

## **Effectiveness of Acupuncture in Treating Gulf War Illness**

### **Research Advisory Committee on Gulf War Veterans' Illnesses**

**November 1-2, 2010**

Lisa Conboy, MA MS ScD  
Osher Research Center, Harvard Medical School  
New England School of Acupuncture  
Principal Investigator  
[lisa\\_conboy@hms.harvard.edu](mailto:lisa_conboy@hms.harvard.edu)

## **Gulf War Illness (GWI)**

- Definition
- Epidemiology
- Study Methodology
- GWI characterized by Traditional Chinese Medicine (TCM)
- Exposures to neurotoxicants

## Definition

- A chronic, multi-symptom illness (CMI)
- Affects more than one fourth of the nearly 700,000 U.S. military personnel who served in the first Gulf War Operation Desert Shield/Storm (1990-1991)
- CMI symptoms also studied in veterans in the United Kingdom, Canada, & Australia
- No disease-specific treatment identified as helpful

## Symptoms in 3 clusters

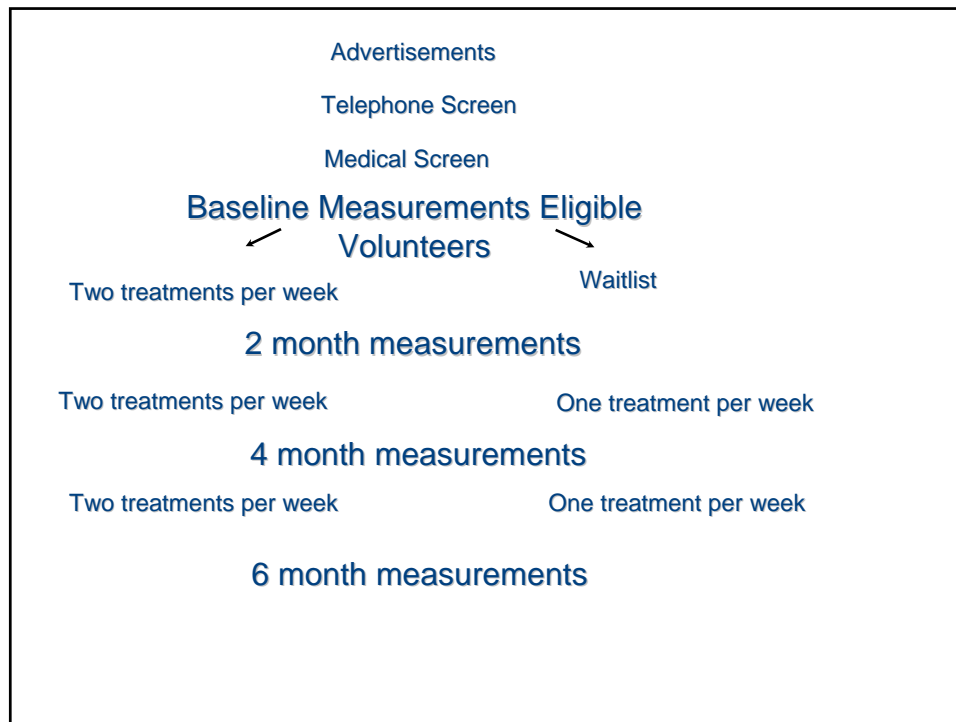
<b>Cluster A</b> <i>Fatigability</i>	<b>Cluster B</b> <i>Mood &amp; Cognition</i>	<b>Cluster C</b> <i>Musculoskeletal</i>
persistent fatigue 24 hrs or more after exertion	feeling depressed	joint pain/ muscle pain
	feeling irritable	
	feeling worried, tense, or anxious	
	difficulty thinking	
	difficulty concentrating	
	problems finding words	
	problems sleeping	

## Study Methodology

- Objectives: To find a successful treatment for GWI, by gathering data to better understand: 1) the effectiveness of acupuncture in treating GWI; 2) the mechanisms of this disease.
- Specific Aim: In a sample of veterans with GWI, evaluate the effectiveness of an individualized acupuncture treatment protocol on the volunteers' most distressing GWI symptom.

## Study Methodology

- Unblinded randomized controlled trial design with a wait-list-control.
- Individualized treatments
- Active group → 6 months of biweekly treatment
- Waitlist group → 2 months of waiting then 4 months of weekly treatments



## Study Methodology: How we measure improvement

Measure general symptoms in Quality of Life and most distressing symptoms

- Fatigability
  - fatigue 24 hours or more after exertion
- Mood and Cognition
  - feeling depressed or
  - feeling irritable or
  - difficulty thinking or concentrating or
  - feeling worried, tense, anxious or
  - problems finding words or
  - problems getting to sleep
- Musculoskeletal
  - joint pain or muscle pain

## **Study Methodology: How we measure improvement**

- The SF-36
- Multidimensional Assessment of Fatigue
- The Profile of Mood States
- Pittsburg Sleep Quality Index
- Measure Your Medical Outcomes Profile
- Beck Anxiety Inventory
- McGill Pain Scale
- Carroll Depression Scale
- Social support, Social Networks, and Stress
- Medication use and Expectations for Treatment
- Blood draw to examine levels of selected markers of inflammation, stress, and immune function

## **Study Methodology How do we record TCM improvement**

Recording TCM symptoms, diagnosis, prognosis, expectations for treatment, alliance with subject

- OM intake-baseline
- Health History Questionnaire-baseline
- Monthly progress TCM (baseline and monthly for 6 months of study)

## Study Methodology Patient Safety

- An **adverse event** is any health change (or side-effect) that happens to a volunteer while he/she is participating in the study.
- The PI has the primary responsibility of reporting adverse events to our Army safety team.
- Please utilize 911 or suicide prevention hotline per your usual clinical protocol.

