

GULF WAR ILLNESS

INTRODUCTION

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). Several studies showed that about one-third of Gulf War Veterans have GWI.[1] GWI is often described as a chronic multisymptom illness impacting multiple systems and having tremendous impact on quality of life and functioning.

POSSIBLE CAUSES

Despite increasing research, the cause of GWI remains unclear and a number of possible causes continue to be explored. While the etiology of GWI is still debated and may be linked to military environmental exposures during service, as many as 250,000 former service members may suffer from GWI, making the need for treatment urgent. Veterans can work with a healthcare provider or see an [environmental health coordinator](#) or expert in occupational and environmental exposures if they have specific exposure concerns.

SYMPTOMS OF GULF WAR ILLNESS

Symptoms of GWI vary among those who have the condition. Symptom presentation can also vary within individuals, with symptoms flaring or subsiding over time. This may make it challenging for healthcare providers to recognize and treat it and brings uncertainty to the lives of those impacted by the illness. The most common symptoms of GWI include:

- Fatigue
- Muscle and joint pain
- Cognitive difficulty (trouble thinking clearly)
- Skin rashes
- Abdominal (belly) discomfort
- Bowel changes
- Headaches
- Shortness of breath
- Sleep disturbances

TREATMENT OPTIONS

GWI falls under a broad term for a group of chronic, unexplained symptoms called Chronic Multi-Symptom Illness (CMI). In 2021, the Department of Veterans Affairs (VA) and Department of Defense (DoD) released [new guidelines](#) for healthcare providers caring for Veterans with CMI. These guidelines help healthcare providers identify, manage, and treat GWI. Veterans with concerns about GWI can learn more about the guidelines by viewing the VA/DoD Clinical Practice Guideline for the Management of CMI [Patient Summary](#) and

US Army Medical Department Office of Quality Management's [Chronic Multisymptom Illness Clinical Practice Guideline Fact Sheet](#).

The focus of treatment should be on improving quality of life and functioning. Nonpharmacological approaches, including acupuncture, Cognitive Behavioral Therapy (CBT), mindfulness-based stress reduction (MBSR), tai chi, and yoga, have shown promising outcomes for GWI.[4-19] These approaches are further discussed below. Additionally, a health coaching protocol for GWI has recently been developed.[1] Notably, many of these approaches are aligned with the Whole Health framework and there has been increased interest in using this approach in the care of Veterans with GWI. Care coordination is also a central part of managing chronic conditions like GWI. As always, it is important for Veterans to work with their healthcare team to monitor their response to any treatment.

ACUPUNCTURE

Acupuncture is one of several techniques that make up the system of care provided by those trained in traditional medicine from China and other Asian countries. Acupuncture may refer to this whole system approach to health care or define the technique of acupuncture treatment. Most frequently we think of acupuncture as the penetration of thin needles into the body at acupuncture points to effect a change. Research has shown that acupuncture effectively treats a number of GWI symptoms, including pain, anxiety, and depression.[7,8] Additionally, preliminary research has revealed that individualized acupuncture treatment of sufficient dose (acupuncture treatments twice per week for 6 months) offers significant relief of physical disability and pain for veterans with Gulf War Illness.[9] Preliminary research also indicates that acupuncture may be effective in the management of complex conditions that share a similar cluster of symptoms of pain, sleep, and mood problems such as GWI and fibromyalgia.[10]

For more information, refer to the [Acupuncture](#) Whole Health Tool and the VA [Complementary and Integrative Health](#) page.

COGNITIVE BEHAVIORAL THERAPY (CBT)

Cognitive Behavioral Therapy (CBT) is a form of psychotherapy that addresses unhelpful cognitive and behavioral patterns to treat individuals with a variety of mental health conditions. An abundance of research has shown the effectiveness of CBT for a wide range of medical conditions.[5] Although GWI is not a mental health condition, CBT is recommended to support managing and coping with the impact of GWI on Veterans' lives. A large multi-arm study examining the effectiveness of CBT and exercise for GWI found moderate-strength evidence of benefit with CBT and exercise alone and in combination.[6]

For more information, refer to the [Working With Our Thinking, Non-Drug Approaches to Chronic Pain, Goal Setting for Pain Rehabilitation](#), and [Working With Pain-Related Thoughts](#) Whole Health Tools.

MINDFULNESS-BASED STRESS REDUCTION

Mindfulness-Based Stress Reduction (MBSR) is composed of two main components, mindfulness meditation and incorporates mindful movements. Although originally designed for stress management, MBSR is used to support a variety of illnesses such as, chronic pain, cancer, diabetes mellitus, hypertension, skin and immune disorders.[22] A systematic review revealed that MBSR improved pain, cognitive functioning, fatigue, depression, and posttraumatic stress disorder (PTSD) among Veterans with GWI. The review classified the current evidence as low-strength so more research is needed, but initial signals are positive.[23]

For more information, refer to the [Meditation](#) Whole Health Tool and the VA [Complementary and Integrative Health](#) page.

