



Presumptive Disability for Nine Infectious Diseases Related to Military Service in Southwest Asia (1990-present): Potential Long-Term Health Outcomes

FACT SHEET 64-022-0312

Purpose: This U.S. Army Public Health Command fact sheet provides information to Service members and their Health Care Providers regarding nine infectious diseases and associated long-term health effects for which eligible Veterans may receive Department of Veterans Affairs (VA) [health care benefits](#) and [disability compensation](#). These diseases include: [Brucellosis](#), [Campylobacter jejuni infection](#), [Visceral leishmaniasis](#), [Malaria](#), [Q fever \(Coxiella burnetii\)](#), [Salmonella \(nontyphoid\) infection](#), [Shigella infection](#), [Mycobacterium tuberculosis](#), and [West Nile virus infection](#). **This factsheet focuses on the nine specific diseases and their respective associated long-term health outcomes.**

Background: The VA and the Institute of Medicine (IOM) of the National Academy of Sciences partner to scientifically review evidence for possible connections between Gulf War Veterans' illnesses and exposure to environmental agents during military service. Based on the IOM Report, [Gulf War and Health: Volume 5 Infectious Disease](#), the Secretary of VA has established a presumption of service connection for the following nine infectious diseases related to military service in [Southwest Asia theater of operations](#) starting with first Gulf War in August 2, 1990 through Operation Enduring Freedom (OEF), and Operation Iraqi Freedom (OIF) (2003-2010), and Operation New Dawn (2010 and continuing). Eligible Veterans may receive [disability compensation](#) and [health care](#) for these diseases. Veterans must have the diseases within the specified time frames **and** have a current disability as a result of that disease in order to receive [disability compensation](#). VA's [final regulation](#) took effect September 29, 2010.

- **Brucellosis** - A bacterial disease with symptoms such as profuse sweating and joint and muscle pain. The illness may be chronic and persist for years. It must be at least 10% disabling within 1 year from the date of military separation.
- **Campylobacter Jejuni infection**- A disease with symptoms such as abdominal pain, diarrhea, and fever. It must be at least 10% disabling within 1 year from the date of military separation.
- **Visceral Leishmaniasis** - A parasitic disease characterized by symptoms such as fever, weight loss, enlargement of the spleen and liver, and anemia. The condition may be fatal if left untreated. (No specified time frame requirement.)
- **Malaria** - An infectious disease caused by a parasite; symptoms include chills, fever, and sweats. It must be at least 10% disabling within 1 year from the date of military separation or at a time when medical evidence indicates that the incubation period began during a qualifying period of military service.
- **Coxiella Burnetii infection (Q Fever)** - A bacterial disease with symptoms such as fever, severe headache, and gastrointestinal problems such as nausea and diarrhea. In chronic cases, the illness may cause inflammation of the heart. It must be at least 10% disabling within 1 year from the date of military separation.
- **Salmonella (nontyphoid) infection** - A disease characterized by symptoms such as nausea, vomiting, and diarrhea. It must be at least 10% disabling within 1 year from the date of military separation.
- **Shigella infection** - A disease characterized by symptoms such as fever, nausea, vomiting, and diarrhea. It must be at least 10% disabling within 1 year from the date of military separation.
- **Mycobacterium tuberculosis** – A disease that primarily affects the lungs and causes symptoms such as chest pain, persistent cough (sometimes bloody), weight loss and fever. (No specified time frame requirement.)
- **West Nile Virus infection** - A disease spread by mosquitoes characterized by symptoms such as fever, headache, muscle pain or weakness, nausea, and vomiting. Symptoms may range from mild to severe. It must be at least 10% disabling within 1 year from the date of military separation.

Basis of Selection of the Nine Infectious Diseases

According to the IOM Report, "Only 10% of the roughly 90 infectious diseases endemic in Southwest and South-central Asia are likely to pose a long-term health risk to exposed U.S. military personnel. ...[T]he long-term adverse health outcomes of most diseases endemic in the region would usually become apparent during or immediately after the acute illness, and many of the health outcomes are rare. However, nine of the infectious diseases meet the inclusion criteria outlined in Box 5.1 (below)." Those nine diseases and their associated long-term adverse health outcomes are listed on the following page.

BOX 5.1 Inclusion Criteria

The IOM committee used these questions to evaluate the dozens of infectious diseases endemic in Southwest and South-central Asia or commonly found among troops in wartime (Table 2.1). If the answer to every question was yes, a disease met the criteria for in-depth evaluation.

1. Was the infection or disease diagnosed in U.S. troops in appropriate temporal relationship to deployment to the Gulf War, Operation Enduring Freedom, or Operation Iraqi Freedom, given the natural history of the disease?
2. Is the risk of contracting the disease during deployment in Southwest or South-central Asia equal to or greater than the risk of contracting it in the United States?
3. Does the disease have a known or suspected long-term adverse health outcome?
4. Would there be a delay between the infection or the end of the acute illness and the onset of the long-term adverse health outcome?