## Study Methodology Practitioner Safety

- Safety issues treating trauma survivors
- Safety Resources
  - **Suicide Prevention Hotline**  
1-800-273-8255 (TALK)
  - **VA Boston**  
24-hour nurse available to provide telephone care for veterans  
1-800-865-3384
  - **National Veterans Helpline**  
1-800-507-4571

[www.boston.va.gov/](http://www.boston.va.gov/)

## Gulf War Illness

Many deadly harms of modern, technological warfare:

- Medication
- Pesticides

## US troops in protective gear



(<http://www.pbs.org/wgbh/pages/frontline/shows/longmad/air/cron.html#3> Accessed 01/23/2010)

## PB Exposure

### Pyridostigmine Bromide (PB)

Numerous first person accounts provide details of side effects of PB that subsided after the medication was discontinued or the dosage reduced.

- Fever
- Diarrhea, gas, abdominal cramps, vomiting
- Weakness, muscle twitches, and spasms
- Fatigue
- Confusion, poor concentration
- Runny nose
- Blurred vision

## Pesticide Exposures

“On a nightly basis, we would spray our uniforms with pesticides. There was a chemical spray that they gave us to spray our uniforms. We had to hang them outside so that the excess spray would dissipate in the air, I guess. We weren’t supposed to put them on immediately after spraying them.”

“The sand fleas were a problem. We used to put flea collars around the legs of our cots or we would put flea powder on the floor around our cots to try to keep the sand fleas away from us while we were sleeping. We slept with nets over us to keep the flies off. The flies were ungodly.”

*SSgt T.S., Gulf War Veteran*

(RAC, 2008 p 131)



## Pesticide Exposures

### Organophosphates

- DEET, Dichlorvos pest strip
- Chlorpyrifos, Diazinon, Malathion used in surface spraying, environmental fogging

## Pesticide Exposures

### Organophosphates a likely cause of GWI

- Result in delayed neuropathies (OPIDN) after acute poisoning episodes
- Suspected CNS effects from repeated low dose exposure even without acute episode
- Low level use linked to chronic neurodegenerative disease and chronic multisymptom illness
- Role of biological variability of protective enzymes (paraoxonase, or PON1) under investigation

(RAC 2008 p. 12, 13)

## Other Exposures

- Sarin
- Depleted uranium (DU) used in munitions and tank armor
- Oil fires and smoke
- Vaccines
- Sand and particulates
- Petrochemicals (tent heaters, jet fuel, solvents)
- Chemical agent resistant coating (CARC) paint
- Contaminated food and water
- Psychological stress

## How TCM Characterizes GWI

TCM's individualized diagnosis and treatment strategy appropriate for heterogeneous presentation

- TCM Neurology
  - Wei-zhang (Flaccidity Syndrome) – treatment of organophosphate poisoning from TCM perspective
- Autonomic Nervous System (ANS)
- Bi Syndrome

## TCM Treatments

Veterans with GWI will receive individualized TCM diagnosis and treatment strategy, directed at their most distressing symptom, and at any additional symptoms, as well as at their root condition, 1-2 x/week x 4-6 months. Full intake will include medical history and exposure to known or suspected neurotoxicants during the war.

Treatments provided by senior practitioners in private offices, may include:

- needling with *de qi* sensation
- warming treatments, e.g., moxibustion, heat lamps
- manual therapies, including tui na, cupping, gua sha
- electroacupuncture, known to be helpful for its analgesic and anti-inflammatory effects
- microsystems - auricular and scalp
- press balls

## TCM Treatments

Not within the scope of this study, excluded treatments are:

- Chinese Herbal Medicine (CHM)
- Supplements

## Clinical Partners

We invite other clinicians to collaborate with us and contribute to our knowledge base about GWI by sharing treatment results. If you have treated veterans with GWI, please consider writing case reports to share with us.

Please submit your case reports to:

[dodgwi@gmail.com](mailto:dodgwi@gmail.com)

Lisa Conboy, MA MS ScD  
LicAc Co-director of Research  
Principal Investigator  
[lconboy@nesa.edu](mailto:lconboy@nesa.edu)

Meredith St John, MAc  
Academic Dean  
Co-Investigator  
[mstjohn@nesa.edu](mailto:mstjohn@nesa.edu)

## Gulf War Illness

### Special thanks & acknowledgements:

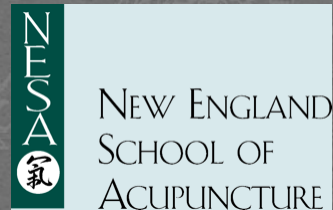
#### New England School of Acupuncture

150 California Street  
Newton, MA 02458

[www.nesa.edu](http://www.nesa.edu)

#### US Department of Defense

MEDCOM CDMRP W81XWH-09-2-0064



## **GWV Study Staff**

- Lisa Conboy, MA, MS, ScD.: Principle Investigator
- Julie Dunn, Ph.D: Data Analyst Coordinator/Recruitment Consultant
- Meredith St. John, MAc., LicAc., Acupuncture Coordinator
- Rosa Schyer, LicAc., Senior Acupuncture Coordinator
- Marc Goldstein, MD: Medical Screener
- Jessica Wolin, MD: Medical Monitor
- Elaine Scarmoutzos: Project Coordinator
- Christina Noonan, LicAc.: Research Assistant
- Matthew Hitron, MD: Research Assistant
- Efi Kokkotou, MD: Biomarker Coordinator
- Roger Davis, Statistical Consultant
- Weihui Li: Work Study Student
- Kara Marquis: Work Study Student

**Thank you  
veterans!**

