



War Related Illness and Injury Study Center

VA



U.S. Department
of Veterans Affairs

Airborne Hazards and Burn Pits: What you need to know.....

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**Director of the Airborne Hazards and Burn Pits Center of Excellence
War Related Illness and Injury Study Center (NJ WRIISC)**

As the Director of the newly acclaimed Airborne Hazards and Burn Pits Center of Excellence (AHBPCE) at the NJ WRIISC, Dr. Sotolongo provides in-person and telephonic consultations to Veterans and affiliated health care providers regarding medically unexplained respiratory symptoms of concern during military service. She's equally passionate about airway inflammation in inhalation injury.

Before joining the WRIISC, Dr. Sotolongo was on Faculty at the Rutgers Robert Wood Johnson School of Medicine as an Assistant Professor in the Department of Medicine, Division of Pulmonary and Critical Care and served as the Medical Director of the Comprehensive Sleep Disorders Center at Robert Wood Johnson University Hospital in New Brunswick at the Rutgers-Robert Wood Johnson Medical School. Her professional experience also includes her work at the Environmental and Occupational Health Sciences Institute (EOHSI), as a pulmonary consultant, where she evaluated and treated first-responders in the World Trade Center Medical Monitoring and Treatment Program.

Dr. Sotolongo is board-certified by the American Board of Internal Medicine in Internal Medicine, Pulmonary, Critical Care and Sleep Medicine.



Michelle Robertson, MD, MPH

**Occupational and Environmental Physician
War Related Illness and Injury Study Center (NJ WRIISC)**

Michelle W Robertson, MD, MPH, is an Occupational and Environmental Medicine physician at the NJ WRIISC. Dr. Robertson provides in-person and telephonic consultations to Veterans and affiliated health care providers regarding medically unexplained symptoms and exposures of concern during military service. Dr. Robertson's other area of interest includes employing the biopsychosocial approach to health to improve quality of life and prevention of chronic disease.

Dr. Robertson is currently on Faculty at the Rutgers Robert Wood Johnson School of Medicine as a Clinical Assistant Professor in the Department of Environmental and Occupational Medicine and previously served as the Associate Director of the residency training program in Occupational and Environmental Medicine at the Rutgers-University of Medicine and Dentistry of New Jersey (UMDNJ).

Dr. Robertson is board-certified by the American Board of Family Medicine in Family Practice and has completed additional training in Occupational and Environmental Medicine.



Rashida David, MA

Project Manager

War Related Illness and Injury Study Center (NJ WRIISC)

Rashida David is a Project Manager with the NJ WRIISC. Ms. David joined the WRIISC in July 2022 and supports its Education and Research Mission by recruiting for our research studies and managing educational resources and efforts for Veterans and their Providers.

Ms. David brings over 10 years of higher education experience to the WRIISC. Prior to joining the WRIISC, she directed Healthcare and STEM Research Grants and taught as an adjunct faculty. Ms. David earned her BA in Psychology from William Paterson University, her MA in Student Services Administration from Fairleigh Dickinson University, and is currently pursuing her Doctor of Education at Fairleigh Dickinson University.

BEFORE WE BEGIN

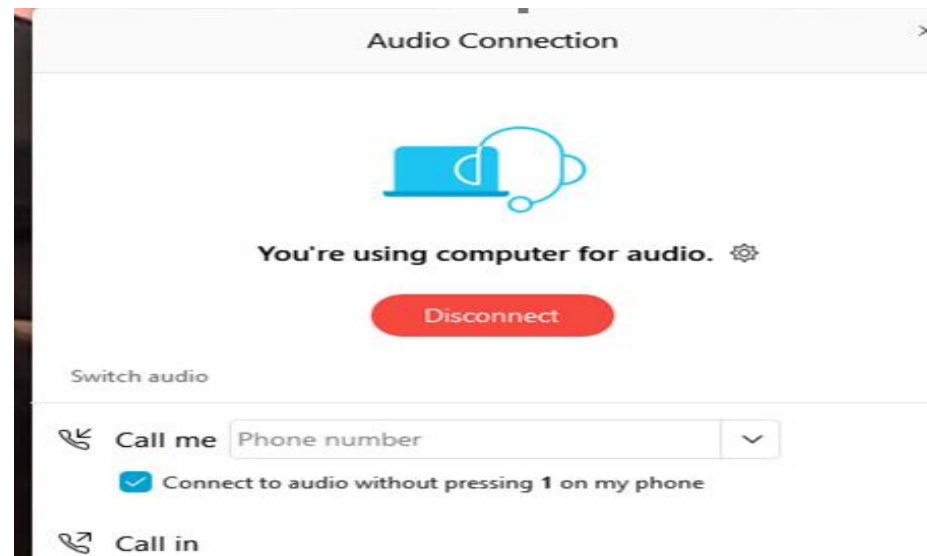
Difficulty hearing??? Have WebEx directly call your telephone # as shown below.

Questions during the presentation??? Questions will be answered during the Question & Answer Period.

Just jot them down in the Q&A box during the presentation; or

Ask them during the Q&A Period.

We cannot answer specific questions about your personal health concerns and information due to privacy concerns.



PRIVACY AND SAFETY

PLEASE DO:

Remember that this class is for educational purposes only and not related to Compensation and Pension.

Not share any personal health information. If you have a personal health question, please contact your healthcare provider.

**Call immediately either of the below if you are experiencing a Mental Health Issue:
National Veterans Crisis Line 1-800-273-8255 option 1,**

or

Confidential Crisis Chat @ <http://www.veteranscrisisline.net>,

or

Text: 838255

or

Medical emergency: call 911.

VETERANS HEALTH MATTERS

For up-to-date information WRIISC's website:

<https://www.warrelatedillness.va.gov/WARRRELATEDILLNESS/education/vhmpodcasts.asp>

Twelve (12) episodes now available on your streaming platforms including iHeart, iTunes, and Spotify, or see Spreaker @

<https://www.spreaker.com/show/veterans-health-matters>

War Related Illness and Injury Study Center

▼ War Related Illness and Injury Study Center
▶ More Health Care

QUICK LINKS

Hospital Locator

Zip Code Go

Health Programs

Protect Your Health

A-Z Health Topics



Veterans' Health Matters Podcast Series



Veterans' Health Matters is a new podcast series sponsored by the War Related Illness and Injury Study Center (WRIISC), a part of Post Deployment Health Services at the Veterans Health Administration. This series focuses on issues that are important to the healthcare community, Veterans, and their caregivers. This is your source on Veterans health because we know the importance of post-deployment health and that every Veterans' health matters!