Potential Long-Term Adverse Health Outcomes of the Nine Infectious Diseases

Following the paradigm of past IOM Committees on Gulf War and Health, the committee determined the strength of association between each infection and specific long-term adverse health outcomes in humans. For every health outcome (listed below in Table 1), there is *limited or suggestive* evidence of an association, *sufficient* evidence of an association, or *sufficient* evidence of a *causal* relationship with the infectious disease. [Several other delayed long-term adverse health outcomes of the nine diseases are not reviewed here; the committee determined that there is inadequate or insufficient evidence of an association between these health outcomes and the infectious diseases.] To reach its conclusions, the committee assessed the available evidence published in the biomedical literature about the long-term adverse outcomes of the diseases on human health. [Reference: IOM Gulf War and Health: Volume 5. Infectious Diseases <http://www.iom.edu/Reports/2006/Gulf-War-and-Health-Volume-5-Infectious-Disease.aspx>]

Table 1. The Nine Infectious Diseases Studied for Strength of Association with Specific Long-Term Adverse Health Outcomes:

<u>Infectious Disease</u>	<u>Long-Term Adverse Health Outcomes Evaluated for Strength of Association</u>
Brucellosis	Arthritis Cardiovascular system infections Ophthalmologic manifestations Genito-urinary tract manifestations Hepatic abnormalities Neurologic manifestations Respiratory system infections Other symptoms (fatigue, inattention, amnesia, depression)
<i>Campylobacter</i> infection	Guillain-Barré syndrome Reactive arthritis Uveitis
Leishmaniasis	Delayed presentation of visceral leishmaniasis (VL) ^a Reactivation of VL in the context of future immunosuppression Post-kala-azar dermal leishmaniasis
Malaria	Clinical relapse Late presentation or recrudescence of disease Hematologic manifestations Ophthalmologic manifestations Nephrologic disease Neurologic and neuropsychiatric disease
<i>Coxiella burnetii</i> infection (Q fever)	Chronic hepatitis Endocarditis Osteomyelitis Post-Q fever fatigue syndrome Vascular infection
<i>Salmonella</i> (nontyphoid) infection	Reactive arthritis
<i>Shigella</i> infection	Hemolytic uremic syndrome Reactive arthritis
Tuberculosis ^b	Activation of latent tuberculosis infection Late manifestations of pulmonary and extrapulmonary tuberculosis
West Nile virus infection ^c	Persistent deficits in cognition, movement, and daily functioning

^a Viscerotropic leishmaniasis is considered a subset of VL for the purposes of this discussion.

^b Tuberculosis (TB) does not meet inclusion criterion 1 (Box 5.1), because there have been no published reports of military personnel who developed active TB while deployed to the Gulf War, Operation Enduring Freedom (OEF), or Operation Iraqi Freedom (OIF). However, in a presentation to the committee, Kilpatrick (2005) indicated that 2.5% of military personnel deployed to OEF and OIF and given predeployment and postdeployment skin tests for TB seroconverted during their deployment; that is, they acquired new TB infections. Immunocompetent people who are infected with TB have a 10% lifetime risk of developing active TB; this risk increases dramatically in people who become immunosuppressed. Therefore, the committee decided to evaluate TB in depth.

^c West Nile virus infection does not meet inclusion criterion 4 (Box 5.1), because its health outcomes usually are manifested at the time of the acute illness. However, dramatic changes in the epidemiology of West Nile virus infection since the middle 1990s led the committee to decide to review it in depth.

Additional Information from the Veterans Administration:

This fact sheet is based on information provided by the VA located at: http://www.publichealth.va.gov/exposures/gulfwar/infectious_diseases.asp

Service members and veterans who previously received a diagnosis or those who may have any of the infectious diseases that may be presumed connected with their service can contact the following the VA directly for further assistance:

By Telephone

- Toll-free Helpline: 1-800-749-8387 or 1-800-829-4833 (TDD – for hearing impaired)
- Health Care and Gulf War Registry Health Exam: 1-877-222-8387 (Ask to speak to Environmental Health Coordinator or Patient Care Advocate)
- Compensation and Other Benefits: 1-800-827-1000

In Person

- Health Care and Gulf War Registry Health Exam: Go to your nearest VA health care facility.
- Compensation Benefits and Other Benefits: Go to your nearest VA benefits office.

Also see the USAPHC factsheet:

“Presumptive Disability for Infectious Diseases Related to Military Service in Southwest Asia (1990-present): Criteria Eligibility and Risks”

***If you have other questions - please contact the
U.S. Army Public Health Command’s
Environmental Medicine Program (EMP)***

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