

# The Gulf War Illness Heroes Pilot Program - The 22 Project -

Approved IRB: NSU IRB APPROVED:  
Approved: Approved: October 8, 2020  
Expires: Expired: October 7, 2021  
IRB#: IRB#: 2020-461

## Recruiting Gulf War Veterans for Research Study: Treatment of Gulf War Illness with Hyperbaric Oxygen



You may be eligible if you are:

- Diagnosed with Gulf War Illness
- A male Veteran of the 1990-1991 Gulf War Operation Desert Storm and Desert Shield
- Between the ages of 45-70

Want to learn more?

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Symptoms of Gulf War Illness

- Fatigue
- Memory problems
- Headache
- Anxiety/depression
- Sleep disturbance
- Skin rashes
- Shortness of breath
- Sensitivity to chemicals
- Gastrointestinal symptoms

Dr. Kiran C. Patel College  
of Osteopathic Medicine  
NOVA SOUTHEASTERN UNIVERSITY

**NSU**  
Florida

THE  
**LOZICK**  
FAMILY  
FOUNDATION



Treatment is 40 free hyperbaric chamber sessions over 30 days in Delray Beach, Florida. Included are flights, meals, and accommodations. Pre- and post-online questionnaires, blood work, and brain SPECT scans (measures blood flow to the brain) will be done to measure the effect of the hyperbaric treatments.



# **The Gulf War Illness Heroes Pilot Program - The22Project**

## Pilot Research Study: Treatment of Gulf War Illness with Hyperbaric Oxygen

Purpose: Gulf War Illness (GWI) is a disabling, chronic, multi-symptom illness of unknown origin that has affected approximately one-third of the 700,000 U.S.A. military troops deployed to the Middle East between 1990-1991. The purpose of this pilot research study is to evaluate the effect of treating GWI Veterans with hyperbaric oxygen therapy (HBOT).

While deployed in the Gulf War, GWI Veterans were exposed to numerous environmental toxins such as sarin gas, pesticides, vaccines, and toxic inhalants from oil well fires. Researchers think that these environmental exposures play a role in the reason why GWI occurred and continues to progress with time. Toxins damage brain cells and mitochondria, which are the energy-producing organelles inside of the brain cells. This damage results in cognitive difficulties including mental fatigue, poor concentration, memory problems, sleep disturbance and mental health problems including anxiety and depression.

Description of HBOT: The U.S. Food and Drug Administration (FDA) has approved HBOT for a variety of conditions including wound healing in diabetics, infections of the bone, carbon monoxide poisoning and radiation exposure. To date, there have been no research studies using HBOT to treat GWI Veterans.

HBOT delivers increased oxygen to brain cells in two ways: 1) oxygen is increased from 21% found in room air to 100%, and 2) the atmospheric pressure is increased from 1 to 1.5 ATM (atmospheric pressure measurement). By increasing the amount of oxygen to the brain, mitochondrial function in the brain cells improves. In addition, increased oxygen stimulates the brain's ability to produce new brain cells from brain stem cells and replace the damaged brain cells.

GWI Pilot Research Description: For this pilot research project, a total of 20 GWI Veterans, using the Kansas criteria for GWI, will be assessed both pre- and post-treatment with HBOT. Each GWI Veteran will receive HBOT treatments twice a day from Monday to Friday for a total of 40 treatments. The GWI Veterans will be assessed before and after treatment with self-assessment symptom questionnaires for fatigue, pain, sleep, cognitive difficulties, anxiety and depression, brain SPECT scans, online neuropsychological testing, and Fitbit trackers.

Impact: This study will provide preliminary evidence for a new treatment for GWI Veterans. This evidence is needed to apply for larger research studies needed to prove that HBOT successfully treats GWI and to reveal the underlying mechanisms of disease and repair in GWI. The potential is to help disabled GWI Veterans to improve their ability to function both physically and mentally. If proven successful, this research pilot could also initiate future research studies in HBOT for the treatment of first responders such as fire and police officers who are also exposed to toxic chemicals from fires while performing their duties.

Research Team: Alison C. Bested, MD, FRCPC, Associate Professor and Chair, Integrative Medicine NSU, Principal Investigator; Nancy G. Klimas, MD, Professor of Medicine and Chair, Department of Clinical Immunology NSU, Co-Investigator; Kristina Aenlle, PhD, Assistant Professor NSU and Maria Abreu, PhD, Associate Director NSU, Supervision of Laboratory Procedures.