Ongoing conflicts in the Middle East, as well as historic deployments in multiple eras, have resulted in Veterans with a range of post deployment health concerns and the need for providers to understand these concerns and utilize best practices in the identification, assessment, management, and communication of Veteran care. Veterans with complex medical conditions may benefit from a patient centered approach that is rooted in whole health and functional and integrative medicine.

Hear the WRIISC's subject matter experts provide up to date information ranging from effective communication, to information on nutrition, and much more, that can impact a Veteran's health. For providers, you'll get tips and information on improving care for our Nation's Veterans. For Veterans and their families, we hope you'll be inspired to work with your healthcare team and take charge of your own health!

Search for Veterans Health Matters and subscribe via Spreaker, Apple Podcast (iTunes), Spotify, Castbox, Deezer, Podcast Addict, Google Podcasts or another preferred streaming platform.
Tune in for biweekly new episodes.*

Click here for Spreaker Platform

- ▶ Episode 1 - Difficult Patient/Provider Conversation (July 28, 2020)
- ▶ Episode 2 - Improving Patient/Provider Communication (August 11, 2020)
- ▶ Episode 3 - Toxic Exposures and Gut Health (August 25, 2020)
- ▶ Episode 4 - Tackling Chronic Inflammation (September 8, 2020)
- ▶ Episode 5 - Gut Function and Health (September 22, 2020)
- ▶ Episode 6 - Rebalancing for Wellness (October 6, 2020)
- ▶ Episode 7 - Eliminating Unhealthy Foods (October 20, 2020)
- ▶ Episode 8 - Detoxifying: A Nutritional Body Cleanse (November 3, 2020)
- ▶ Episode 9 - Mighty Mitochondria (November 17, 2020)
- ▶ Episode 10 - Essential Food Nutrients (December 1, 2020)
- ▶ Episode 11 - Wearable Technology Trends (December 15, 2020)
- ▶ Episode 12 - War Related Injury & Illness Study Center (December 29, 2020)

CLASS HANDOUTS & POWERPOINT

Class Survey (Please Complete)

Link will be placed in the chat box during the Q & A Period towards the end of the class.

Class PowerPoint's Link

Can be obtained by clicking on its "live" link at the bottom of the class survey.

Class Handout

Can be obtained by clicking on its "live" link at the bottom of the class survey.

Additional Veteran Resources

Visit:

<https://www.warrelatedillness.va.gov/WARRELATEDILLNESS/education/local-offerings/nj-wriisc.asp>

DISCLOSURES

- The views expressed in this presentation are those of the presenters and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government.
- There are no financial conflicts of interest to disclose.

CLASS AGENDA

- Defining Airborne Hazards
- Understanding Exposures to Burn Pits and Other Airborne Hazards
- Clinical Effects of Airborne Hazards
- Burn Pit Registry
- Tips to Manage Common Symptoms



Clinical



Research



Education



**NJ WRIISC
800-248-8005**

www.WarRelatedIllness.va.gov

Veteran Concerns

1 in 3
report “definite or probable exposure to environmental hazards”

1 in 4
report “persistent major health concerns due to deployment exposures”



GULF WAR CONFLICT ERAS

- **Gulf War**

- Operation Desert Shield: 08/1990 –01/1991
- Operation Desert Storm: 01/17/91- Present
- Operation Desert Sabre

- **Operation Southern Watch (OSW)**

- 8/26/1992 – 3/19/2003 in Iraq

- **Operation Enduring Freedom (OEF)**

- 10/7/2001 – 12/31/2014 in Afghanistan

- **Iraq War**

- Operation Iraqi Freedom (OIF)
 - 03/ 2003 – 11/31/2010 in Iraq
- Operation New Dawn (OND)
 - 9/1/2010 – 12/18/2011 in Iraq



Physical/ Psychological

Heat/Cold Injuries,
Incoming Fire,
Explosions and
Blasts,
Musculoskeletal
Injuries, Loud
Noises,
Psychological and
Mental Stressors

Chemical Hazards

Petrochemical
Solvents and Fuels,
Depleted Uranium,
CARC Paint,
Pesticides,
Chemical Weapons

Prophylactic Measures

Anthrax Vaccine,
Smallpox Vaccine,
Antimalarial
Prophylaxis
(Mefloquine,
Doxycycline),
Pyridostigmine
Bromide Pills,
DEET/Pesticides

Biological

Animal/Insect
Bites, Infectious
Agents,
Blood/Bodily
Fluids, Biological
Weapons

Airborne Hazards/ Respiratory Irritants

Oil Well Fires,
Burn Pit Smoke,
Sand/Dust
Storms,
Industrial Air
Pollution



Burn Pit Smoke



Sand and Dust



Oil Well Fires

| Burn Pit Smoke

**273 burn pits in Iraq
& Afghanistan as of
August 2010**

**Joint Base Balad
> 15,000 personnel
~200 tons waste per day**

Oil Well Fires



Sand and Dust Storms



Other Airborne Hazards

- Industrial & ambient air pollution
- Aircraft and automobile engine exhaust
- Aerosolized particles from blasts, explosions and structural fires

EFFECTS OF AIRBORNE HAZARDS



ENVIRONMENTAL

- What?
- When?
- How much?
- How long?
- Military duties?



INDIVIDUAL

- Genetic makeup?
- Other lifetime exposures?
- Civilian exposures?
- Habits?
- Other diagnoses?
- People Respond Differently

Hill's criteria of causation

Association ≠ Causation

Strength of association

Consistency

Specificity

Temporality

Biological gradient

Plausibility

Coherence

Experimental evidence

Analogy



TOXICOLOGY
Animal studies

OCCUPATIONAL MEDICINE
Work accidents

EPIDEMIOLOGICAL
Communities

GULF WAR STUDIES
GW Veterans

HOW DID WE GET HERE?



