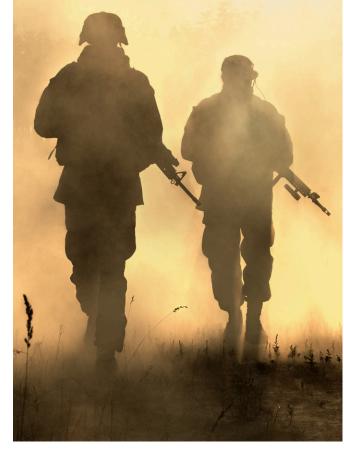
GULF WAR ILLNESS



IS REAL

AND IT CAN BE SERIOUS

Gulf War Illness (**GWI**) is a chronic multisymptom health problem that affects ~1/3 of the ~700,000 US veterans deployed to the Persian Gulf War (1990-1991).

CAUSES

Gulf War veterans had many new, unique, and excessive exposures. These include:

- Pyridostigmine bromide pills*
- Pesticides*



- Nerve gas*
- New, unique & greater number of vaccines*
- Oil fires



- Depleted uranium
 - ım 🤝
- Permethrin-impregnated uniforms

*These have been tied to GWI [1-4].

ASSOCIATED CONDITIONS

Gulf War veterans are at increased risk for:

- ALS (early years only) [5]
- Hypertension [6]
- Heart disease [7]
- Infection [7]
- Sleep apnea [8]
- Overlap conditions (CFS [6,9], MCS [6], fibromyalgia [9], IBS [6])

OBJECTIVE MARKERS-ALTERED IN GWI

- ↓ Mitochondrial function/bioenergetics [10,11]
- † Inflammation (mild), neuroinflammation [12,13]
- ↑ Coagulation activation [13]
- Altered lipids [14,15]
- Altered hormones [16,17]
- † Autoantibodies [18]
- † Autonomic dysfunction [19,20]
- ↓ Natural killer cells (#, activity) [18,21]
- ullet ullet Brain gray matter; white matter changes [22,23]

DIAGNOSIS

CDC [24] and Kansas [25] criteria are used to establish diagnosis. Both require deployment to the Gulf theater (8/90 to 8/91) and persistent symptoms (>6 months). Symptom requirements:

- CDC: One or more symptom in at least two of the three categories of fatigue, mood-cognitive, musculo-skeletal.
- Kansas: Symptoms (either multiple within the category or of at least moderate severity) in ≥ 3 of 6 domains of neurological-cognitive-mood, pain, fatigue/sleep, respiratory, skin and gastrointestinal.



Provider Attitudes Matter

- Best vs. worst healthcare encounters involved veterans feeling honored, validated, perceiving empathy, effort to help, and provider knowledgeable about GWI.
- Worst encounters often involve providers disbelieving veterans - suggesting they were malingering, symptoms were in their head, or attributing symptoms to stress or age.
- Providers implying GWI is malingering, is in veterans' heads, or is not tied to Gulf exposures strongly predicted veterans mistrust of providers, which in turn predicted nonadherence to doctor recommendations and nonreturn for care (all p<0.0001) - threatening care not only for veterans' Gulf War illness, but for their other health conditions...
- You can make a difference!



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