TAI CHI

Tai Chi is a mind-body exercise combining slow-flowing intentional movements with breathing, awareness, and visualization. Rooted in the Asian traditions of martial arts, Chinese medicine and philosophy, Tai Chi includes physical, cognitive, social, relaxation and meditative components.[11-13] To date, research has shown that Tai Chi can improve both physical and mental health, including cardiorespiratory health, neurological and immune function, musculoskeletal pain, anxiety, depression, fatigue, sleep and health-related quality of life.[14-18] Due to its wide range of health benefits, Tai Chi has been considered a promising intervention for improving symptoms and health outcomes for Veterans with GWI. A recent umbrella review revealed that Tai Chi may have distinct therapeutic effects on the major prevalent symptoms of GWI, specifically: 1) fatigue and sleep problems; 2) psychological health; 3) cognitive function; 4) chronic pain; and 5) respiratory function.[19]

For more information, refer to the [Tai Chi and Qi Gong](#) Whole Health Tool and the VA [Complementary and Integrative Health](#) page.

YOGA

Yoga is a mind and body practice with origins in ancient Indian philosophy. The various styles of yoga typically combine physical postures, breathing techniques, and meditation or relaxation. Research has shown that yoga has positive effect in treating nonspecific chronic low back pain.[20] Preliminary research suggests that yoga may be an effective treatment for core Gulf War Illness symptoms of pain and fatigue.[21]

For more information, refer to the [Yoga](#) Whole Health Tool and the VA [Complementary and Integrative Health](#) page.

LOOKING AHEAD

The VA continues to look for the best approaches to Veteran care and research into GWI and CMI continues. For example, there continues to be interest and research of the Whole Health approach for Veterans with GWI. Veteran participation in the VA's Gulf War Registry Health Exam helps identify health issues related to GWI. It also assists the VA in understanding and responding to these health problems more effectively. For more information, visit the [VA's Gulf War Registry Health Exam](#) page.

RESOURCES

For additional resources on GWI and CMI from the VA's Office of Patient Care Services/Public Health and War Related Illness and Injury Study Center, refer to the following list:

- [Benefits Overview for Gulf War Veterans' Illnesses](#)
- [Exercise to Help Manage Chronic Pain and/or Fatigue Fact Sheet](#)
- [Gulf War Illnesses linked to Southwest Asia Service](#)
- [Gulf War Veterans' Illnesses](#)
- [Gulf War Veterans' Medically Unexplained Illnesses](#)
- [Military Exposures and Your Health Newsletters](#)
- [PACT Act Information](#)
- [The Management of Chronic Multisymptom Illness VA/DoD Clinical Practice Guidelines](#)
- [VA Public Health Website](#)
- [VA War Related Illness and Injury Study Center](#)

RESOURCE LINKS

- [VA Environmental Health Coordinator Directory:](#)
<https://www.publichealth.va.gov/exposures/coordinators.asp>
- [The Management of Chronic Multisymptom Illness \(CMI\) 2021:](#)
<https://www.healthquality.va.gov/guidelines/mr/cmi/>
- [VA/DoD Clinical Practice Guideline for the Management of Chronic Multisymptom Illness Patient Summary:](#)
<https://www.healthquality.va.gov/guidelines/MR/cmi/VADoDCMIPatientSummary508.pdf>
- [US Army Medical Department Office of Quality Management's Chronic Multisymptom Illness Clinical Practice Guideline Fact Sheet:](#)
https://www.qmo.amedd.army.mil/mus/CMI_FAQ%20Sheet_Final.pdf
- [Working With Our Thinking:](#)
<https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Working-with-Our-Thinking.pdf>

- [Non-Drug Approaches to Chronic Pain:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Non-Drug-Approaches-to-Chronic-Pain.pdf)
<https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Non-Drug-Approaches-to-Chronic-Pain.pdf>
- [Goal Setting for Pain Rehabilitation:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Goal-Setting-for-Pain-Rehab.pdf)
<https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Goal-Setting-for-Pain-Rehab.pdf>
- [Working with Pain-Related Thoughts:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Working-with-Pain-Related-Thoughts.pdf)
<https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Working-with-Pain-Related-Thoughts.pdf>
- [Acupuncture:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Acupuncture.pdf)
<https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Acupuncture.pdf>
- [Tai Chi and Qi Gong:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Tai-Chi-and-Qi-Gong.pdf) <https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Tai-Chi-and-Qi-Gong.pdf>
- [Yoga:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Yoga.pdf) <https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Yoga.pdf>
- [Meditation:](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Meditation.pdf) <https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Meditation.pdf>

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“Gulf War Illness” was written by Amanda Hull, PhD through collaboration with the [VA War Related Illness and Injury Study Center](#). (2023)

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