This Photo by Unknown Author is licensed under [CC BY](#)

RESPIRATORY SYMPTOMS 101

↑ respiratory symptoms

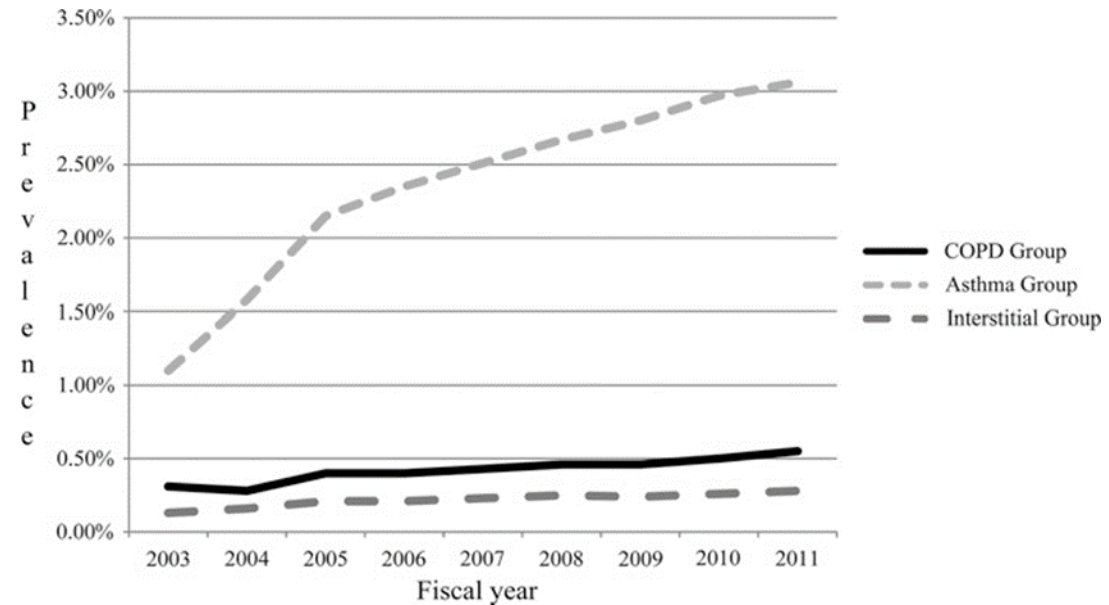
- during and post-deployment
- higher in deployed vs. non-deployed

↑ prevalence of chronic lung disease VA wide

(Pugh et al. 2016)

↑ respiratory illnesses, encounters

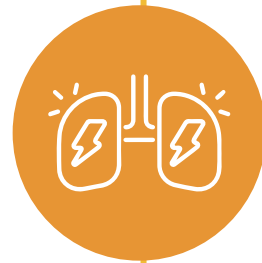
- 40-70% respiratory illness during deployment



DEPLOYMENT RELATED RESPIRATORY DISEASES



- Allergic rhinitis
- Allergic rhinosinusitis
- Asthma
- COPD
- Emphysema



- Constrictive bronchiolitis
- Respiratory bronchiolitis
- Acute Eosinophilic
- Pneumonia
- Granulomatous pneumonitis
- Idiopathic pulmonary fibrosis

Kreft et al. *Curr Opin Pulm Med*,
2015

Large Study Looking at Burn Pit Exposure (only)

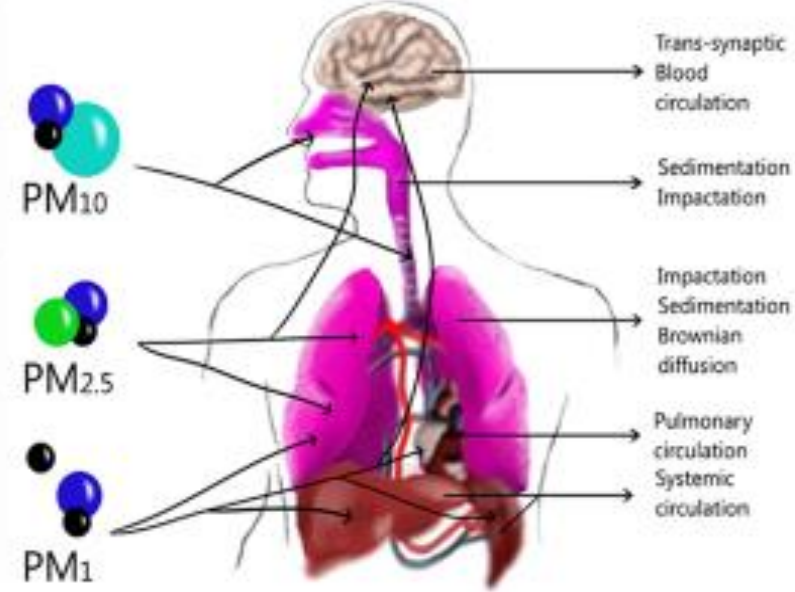
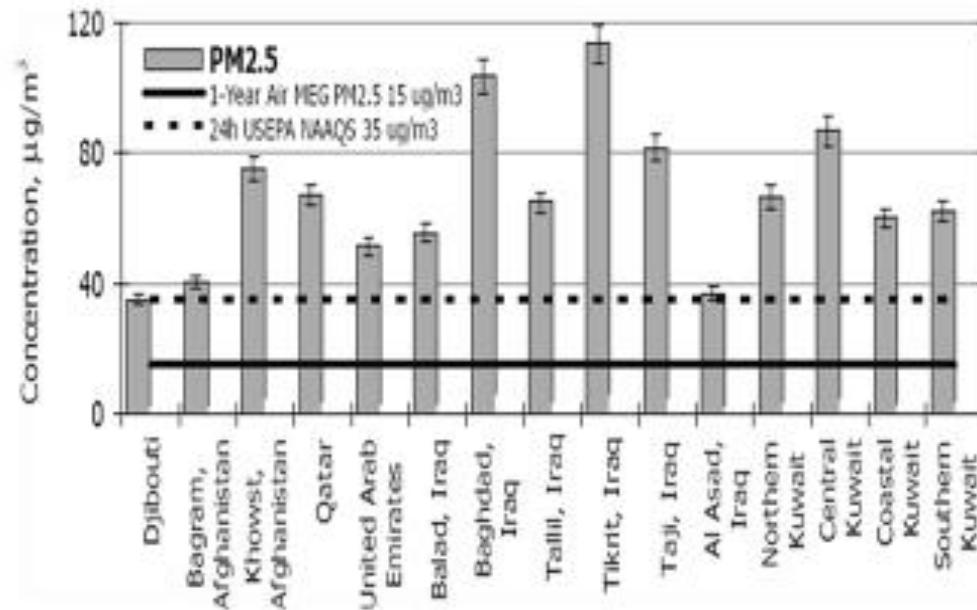
No increased risk of symptoms or conditions if deployed within 3 miles of burn pit (Smith et al. 2012)



