

# GULF WAR ERA COHORT AND BIORESPOSITORY PROJECT (CSP 585)

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# Gulf War Era Cohort and Biorepository Project (CSP 585)

- **Goal:** To develop a research cohort of Gulf War Era Veterans and a biorepository to be made available for future research studies
- **Status:** Recruitment completed in May 2016 (N=1,275). First manuscript of study process and population demographics published online in AJE in 2018, second evaluating gender-based differences published in WHI in 2019. Numerous requests for data or specimens.

# GWECB Participants

- Eligibility:
  - Member of uniformed services in 1990-1991 Gulf War Era
  - Deployed and not deployed
  - Users and non-users of VHA care
  - Reside in 48 contiguous United States
  
- Consented to:
  - Survey and blood specimen
  - Future sharing of data and biospecimens
  - Recontact for resurvey and to update contact information.
  - Recontact for recruitment to future research studies

# Data Collected

- Paper survey
  - Developed in committee with Gulf War Era study experts and pilot tested; includes full MVP baseline survey
  - Topics: military service and geographic location; environmental exposures; lifestyle behaviors; physical/mental health; family health history
- VA and non-VA medical records
  - Accessed using electronic, administrative, and other sources
- Blood specimens
  - Available on 99.9% of participants
  - Includes samples of DNA, plasma, and buffy coat

# Participant Demographics

VHA users = 577

VHA non-users = 677

Characteristic	Total (N=1,275) (%)
Age at time of survey	54.6 (SD 8.0)
Sex – Male	967 (75.8)
Race	
• White	922 (72.3)
• Black/African American	270 (21.2)
• Other	62 (4.9)
• Missing	23 (1.8)
Deployed to Gulf in 1990-1991 Gulf War	900 (70.6)
Service Branch	
• Army	668 (52.4)
• Navy	232 (18.2)
• Air Force	202 (15.8)
• Marine Corps	182 (14.3)
• National Guard	149 (11.7)
• Other	14 (1.1)

# Respiratory symptoms, conditions, and exposures

- Symptoms (N=3) – presence for past 6 months (yes/no) and severity (mild/mod/severe)
- Respiratory conditions (N=2) – duration and current treatment
- Exposures (N=10) – exposure (yes/no) and duration (1-6 days, 7-30 days, 31+ days)
- Demographics did not impact presence of symptoms (breathing difficulties, frequent cough, wheezing) with exception of:
  - BMI > 30 associated with increased odds (aOR 2.6; 1.9 – 3.5) of frequent cough and wheezing.
  - VA use associated with increased odds (aOR 2.3; 1.6 – 3.2) of symptoms.

Exposure (Days)	N (%)	Breathing Difficulty (N=364)	P^	Frequent cough (N=322)	P^	Wheezing (N=239)	P^	Combined (N=510)	P^
		aRIS (95% CI)		aRIS (95% CI)		aRIS (95% CI)		aRIS (95% CI)	
<b>Chemical/biologic warfare agents</b>									
0	836 (88)	1.0 Referent	--	1.0 Referent	--	1.0 Referent	--	1.0 Referent	--
1 – 6	60 (6)	<b>1.8 (1.2-2.7)</b>	.0075	1.3 (.84 – 2.1)	.23	<b>1.9 (1.2 – 3.0)</b>	.0075	<b>1.7 (1.2 – 2.4)</b>	.0018
7+	55 (6)	<b>2.9 (1.9 – 4.4)</b>	<.0001	<b>2.0 (1.3 – 3.1)</b>	.0016	<b>3.1 (2.0 – 5.0)</b>	<.0001	<b>2.4 (1.7 – 3.4)</b>	<.0001
P-for-trend		< .0001		.0011		<.0001		<.0001	
<b>Close to smoke from oil well fires</b>									
0	393 (41)	1.0 Referent	--	1.0 Referent	--	1.0 Referent	--	1.0 Referent	--
1 – 6	113 (12)	1.3 (.86 – 1.8)	.24	1.3 (.86 – 1.9)	.24	1.1 (.72 – 1.8)	.60	1.2 (.88 – 1.6)	.27
7+	445 (47)	<b>1.6 (1.2 – 2.0)</b>	.0002	<b>1.3 (1.03 – 1.7)</b>	.030	<b>1.5 (1.1 – 1.9)</b>	.0094	<b>1.4 (1.2 – 1.7)</b>	.0003
P-for-trend		.0002		.032		.0085		.0003	
<b>Served on a ship</b>									
0	812 (85)	1.0 Referent	--	1.0 Referent	--	1.0 Referent	--	1.0 Referent	--
1 – 6	9 (1)	.93 (.29 – 3.0)	.90	.39 (.08 – 1.9)	.24	.95 (.24 – 3.8)	.94	.69 (.27 – 1.8)	.45
7+	130 (14)	.76 (.54 – 1.1)	.11	.75 (.53 – 1.1)	.11	.89 (.60 – 1.3)	.57	.78 (.60 – 1.01)	.063
P-for-trend		.11		.081		.57		.055	

# Next steps...

- Analyses underway to evaluate additional conditions including Gulf War Illness, neurologic conditions, etc.
- GWAS underway
- Data and samples continue to be shared with researchers in and outside VHA for additional analyses.
- Opportunities to resurvey participants to assess disease progression or ask additional questions.