&site=iom&proxyreload=1)

**WRIISC On-Demand Learning Modules:**

- **Module 1: Assessing Deployment Related Environmental Exposures**
  - TMS: VA 33195  
[https://www.tms.va.gov/learning/user/deeplink\\_redirect.jsp?linkId=ITEM\\_DETAILS&componentID=33195&componentTypeID=VA&revisionDate=1490724660000](https://www.tms.va.gov/learning/user/deeplink_redirect.jsp?linkId=ITEM_DETAILS&componentID=33195&componentTypeID=VA&revisionDate=1490724660000)
  - TRAIN ID: 1070234  
<https://www.train.org/main/course/1070234/>
- **Module 2: Airborne Hazards**
  - TMS: VA 33405  
[https://www.tms.va.gov/learning/user/deeplink\\_redirect.jsp?linkId=ITEM\\_DETAILS&componentID=33405&componentTypeID=VA&revisionDate=1493122500000](https://www.tms.va.gov/learning/user/deeplink_redirect.jsp?linkId=ITEM_DETAILS&componentID=33405&componentTypeID=VA&revisionDate=1493122500000)
  - TRAIN: ID: 1070422  
<https://vha.train.org/main/course/1070422/>
- **Module 3: Gulf War Illness**
  - TMS: VA 34572  
[https://www.tms.va.gov/learning/user/deeplink.do?linkId=ITEM\\_DETAILS&componentTypeID=VA&revisionDate=1509012720000&O\\_WASP\\_CSRFTOKEN=OKEI-5GHL-6VUU-1QGO-H41J-HEKK-CXA8-VUML&componentID=34572](https://www.tms.va.gov/learning/user/deeplink.do?linkId=ITEM_DETAILS&componentTypeID=VA&revisionDate=1509012720000&O_WASP_CSRFTOKEN=OKEI-5GHL-6VUU-1QGO-H41J-HEKK-CXA8-VUML&componentID=34572)
  - TRAIN: ID: 1074205  
<https://www.train.org/main/course/1074205/>

This document was developed by the War Related Illness & Injury Study Center (WRIISC)  
Office of Public Health (OPH)  
Department of Veterans Affairs (VA)  
Last Updated: April 2018