Not Only Burn Pits BUT Maybe all Airborne Hazards

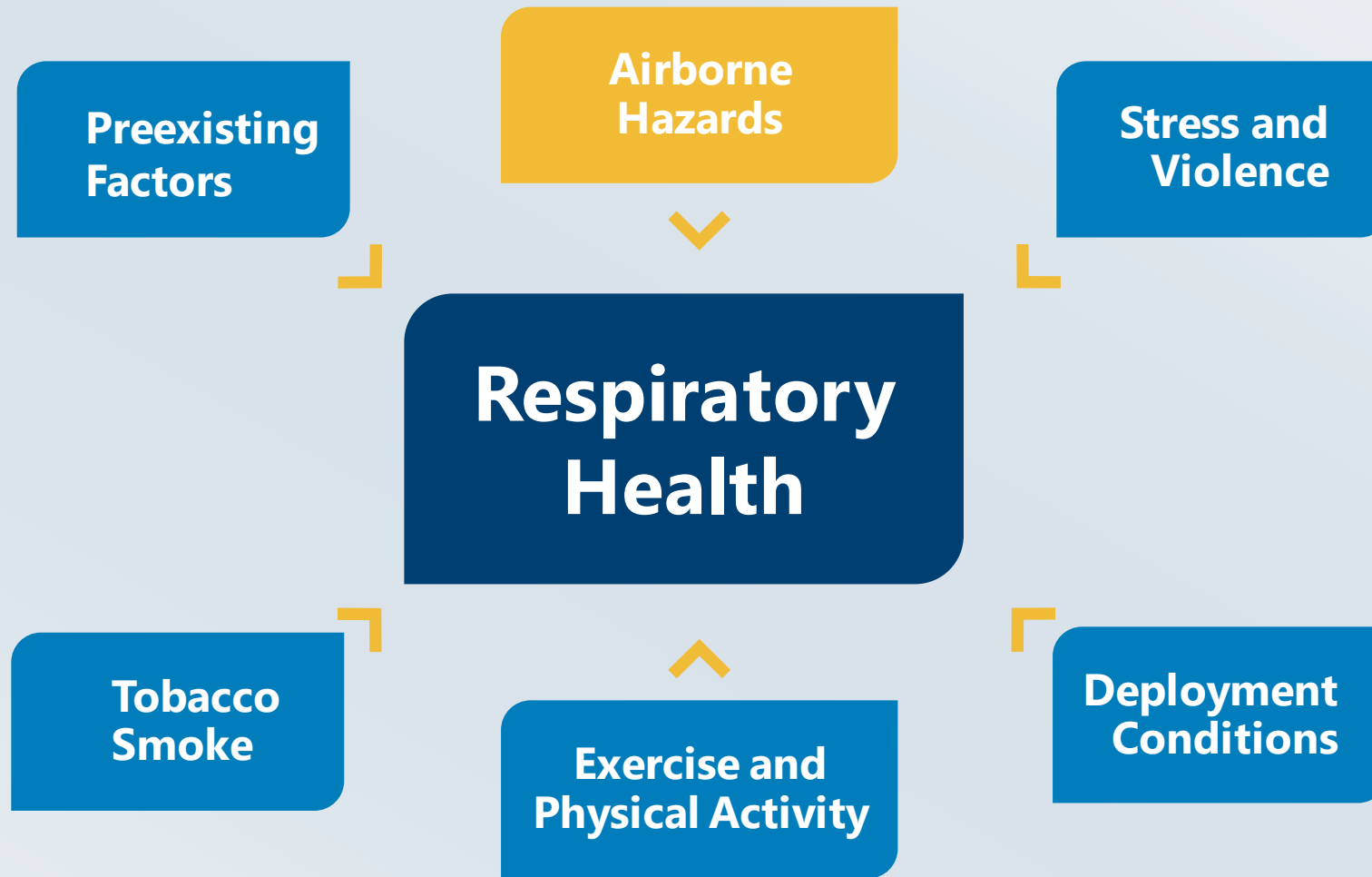
Or

Maybe some service members will be more susceptible to having long term effects of exposure to burn pits



CURRENT CONVERSATION...

“...service in Iraq or Afghanistan — ***might be associated with long-term health effects,*** in highly exposed ..or susceptible populations..”



Falvo et al., *Epidemiologic Rev*, 2015

STAMPEDE STUDIES I II III

- Active-Duty military out of Brooks Army Medical Center 2005 -2014
- Most common diagnoses were asthma and upper airway abnormalities
- 31 – 42% had no diagnosis for their symptoms
- Related factors: PTSD, Sleep Apnea, GERD, Smoking, BMI

RISK OF NEW-ONSET ASTHMA



1. Deployed with combat,
2. Deployed w/o combat,
3. Non-deployed

New-onset asthma = No report of asthma at baseline, but on follow-up survey

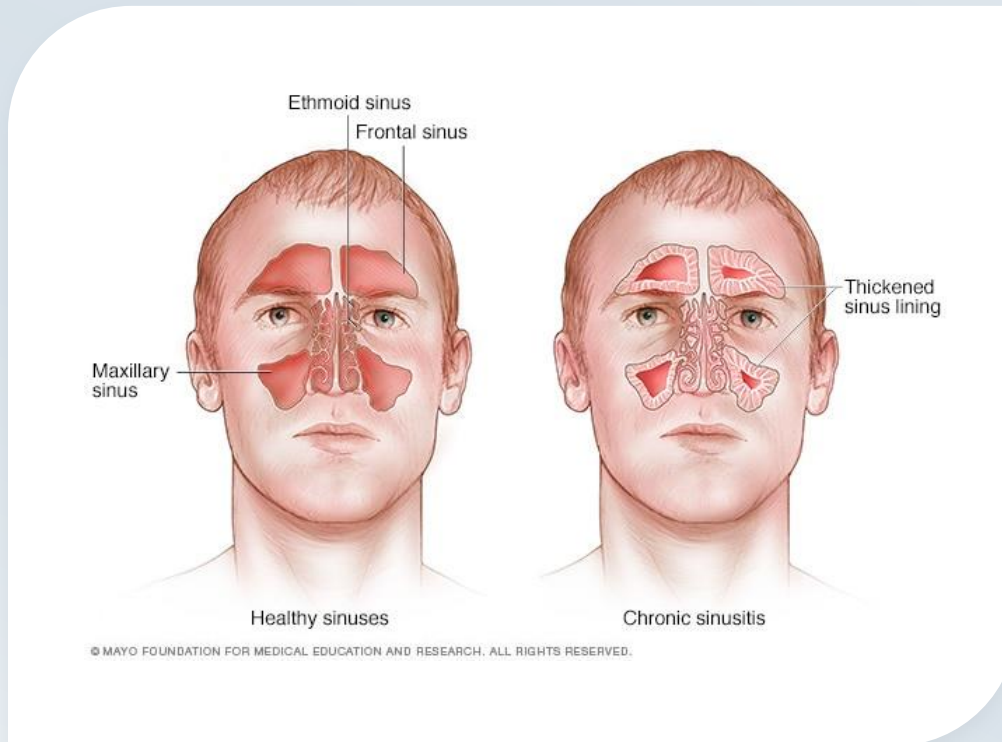


24-30% ↑ risk

No ↑ risk

***BMI ≥ 30 =
greatest risk**

DEPLOYERS ↑ RISK OF SINUSITIS



- **New Generation of U.S. Veterans Study** (Barth et al. 2014)
- Deployers more likely to be diagnosed with sinusitis post-9/11
 - **30% increased risk**
- No increased risk of asthma or bronchitis
- *Self-reported diagnoses*

