



# Environmental Exposure Informed Care For Veterans

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Society of Veteran Disability Examiner PAs

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# Disclosures

*We have no relevant relationships with ineligible companies to disclose within the past 24 months.*

*(Note: Ineligible companies are defined as those whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.)*

# Educational Objectives

At the conclusion of this session, participants should be able to:

1. Identify toxic environmental exposures unique to military personnel.
2. Recognize medical conditions that are presumptively caused by toxic exposures during military service.
3. Describe resources that assist in providing informed care for Veterans regarding environmental exposures incurred during military service

# Overview of Wars

# Gulf War (1990 - Present) <sup>(1, 2)</sup>

Desert Shield and Desert Storm (8/2/1990 - 6/13/1991)

Operation Desert Shield (8/2/1990 - 1/16/1991)

Operation Desert Storm (1/17/1991 - 4/6/1991)

Iraq War (2003 - 2011)

Operation Iraqi Freedom (2003 - 2010)

Operation New Dawn (2010 - 2011)

War in Afghanistan (2001 - 2021)

Operation Enduring Freedom (2001 - 2014)

Operation Freedom's Sentinel (2015 - 2021)



Southwest Asia theater of military operations includes Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, The United Arab Emirates (U.A.E.), Oman, Afghanistan, Israel, Egypt, Turkey, Syria, Jordan, Gulf of Aden, Gulf of Oman, Persian Gulf, Red Sea, and Arabian Sea. The airspace above Bahrain, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and U.A.E is also included (3, 4).

# Wars (continued) <sup>(2)</sup>

Vietnam War (1955 - 1975)

Cold War Era (1945-1991)

Korean War (1950-1953)

World War II (1939-1945)

# Exposures Encountered By Military Personnel

# Military Exposures



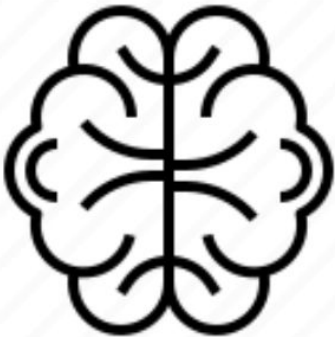
## Chemical

- Weapons
  - Sarin Gas
  - Mustard Gas
- Pollution
- Solvents



## Biological

- Vaccinations
- Infectious Disease
- Biological Weapons



## Psychological

- PTSD
- Military Sexual Trauma



## Physical

- Blast Injury
- Gunshot/Munition injury
- Motor Vehicle Accident
- Noise
- Radiation
- Heat or Cold Exposure



# Case

Name of Veteran: XXX

Branch: Army

Dates of Service 1970-1980

Military Occupational Specialty (MOS): Electronic Technician

# History

What were you exposed to? **Trichloroethylene (TCE)** to clean circuit boards.

Where and when was the location of the exposure? **Korea, 1975-1985**

How long was the exposure? **10 years**

Routes of exposure - oral, dermal, inhaled, mucosal? **Dermal, inhaled**

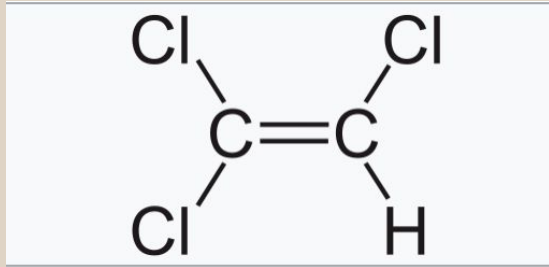
Were precautions taken? **No precautions**

What are your concerns about the exposure? **Tremors**

# Trichloroethylene (TCE) <sup>(9)</sup>

TCE was used as a powerful degreaser for machinery parts and equipment

TCE has neurotoxic and carcinogenic effects



# The PACT Act

# The PACT Act <sup>(10)</sup>

- Expands care for Veterans of the Vietnam, Gulf War, and post-9/11 eras
- Adds 20+ presumptive conditions for burn pits, Agent Orange, etc.
- Adds presumptive-exposure locations for Agent Orange and radiation
- **Requires VA to provide a toxic exposure screening to every Veteran**
- Increases research, education, and treatment related to toxic exposures

# Examples of Toxic Exposures

- Burn Pits
- Herbicide Agent – 2,3,7,8 – Tetrachlorodibenzodioxin (TCDD), Agent Orange
- Asbestos
- Mustard Gas – Nitrogen, Sulfur Mustard, or Lewisite
- Camp Lejeune Water Contamination
- Gulf War Illness in Southwest Asia
- Gulf War Illnesses in Afghanistan
- Radiation

