

Environmental Exposure Informed Care For Veterans

Society of Veteran Disability Examiner PAs

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The information contained in this presentation is accurate, to our knowledge, when the recording occurred on 4/30/2024.

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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.)






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Learning 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


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Overview of Wars

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Gulf War (1990 - Present) ^(1, 2)

- 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, 5).

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Wars (continued) ⁽²⁾

- Vietnam War (1955-1975)
- Cold War Era (1945-1991)
- Korean War (1950-1953)
- World War II (1939-1945)





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Exposures Encountered By Military Personnel

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Military Exposures	
 <p>Chemical</p> <ul style="list-style-type: none"> • Weapons <ul style="list-style-type: none"> ◦ Sarin Gas ◦ Mustard Gas • Pollution • Solvents 	 <p>Biological</p> <ul style="list-style-type: none"> • Vaccinations • Infectious Disease • Biological Weapons
 <p>Psychological</p> <ul style="list-style-type: none"> • PTSD • Military Sexual Trauma 	 <p>Physical</p> <ul style="list-style-type: none"> • Blast Injury • Gunshot/Munition injury • Motor Vehicle Accident • Noise • Radiation • Heat or Cold Exposure

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Military Toxic Exposure Risk Factors

- Situational Risk Factors
 - Location
 - Military Occupational Specialty
- Duration of Exposures
- Whether or not any precautions were taken such as using personal protective equipment (6.7).

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Case

Name of Veteran: John Doe #1
 Branch: Navy
 Dates of Service 1965-1970
 Military Occupational Specialty: Pipefitter




Photo Credit: What Does A Fitter Do On Ships?
 Marine Knowledge. Accessed April 30, 2024.
<https://marine-knowledge.in/job-news/what-does-a-fitter-do-on-ships/>

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History

What were you exposed to? **Asbestos**
 Where and when was the location of the exposure? **Naval ships, 1965-1970**
 How long was the exposure? **5 years**
 Routes of exposure - oral, dermal, inhaled, mucosal? **Inhaled**
 Were precautions taken? **No precautions**
 What are your concerns about the exposure? **Mesothelioma lung cancer**

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Asbestos ®

In 1989, the EPA banned all new uses of asbestos.

Symptoms of asbestos-related diseases do not often appear until 20-50 years after the exposure.

Veterans who served in occupations that involved mining, milling, shipyard work, insulation work, demolition of old buildings, carpentry, construction may have been exposed to asbestos.

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The PACT Act

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The PACT Act ⁽⁹⁾


- 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

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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

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Case


Name of Veteran: Jane Doe #2

Branch: Army

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

Military Occupational Specialty (MOS): Artillery

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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**

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Burn Pits ⁽²⁾



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Burn Pit Presumptive Conditions ⁽⁹⁾

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		

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Case

Name of Veteran: John Doe #3

Branch: Air Force

Dates of Service 1970-1974, Vietnam

Military Occupational Specialty: Sprayed Agent Orange from Planes - Operation Ranch Hand

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Agent Orange ^(10, 11)

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.



Herbicide-sprayed areas and unsprayed areas

Photo Credit: Reference 10

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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, HTN, prostate cancer**

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Agent Orange Presumptive Conditions ⁽¹²⁾

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

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Case

Name of Veteran: **Jane Doe #4**

Branch: **Marine Corps**

Dates of Service **1975-1981**

Military Occupational Specialty:
Expeditionary Fighting Vehicle Repair Technician



Photo Credit: Expeditionary Fighting Vehicle. Wikipedia. Accessed April 30, 2024. https://en.wikipedia.org/wiki/Expeditionary_Fighting_Vehicle

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History

What were you exposed to? **Volatile Organic Compounds (VOCs) In Water**

Where and when was the location of the exposure? **Camp Lejeune 1975-1981**


How long was the exposure? **6 years**

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

Were precautions taken? **No precautions**

Concerns: **Bladder cancer**

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Camp Lejeune, North Carolina ⁽¹³⁾

Drinking water was contaminated with volatile organic compounds (VOCs)

- PCE (perchloroethylene or tetrachloroethylene)
- TCE (trichloroethylene)
- Benzene
- Vinyl Chloride

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Camp Lejeune ⁽¹³⁾

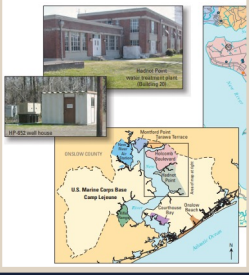



Photo Credit: Maslia ML, Suarez-Soto J, Saudner JB, et al. Chapter A: Summary and Findings: ATSDR Agency For Toxic Substances And Disease Registry. Published March 2013. Accessed April 30, 2024. https://www.atsdr.cdc.gov/toxsub/lejeune/docs/chapter_A_hadnotpoint.pdf


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Camp Lejeune Presumptive Conditions (14)

Bladder cancer	Breast cancer
Esophageal cancer	Female infertility
Hepatic steatosis	Kidney cancer
Leukemia	Lung cancer
Miscarriage	Multiple myeloma
Myelodysplastic syndromes	Neurobehavioral effects
Non-Hodgkin's lymphoma	Renal toxicity
Scleroderma	

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Educational Resources

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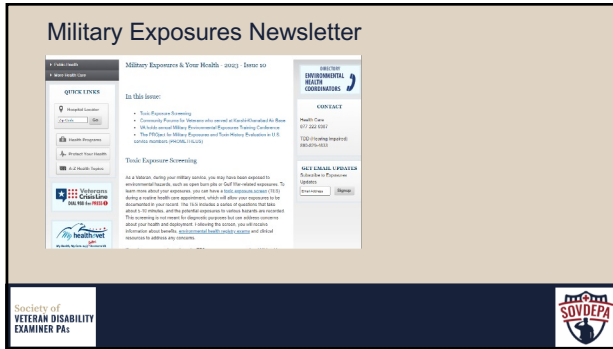
Military Occupation Search Portals