Figure from: <https://www.mayoclinic.org/diseases-conditions/chronic-sinusitis/symptoms-causes/syc-20351661>

- “inadequate or insufficient evidence to determine an association”
- “should not be interpreted as meaning that there is no association between respiratory health outcomes and deployment to SWA”
- “the available data are, on the whole, of insufficient quality to make scientific determination”



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PDHS/AHBPCE Supplement To NASEM Consensus Study Report

CONSENSUS SUPPLEMENT REPORT

- Reviewed report
- VA reviewed the wider literature
 - epidemiological literature on civilians
 - mechanistic
 - toxicological studies
- The result of that review showed an association between particulate matter 2.5 exposures and some respiratory symptoms

WHAT DO WE KNOW NOW?

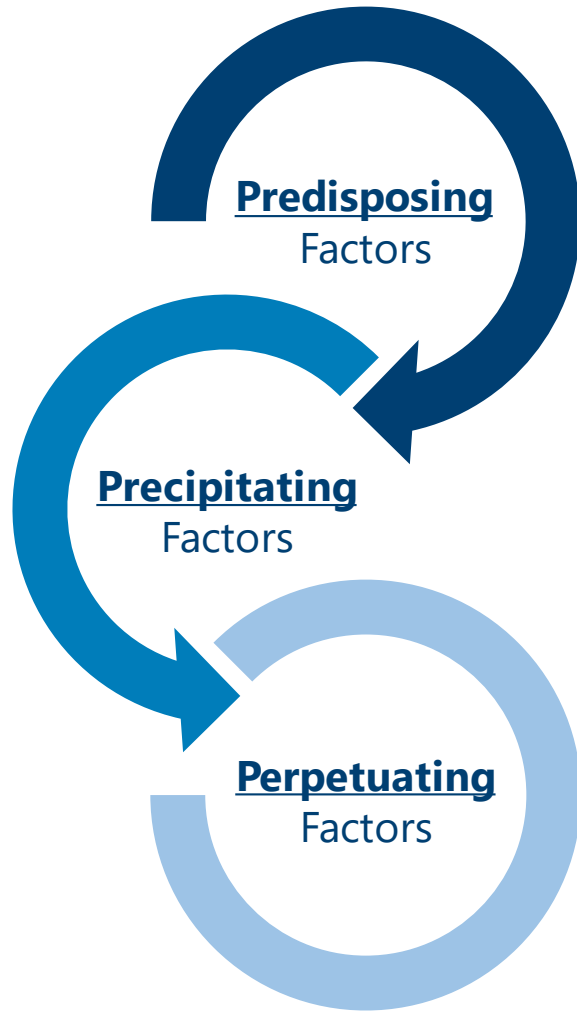
- The majority of Veterans with AH exposures have had resolution of symptoms post deployment
- A significant proportion continue to have symptoms
- Unclear if cause is one or all exposures
- The most frequent diagnoses: asthma, sinusitis, rhinitis
- 8/2021 Presumption granted for above conditions

“I am short of breath, but my doctor says my lung tests are normal.”

NORMAL PFTs \neq NORMAL LUNGS

“I am short of breath, but my doctor just tells me to lose weight and exercise.”

THE 3 P'S



Predisposing: Childhood illnesses
Family History

Precipitating: Military exposures
Industrial Accidents
Past Occupational
Exposures

Perpetuating: Current Exposures
Occupational
Home
Hobbies
Social Habits

the Airborne Hazards and Burn Pits Center of Excellence (AHBPCE)



**AHBPCE
@NJ WRIISC**



**Airborne Hazards
and Open Burn
Pit Registry**



RUTGERS

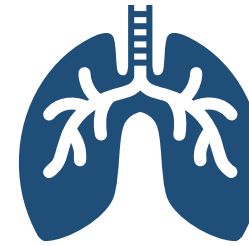
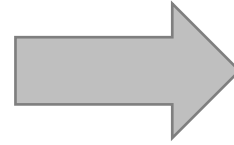
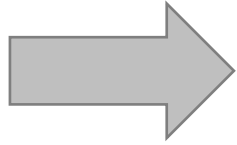


RUTGERS
Environmental and Occupational
Health Sciences Institute | EOHSI

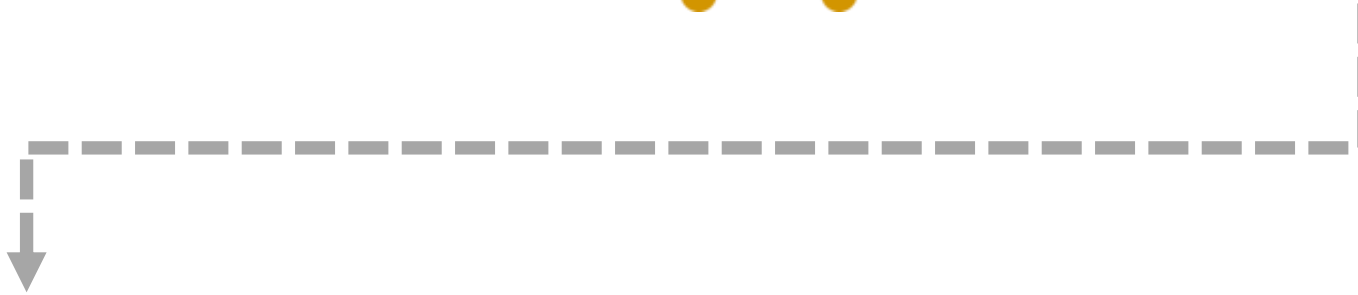




Airborne Hazards and Open Burn Pit Registry



Self-reported respiratory condition(s)



PDCEN Core Clinical Evaluation

**Spirometry
(Pre/Post BD)**



**Body Box
DLCO**



**CPET
w/ABGs and
12-lead ECG**



**FOT
(Pre/Post BD)**



FeNO



- **Our goal is to create some standardization in the workup respiratory symptoms**
 - Necessary testing and imaging
 - Standardization of biopsy interpretation
- **Assess possibility of diagnosis without biopsy**