# Case

Name of Veteran: XXX

Branch: Army

Dates of Service: 2001-2003, Operation Enduring Freedom, Afghanistan

Military Occupational Specialty (MOS): Artillery

# History

What were you exposed to? **Burn pits**

Where and when was the location of the exposure? **Afghanistan, 2001-2003**

How long was the exposure? **2 years**

Routes of exposure - oral, dermal, inhaled, mucosal? **Inhaled**

Were precautions taken? **No precautions**

What are your concerns? **Chronic rhinitis and asthma**



# Burn Pits (2)

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# Burn Pit Presumptive Conditions <sup>(10)</sup>

|                           |                     |                           |
|---------------------------|---------------------|---------------------------|
| Brain cancer              | Asthma              | Chronic bronchitis / COPD |
| Glioblastoma              | Chronic sinusitis   | Chronic rhinitis          |
| Bronchiolitis             | Emphysema           | Granulomatous disease     |
| Interstitial Lung Disease | Pleuritis           | Sarcoidosis               |
| Pulmonary fibrosis        | Reproductive cancer | Respiratory cancer        |
| Lymphoma                  | Melanoma            | Neck cancer               |
| Kidney cancer             | Head cancer         | GI cancer                 |
| Pancreatic cancer         |                     |                           |

# Case

Name of Veteran: XXX

Branch: Air Force

Dates of Service 1970-1974, Vietnam

Military Occupational Specialty: Operation Ranch Hand/ sprayed Agent Orange

# History

What were you exposed to? **Agent Orange**

Where and when was the location of the exposure? **Vietnam, 1966-1969**

How long was the exposure? **3 years**

Routes of exposure - oral, dermal, inhaled, mucosal? Dermal, inhaled, oral

Were precautions taken? No precautions

Concerns: DM Type 2, neuropathy, hypothyroidism, HTN, prostate cancer

# Agent Orange (11, 12)

Blend of tactical herbicides

Sprayed from 1962 to 1971 in the Vietnam war to remove trees and foliage.

The carcinogen “dioxin” or TCDD is a byproduct of herbicide production.

# Agent Orange Presumptive Conditions (13, 14)

|                          |                         |
|--------------------------|-------------------------|
| Hypertension             | MGUS                    |
| Bladder cancer           | Chronic B-cell leukemia |
| Hodgkin's disease        | Multiple myeloma        |
| Non-Hodgkin's lymphoma   | Prostate cancer         |
| Respiratory cancers      | Soft tissue sarcomas    |
| AL amyloidosis           | Chloracne               |
| Diabetes mellitus type 2 | Hypothyroidism          |
| Ischemic heart disease   | Parkinson's disease     |
| Peripheral neuropathy    | Porphyria cutanea tarda |

# Educational Resources

# Military Occupation Search Portals

**DOD COOL Portal - Research Military Occupations (osd.mil)**

<https://www.cool.osd.mil/research-military-occupations.htm>

**Military Careers : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics (bls.gov)**

<https://www.bls.gov/ooh/military/military-careers.htm>



# Military Exposures Newsletter

Public Health

More Health Care

### QUICK LINKS

Hospital Locator

Zip Code  Go

Health Programs

Protect Your Health

A-Z Health Topics

 **Veterans Crisis Line**  
DIAL 988 then PRESS 1

 **My healthvet**  
My Health, My Care: 24/7 Access to VA

## Military Exposures & Your Health - 2023 - Issue 10

In this issue:

- [Toxic Exposure Screening](#)
- [Community Forums for Veterans who served at Karshi-Khanabad Air Base](#)
- [VA holds annual Military Environmental Exposures Training Conference](#)
- [The PROject for Military Exposures and Toxin History Evaluation in U.S. service members \(PROMETHEUS\)](#)

### Toxic Exposure Screening

As a Veteran, during your military service, you may have been exposed to environmental hazards, such as open burn pits or Gulf War-related exposures. To learn more about your exposures, you can have a [toxic exposure screen](#) (TES) during a routine health care appointment, which will allow your exposures to be documented in your record. The TES includes a series of questions that take about 5-10 minutes, and the potential exposures to various hazards are recorded. This screening is not meant for diagnostic purposes but can address concerns about your health and deployment. Following the screen, you will receive information about benefits, [environmental health registry exams](#) and clinical resources to address any concerns.

