

# Putting Research to Work for Military Families



**Focus:**  
Multiple  
Branches

## Impact of Combat Deployment and Posttraumatic Stress Disorder on Newly Reported Coronary Heart Disease Among US Active Duty and Reserve Forces

Crum-Cianflone, N. F., Bagnell, M. E., Schaller, E., Boyko, E. J., Smith, B., Maynard, C., ... Smith, T. C. (2014). Impact of combat deployment and posttraumatic stress disorder on newly reported coronary heart disease among US active duty and reserve forces. *Circulation*, 129(18), 1813-1820. doi:10.1161/CIRCULATIONAHA.113.005407

**SUMMARY:** A subset of data from current and former U.S. Military personnel participating in the Millennium Cohort Study was used to explore the role of military deployment history and posttraumatic stress disorder (PTSD) in coronary heart disease. Combat deployment was associated with newly reported coronary heart disease as well as coronary heart disease. Findings indicated that exposure to combat was more strongly related to mental and physical conditions compared to deployment alone or the number of cumulative days deployed.

### KEY FINDINGS:

- Combat deployment was associated with newly reported coronary heart disease as well as coronary heart disease defined by ICD-9 diagnosis codes. Exposure to combat appears to be a more profound stressor associated with mental and physical conditions than deployment alone or the number of cumulative days deployed.
- Screening positive for PTSD was associated with self-reported coronary heart disease prior to, but not after, deployment. A positive PTSD screen was not associated with coronary heart disease by diagnostic code.
- Male gender, older age, smoking, obesity, and hypertension were positively associated with newly reported coronary heart disease.
- New onset coronary heart disease was uncommon (1%) among young U.S. Military Service members and Veterans during the study period.

### IMPLICATIONS FOR PROGRAMS:

Programs could:

- Host classes for Service members and their families that provide information about risk factors for and symptoms of coronary heart disease
- Offer educational modules for practitioners about the role of combat deployment as a possible contributor to coronary heart disease; this information could be incorporated in existing curriculum about health and wellness
- Disseminate information regarding possible symptoms of mental health problems Service members may face after deployment and where individuals and families can find help for those problems

### IMPLICATIONS FOR POLICIES:

Policies could:

- Encourage the development and continuation of programs that can promote resilience in Service members, their partners and children
- Continue to support programs that address the unique challenges faced by deployed parents and their children
- Recommend education for professionals who work with military families on the relationship between physical health conditions, mental health, and stress

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## METHODS

- This study used a subset of participants enrolled in the Millennium Cohort Study which is a random selection of U.S. Military personnel who were serving in October 2000.
- Demographic and occupational data were obtained from the Defense Manpower Data Center, and medical record data was obtained from the DoD and TRICARE.
- Participants completed at least one of two follow-up questionnaires which assessed PTSD symptoms, combat experiences, health conditions and behaviors and data were analyzed to assess for relationships among these variables.

## PARTICIPANTS

- A total of 60,025 participants were included in the self-report portion of analyses and 23,794 participants were included in the ICD-9 analyses.
- Among the total sample, 10,602 were deployed without combat, 76% were enlisted, and 64% were Active Duty. Participants were mostly male (78%), White (70%), and most were either in the Army (32%) or Air Force (44%).
- Among the total sample, 37,143 were nondeployed Service members. Most participants were male (68%), White (71%), had an education level of some college or less (60%), and married (66%). Most participants were enlisted (74%), Active Duty (53%), and in the Army (46%) or Air Force (29%).

## LIMITATIONS

- No data on other risk factors for cardiac problems were available (e.g., serum cholesterol, diet, hereditary factors), which limits the ability to determine how much of the risk is attributed to the variables within the study.
- The follow-up period may have been too short for the development of clinically significant coronary heart disease.
- Only Active Duty participants were included in the ICD-9 code analyses due to data availability which may have skewed the results.

## AVENUES FOR FUTURE RESEARCH

Future research could:

- Continue to follow this young cohort of Service members as they age to monitor progression of health and disease
- Assess practitioner diagnosed coronary heart disease in Veterans who participated in the Millennium Cohort Study as a comparison group
- Gather data on other risk factors that can be controlled for to have a clearer picture as to which variables are the largest contributors to physical health conditions in military samples

## ASSESSING RESEARCH THAT WORKS



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