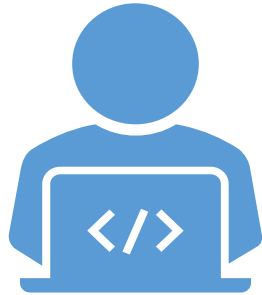
AIRBORNE HAZARDS & BURN PIT REGISTRY

***Public Law
12-260***

**Monitor and ascertain health effects from
exposures**

**Monitor the health care of Veterans with
concerns**

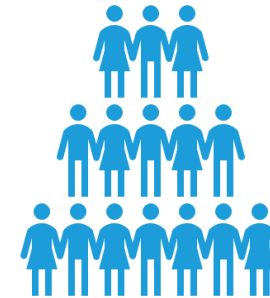
Provide high quality health services



**Self-Reported
Exposures**



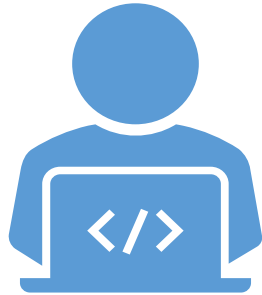
**Survey
Questions**



**Participation
Rate**

National Academies of Sciences, Engineering, and Medicine. 2017. *Assessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry*. Washington, DC: The National Academies Press.
<https://doi.org/10.17226/23677>.

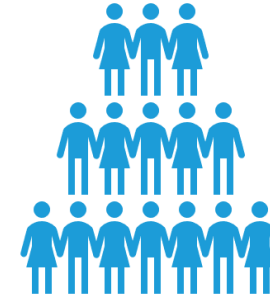
AHBPC CLINICAL/RESEARCH OPPORTUNITIES



**Enhanced
Exposure
Metrics**



**Merging
with Health
Records**



**Case-
Control
Studies**

AIRBORNE HAZARDS & OPEN BURN PIT REGISTRY

Eligibility

- Southwest Asia theater any time after August 2, 1990
- Iraq, Afghanistan, Kuwait, Saudi Arabia, Bahrain, Djibouti, Gulf of Aden, Gulf of Oman, Oman, Qatar, United Arab Emirates, waters of the Persian Gulf, Arabian Sea, and Red Sea
- Afghanistan or Djibouti on or after September 11, 2001
- Expanded to include Syria and Uzbekistan

Operations

- Desert Shield and Desert Storm (ODS/S)
- Iraqi Freedom (OIF)
- Enduring Freedom (OEF)
- New Dawn (OND)

The Sergeant First Class Heath Robinson Honoring our Promise to Address Comprehensive Toxics Act (PACT) of 2022



The new PACT Act



- » Expands toxic-exposed Veterans access to VA care
- » Extends health care eligibility for Vietnam, Gulf War, and Post-9/11 era combat Veterans
- » Adds new presumptive conditions for radiation, Agent Orange, Gulf War toxins, and burn pit exposures

EXPANDED VA CARE & BENEFITS

Learn more at [VA.gov](https://www.va.gov)
1-800-MyVA411 (800-698-2411)

VA



U.S. Department
of Veterans Affairs



On or after August 2, 1990

- Bahrain
- Iraq
- Kuwait
- Oman
- Qatar
- Saudi Arabia
- Somalia
- The United Arab Emirates (UAE)
- The airspace above any of these locations

On or after September 11, 2001

- Afghanistan
- Djibouti
- Egypt
- Jordan
- Lebanon
- Syria
- Uzbekistan
- Yemen
- The airspace above any of these locations

Presumptive Cancers

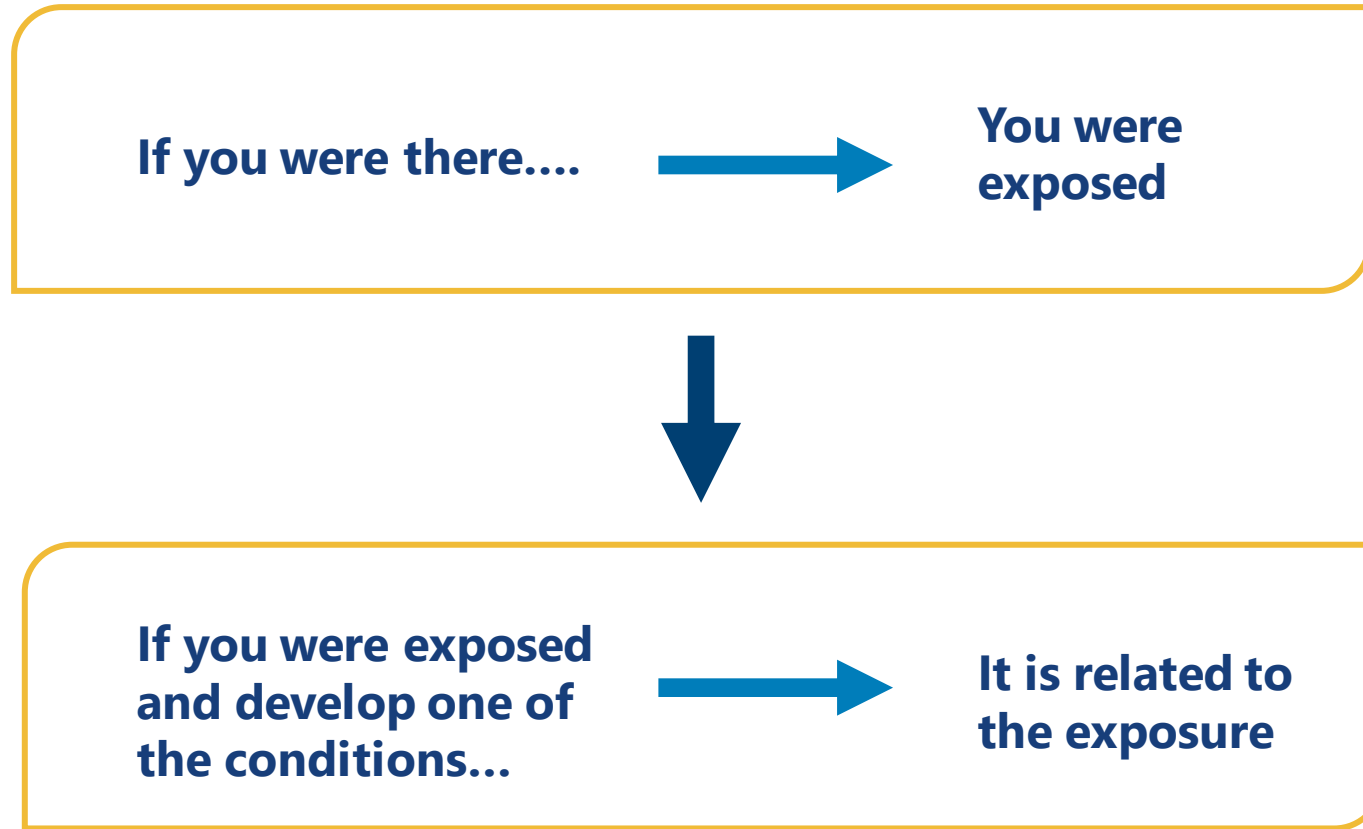
- Brain cancer
- Gastrointestinal cancer of any type
- Glioblastoma
- Head cancer of any type
- Kidney cancer
- Lymphatic cancer of any type
- Lymphoma of any type
- Melanoma
- Neck cancer
- Pancreatic cancer
- Reproductive cancer of any type
- Respiratory (breathing-related) cancer of any type