DIRECTORY  
**ENVIRONMENTAL HEALTH COORDINATORS**

### CONTACT

Health Care  
877-222-8387

TDD (Hearing Impaired)  
800-829-4833

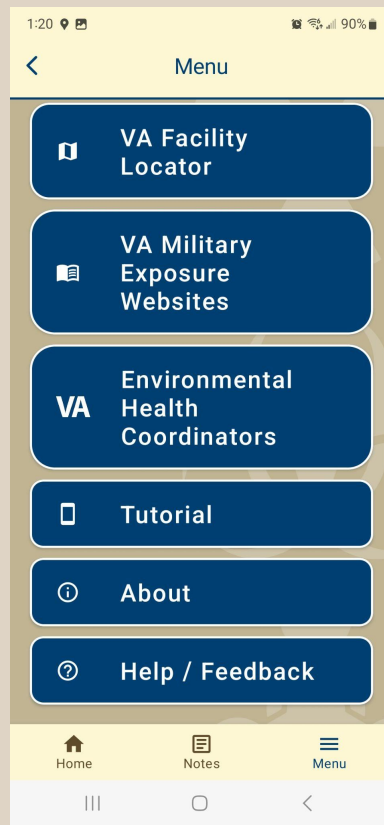
### GET EMAIL UPDATES

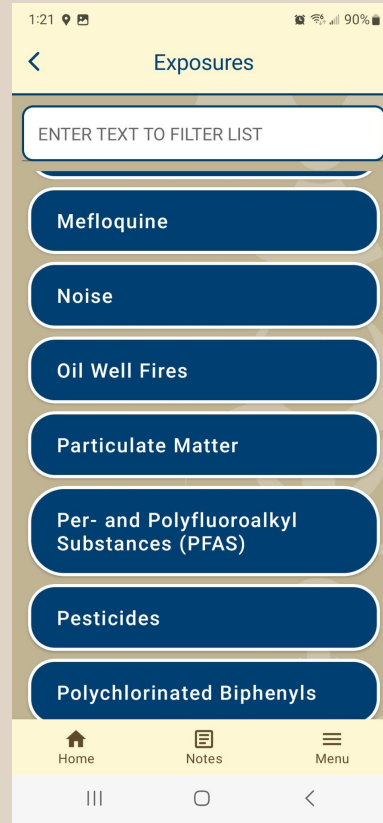
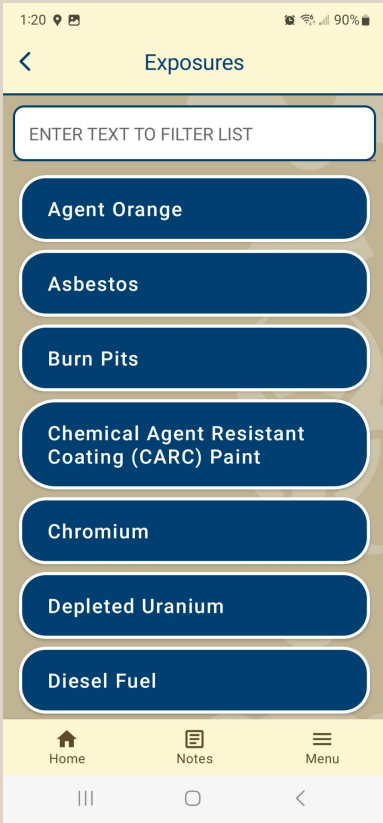
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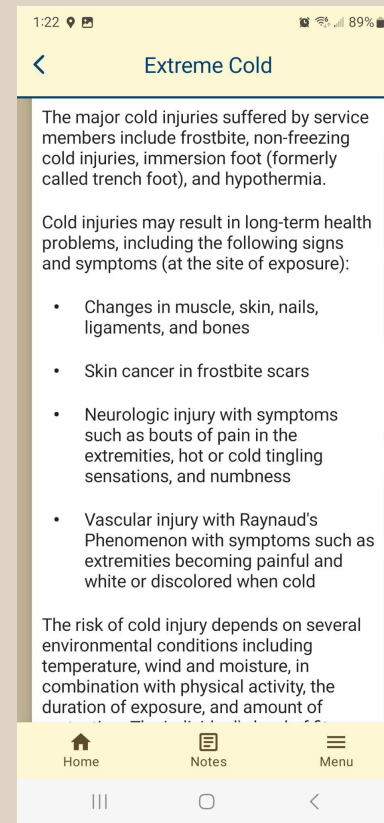
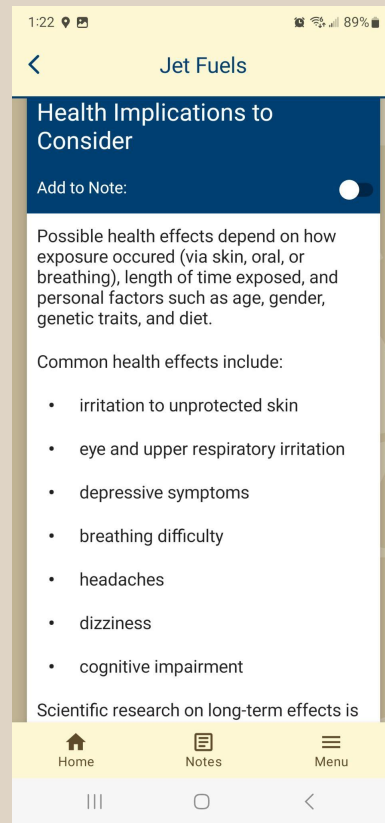
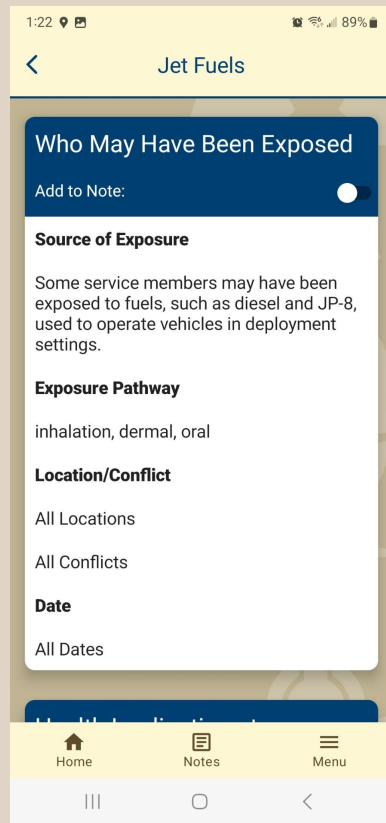
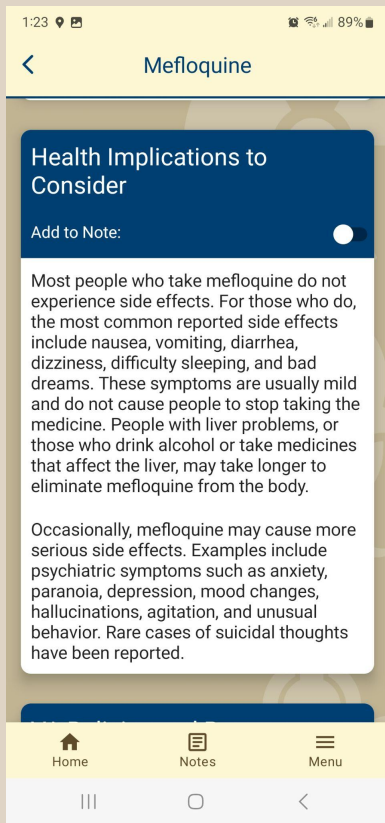
Email Address  Signup

# Exposure Ed Mobile App

<https://mobile.va.gov/app/exposure-ed>







# Military Environmental Exposures Certification <sup>(14)</sup>

Offered by the American College of Preventive Medicine (ACPM) and VA.

Module 1: Assessing Deployment Related Environmental Exposures

Module 2: Airborne Hazards

Module 3: Gulf War Illness

Module 4: Chronic Multisymptom Illness (CMI)

Module 5: Depleted Uranium and Toxic Embedded Fragments

Implementing  
Environmental Exposure  
Informed Care

# Asking About Military Service Is Key

In addition to asking about toxic exposures and injuries, don't forget to ask about emotional responses related to military service such as PTSD, depression, suicidal ideation, and homicidal ideation.



# Key Questions To Ask Regarding Exposures <sup>(6)</sup>

- May I ask about environmental factors during your service?
- What were you exposed to?
- Where and when were you exposed?
- How long was the exposure?
- What precautions were taken?
- What are your concerns about the exposure(s)?