DOD COOL Portal - Research Military Occupations (osd.mil)
<https://www.cool.osd.mil/research-military-occupations.htm>

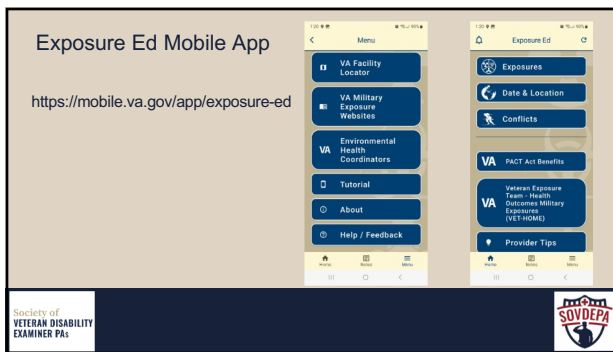
Military Careers : Occupational Outlook Handbook : U.S. Bureau of Labor Statistics (bls.gov)
<https://www.bls.gov/ooh/military/military-careers.htm>

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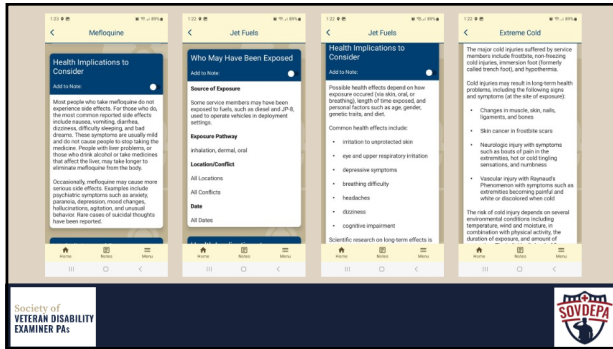
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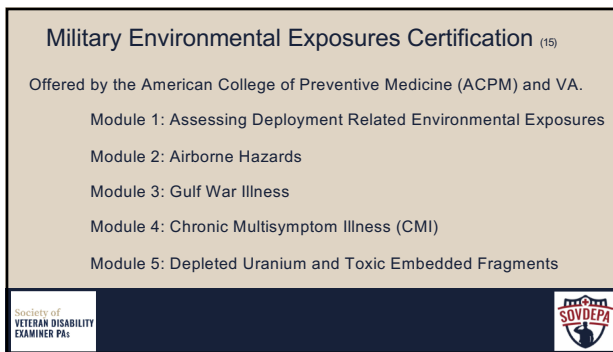
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Take Home Points


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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Environmental Health Registry Evaluations ⁽¹⁶⁾

- Airborne Hazards and Burn Pits Registry
- Agent Orange Registry
- Gulf War Registry
- Ionizing Radiation Registry
- Depleted Uranium Follow-Up Program
- Toxic Embedded Fragment Surveillance


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How To File A Disability Claim With The VA ⁽¹⁷⁾

- 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/>

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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.



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Conditions Presumed To Be Caused By Military Service Under The PACT Act			
Burn Pit Presumptive Conditions (1) Brain cancer Gastrointestinal cancer (any type) Glioblastoma Head cancer of any type Kidney cancer Lymphoma of any type Melanoma Neck cancer of any type Pancreatic cancer Reproductive cancer of any type Respiratory cancer of any type	Asthma Chronic bronchitis & COPD Chronic rhinitis Chronic sinusitis Bronchiolitis Emphysema Granulomatous disease Interstitial Lung Disease Pleuritis Pulmonary fibrosis Sarcoidosis	Gulf War Illnesses (2) Chronic Fatigue Syndrome Fibromyalgia Functional GI disorders (diarrhea) Nontyphoid salmonella Medically unexplained chronic multisystem illness Other undiagnosed illnesses (headaches, muscle pains, etc)	Tuberculosis West Nile Virus Q Fever Visceral leishmaniasis Brucellosis C. jejuni Shigella
Agent Orange Presumptive Conditions (3) Hypertension Bladder cancer Hodgkin's disease Non-Hodgkin's lymphoma Respiratory cancers (lung cancer) AL amyloidosis Diabetes mellitus type 2 Ischemic heart disease Peripheral neuropathy	MCLIS Chronic B-cell leukemia Multiple myeloma Prostate cancer Soft tissue sarcomas Chloracne Hypothyroidism Parkinson's disease Porphyria cutanea tarda	Radiation Exposure Presumptive Conditions (4) Leukemia (all forms except for CLL) Thyroid cancer Breast cancer Lung cancer Non-malignant thyroid nodular disease Liver cancer Skin cancer Esophageal cancer Stomach cancer Lymphomas other than Hodgkin's disease Pancreatic cancer Kidney cancer	Urinary bladder cancer Salivary gland cancer Multiple myeloma Posterior subcapsular cataracts Bone cancer Ovarian cancer Parathyroid adenoma Tumors of the brain / CNS Cancer of the rectum Colon cancer Prostate cancer Any other cancer
Asbestos Presumptive Conditions (5) Asbestosis Pleural plaques Mesothelioma lung cancer		Camp Lejeune Presumptive Conditions (6) Bladder cancer Leukemia Myelodysplastic syndrome Non-Hodgkin's lymphoma	Esophageal cancer Hepatic steatosis Miscarriage Multiple myeloma Neurobehavioral effects Intestine Cancer Kidney cancer Lung Cancer Scleroderma

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Questions?



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