Presumptive Illnesses

- Asthma that was diagnosed after service
- Chronic bronchitis
- Chronic obstructive pulmonary disease (COPD)
- Chronic rhinitis
- Chronic sinusitis
- Constrictive bronchiolitis or obliterative bronchiolitis
- Emphysema
- Granulomatous disease
- Interstitial lung disease (ILD)
- Pleuritis
- Pulmonary fibrosis
- Sarcoidosis

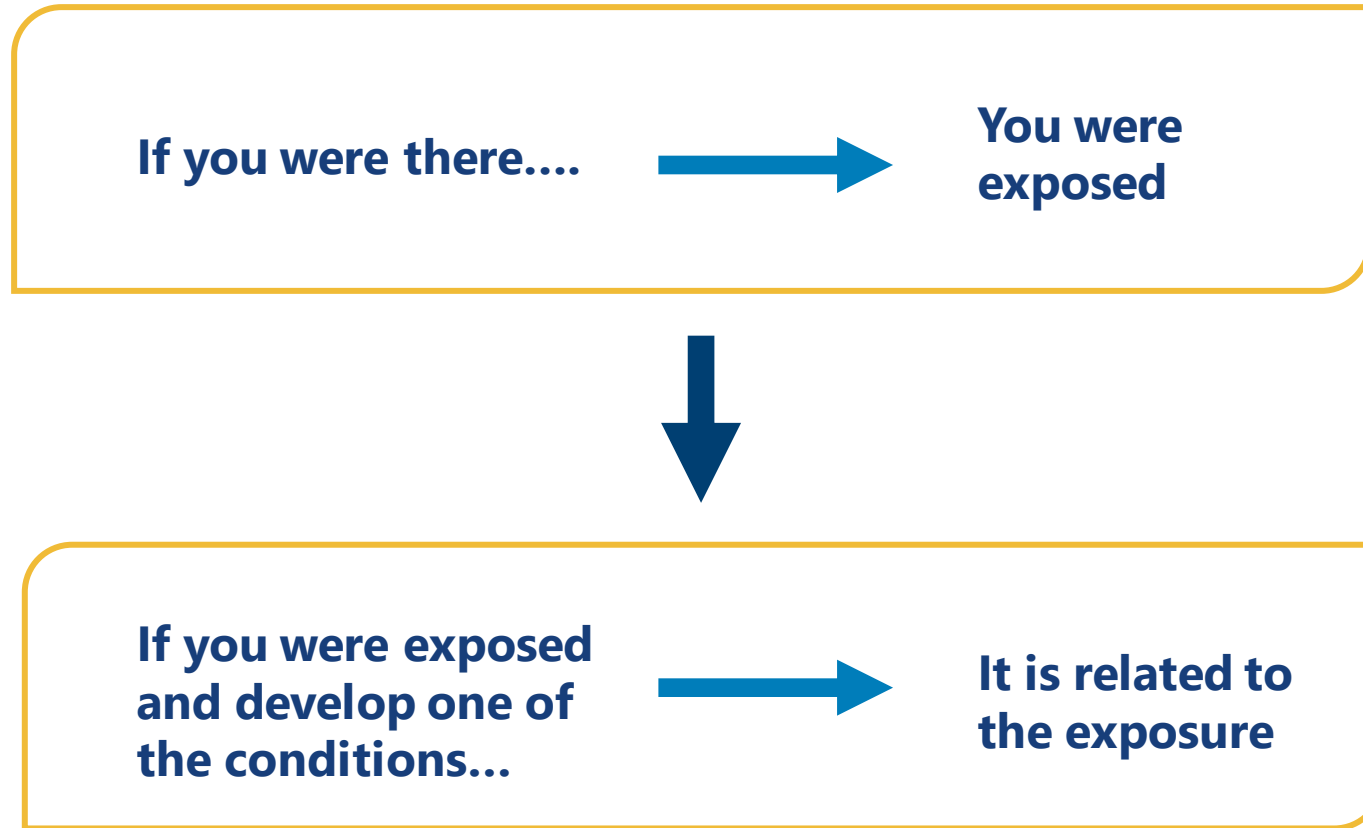
PRESUMPTIONS AND WHY DO WE HAVE THEM?

- Two-step presumption



PRESUMPTIONS AND WHY DO WE HAVE THEM?

- Two-step presumption



AHOBPR: MODERN APPROACH

- On-line self-assessment questionnaire

U.S. Department of Veterans Affairs

Airborne Hazards and Open Burn Pit Registry | Home | About the Registry | Contact Us ▾

Airborne Hazards and Open Burn Pit Registry

Why sign up?

You can create a snapshot of your health to share with your provider.

- Create a snapshot from which to identify changes in your health.
- Print and use your completed questionnaire to discuss concerns with your provider.
- Learn about follow-up care.

Is this for me?

The registry is a database of information about Veterans collected through a questionnaire. OEF/OIF/OND or 1990–1991 Gulf War Veterans can use this questionnaire to report their exposure to burn pits and other airborne hazards.

[Learn more »](#)

Sign up in 4 easy steps

1. Use your Department of Defense Self-Service Logon (DS Logon) to access questionnaire.
2. Complete entire questionnaire.
3. Print or save completed questionnaire for your records.
4. Submit questionnaire.