# Environmental Health Registry Evaluations <sup>(15)</sup>

Airborne Hazards and Burn Pits Registry

Agent Orange Registry

Gulf War Registry

Ionizing Radiation Registry

Depleted Uranium Follow-Up Program

Toxic Embedded Fragment Surveillance

# How To File A Disability Claim With The VA <sup>(16)</sup>

- Mail (VA Form 21-526EZ: PO Box 4444 Jamesville, WI 53547)
- In Person (VA Regional Office)
- Fax (844-531-7818)
- Accredited Representative

*<https://www.va.gov/disability/how-to-file-claim/>*

# Take Home Points

1. Ask all patients about military service and exposures during service.
2. Veteran benefits have expanded under the PACT Act.
3. Use resources such as the Exposure Ed Mobile App to learn more.
4. Refer Veterans to Environmental Health Registry Evaluations.
5. Direct Veterans to the VA for their disability claim.

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# Conditions Presumed To Be Caused By Military Service Under The PACT Act

## Burn Pit Presumptive Conditions (1)

|                                    |                           |
|------------------------------------|---------------------------|
| Brain cancer                       | Asthma                    |
| Gastrointestinal cancer (any type) | Chronic bronchitis & COPD |
| Glioblastoma                       | Chronic rhinitis          |
| Head cancer of any type            | Chronic sinusitis         |
| Kidney cancer                      | Bronchiolitis             |
| Lymphoma of any type               | Emphysema                 |
| Melanoma                           | Granulomatous disease     |
| Neck cancer of any type            | Interstitial Lung Disease |
| Pancreatic cancer                  | Pleuritis                 |
| Reproductive cancer of any type    | Pulmonary fibrosis        |
| Respiratory cancer of any type     | Sarcoidosis               |

## Agent Orange Presumptive Conditions (3)

|                                   |                         |
|-----------------------------------|-------------------------|
| Hypertension                      | MGUS                    |
| Bladder cancer                    | Chronic B-cell leukemia |
| Hodgkin's disease                 | Multiple myeloma        |
| Non-Hodgkin's lymphoma            | Prostate cancer         |
| Respiratory cancers (lung cancer) | Soft tissue sarcomas    |
| AL amyloidosis                    | Chloracne               |
| Diabetes mellitus type 2          | Hypothyroidism          |
| Ischemic heart disease            | Parkinson's disease     |
| Peripheral neuropathy             | Porphyria cutanea tarda |

## Asbestos Presumptive Conditions (5)

|                          |
|--------------------------|
| Asbestosis               |
| Pleural plaques          |
| Mesothelioma lung cancer |

## Gulf War Illnesses (2)

|  |                        |             |
|--|------------------------|-------------|
| Chronic Fatigue Syndrome                                   | Tuberculosis           | Brucellosis |
| Fibromyalgia   | West Nile Virus        | C. jejuni   |
| Functional GI disorders (diarrhea)                         | Q Fever                | Shigella    |
| Nontyphoid salmonella                                      | Visceral leishmaniasis |             |
| Medically unexplained chronic multisystem illness          |                        |             |
| Other undiagnosed illnesses (headaches, muscle pains, etc) |                        |             |

## Radiation Exposure Presumptive Conditions (4)

|  |                                 |
|--|---------------------------------|
| Leukemia (all forms except for CLL)    | Urinary bladder cancer          |
| Thyroid cancer                         | Salivary gland cancer           |
| Breast cancer                          | Multiple myeloma                |
| Lung cancer                            | Posterior subcapsular cataracts |
| Non-malignant thyroid nodular disease  | Bone cancer                     |
| Liver cancer                           | Ovarian cancer                  |
| Skin cancer                            | Parathyroid adenoma             |
| Esophageal cancer                      | Tumors of the brain / CNS       |
| Stomach cancer                         | Cancer of the rectum            |
| Lymphomas other than Hodgkin's disease | Colon cancer                    |
| Pancreatic cancer                      | Prostate cancer                 |
| Kidney cancer                          | Any other cancer                |

## Camp Lejeune Presumptive Conditions (6)

|                          |                   |                         |             |
|--------------------------|-------------------|-------------------------|-------------|
| Bladder cancer           | Breast cancer     | Esophageal cancer       | Infertility |
| Renal toxicity           | Hepatic steatosis | Kidney cancer           | Lung Cancer |
| Leukemia                 | Miscarriage       | Multiple myeloma        | Scleroderma |
| Myelodysplastic syndrome |                   | Neurobehavioral effects |             |
| Non-Hodgkin's lymphoma   |                   |                         |             |

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# Questions?



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