[Need a DSLogon? »](#)

[DSLogon Sign In »](#)

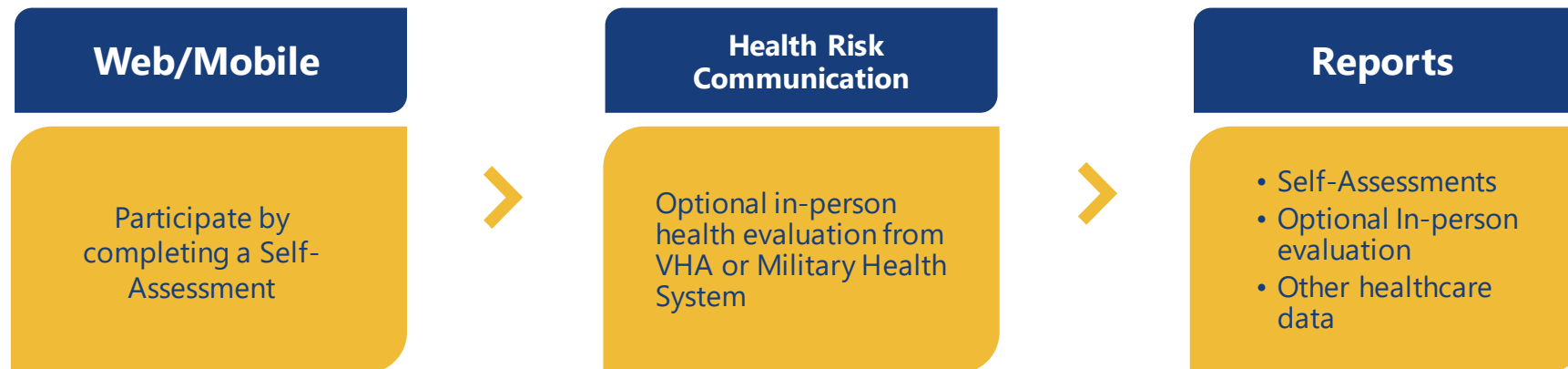
Authentication allows deployment history to be retrieved from DoD

U.S. Department of Veterans Affairs | 810 Vermont Avenue, NW Washington DC 20420 Last reviewed/updated June 18, 2013

War Related
Illness and Injury
Study Center
2/25/21-Slide 60

AHOBPR: MODERN APPROACH

- Voluntary for Veterans and Active Duty Servicemembers
- Eligibility determined by DoD: Dates and Locations (may request reconsideration)
- Registry 2-part components
 - Registry questionnaire: Self-assessment of health, lifestyle, and activity
 - Requires Internet access
- Option to request in-person evaluation
 - require Veterans to schedule appointments at VA health care facilities



HOW DO I MAKE AN APPOINTMENT FOR A REGISTRY EXAM?

- **Appointments**
 - In-person
 - Telehealth criteria
 - Have an established PCP
 - Last PE and labs (within past year)
- **Local VA's Environmental Health Clinicians and Coordinators**
 - <https://www.publichealth.va.gov/exposures/coordinators.asp>



WHAT THE REGISTRY PROVIDES

What the registry IS:

- Must be completed by a VA provider, so must be added to VA EHR
- One-time Comprehensive Health Exam
- Entry of Health Conditions in the BP Clinical Note in CPRS
- Free to eligible Veterans w/ NO co-payment

What the registry IS NOT:

- Enrollment in VA Health Care NOT necessary
- Will NOT confirm AH or GW exposures
- Does NOT take the place of primary care provider
- NOT specialty advice
- NOT a disability exam or compensation & pension exam
- NOT required for other VA benefits



WHAT DOES THE REGISTRY EXAM CONSIST OF?

History and Physical Examination

- Review online registry questionnaire
 - Military history and document exposures
 - PE: Pulse Ox, Upper and Lower Airway
-
- **Diagnostic evaluation based on signs and symptoms**
 - **Follow-up letter**
 - **Any identified health conditions must be followed up with your healthcare provider**
 - For additional testing or referrals if abnormal results

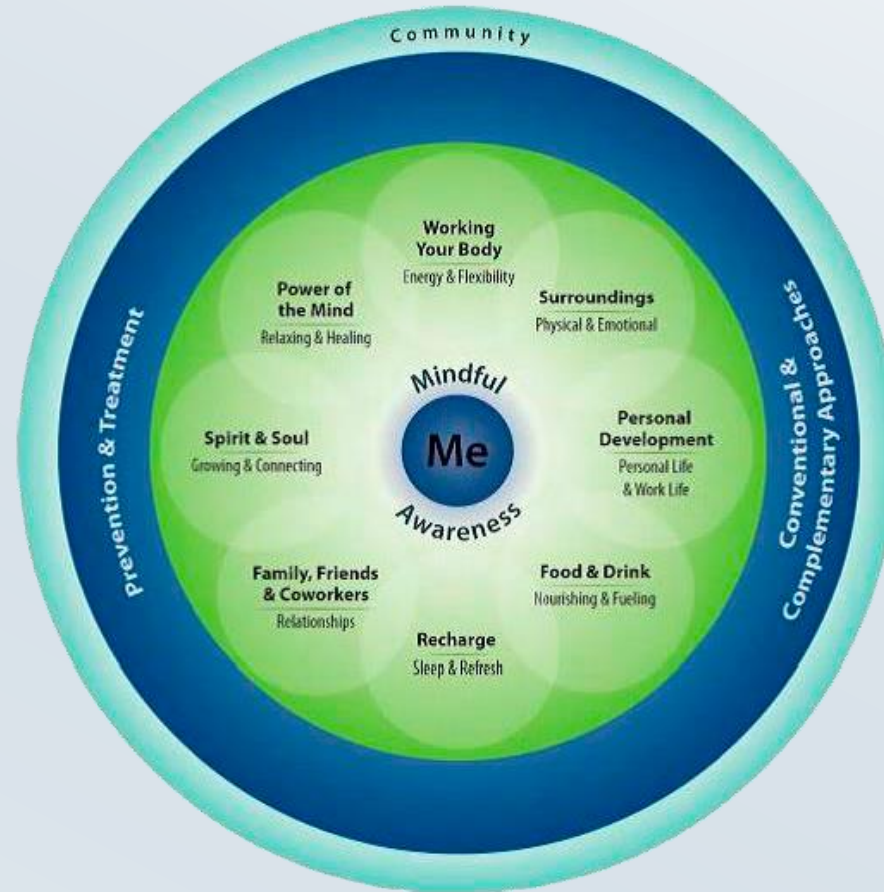
SYMPTOMS: SCREENING AND TREATMENT

- Most symptoms get better
- Treatment is the SAME
- See your doctor regularly
- Annual Screening tests
 - United States Preventive Services Task Force
- Healthy Lifestyle
 - Diet & Exercise
 - Stress Management



Components of Proactive Health and Well-Being

“Circle of Health”



Available Resources to Assist with Applications

VA web site: (www.benefits.va.gov)

File electronically @ www.ebenefits.va.gov

Veterans Benefits Administration

Counselors

- 800-827-1000 www.vba.va.gov

Veteran Service Organization Counselors

- Vet Centers

eBenefits: My Gateway to Benefit

Information

- www.ebenefits.va.gov

Questions?





**Thank you for your
service & sacrifice**

