

838

AWAKENING CORTISOL AND SUBCLINICAL CARDIOVASCULAR DISEASE MARKERS IN POLICE OFFICERS: THE BUFFALO CARDIO-METABOLIC OCCUPATIONAL POLICE STRESS (BCOPS) PILOT STUDY.  
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Police officers have an increased risk of job stress and cardiovascular disease. In the BCOPS pilot study awakening salivary cortisol levels were determined in 75 Buffalo, NY police officers (42 men and 33 women) to assess the association between a biomarker of stress and subclinical cardiovascular disease (brachial artery flow mediated dilation (FMD)). Saliva was collected immediately upon awakening and at three 15-minute intervals. A competitive chemiluminescence immunoassay determined cortisol level; results were expressed as area under the curve (AUC) above baseline and classified into gender-specific low, medium and high tertiles. Ultrasound measures of FMD were expressed as % change from baseline to maximal dilation. Analysis of covariance was used to estimate unadjusted and adjusted mean % change in brachial artery dilation across cortisol tertiles, stratified by gender. Adjustment for lifestyle factors resulted in a significant inverse trend (linear  $p = 0.017$ ) in % brachial dilation across cortisol tertile levels in women, with the highest tertile having the lowest % brachial dilation (high = 1.7% vs. medium = 6.2% vs. low 5.9% dilation). No significant trend across cortisol tertiles was found in men ( $p = 0.79$ ). Results suggest that female police officers with hypersecretion of cortisol after awakening may be more likely to experience impaired endothelial function. Potential reasons for gender differences include types and severity of job and personal stress exposure.

840

SENSE OF COHERENCE AS A MODERATOR OF THE EFFECTS OF STRESSFUL LIFE EVENTS ON HEALTH.  
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Study objective: To test Antonovsky's hypothesis that sense of coherence (SOC) moderates (i.e., buffers) the health impacts of stressful life events in a population-based sample. Design: Multiple linear and Poisson regression analyses of individual level data from a national survey of population health were used to examine the relationships among SOC, the experience of recent stressful life events (e.g., family breakdown, financial crisis, physical abuse) and two outcomes, self-reported health status (SRH) and self-reported number of physician visits during the previous year. Setting: General population of Canada. Participants: Nationally representative sample of household residents aged 30 years of age or greater surveyed in 1998–1999 and 2000–2001 ( $n = 6505$ ). Main results: After controlling for age, gender and previous health status, a significant moderating effect ( $t = 2.24$ ,  $p = .025$ ) in the expected direction was found on respondents' self-reported health status (SRH). The mean difference in SRH between those who did and did not experience a stressful event was .24 (95% CI: .16–.32) in individuals with a below average SOC and .04 (95% CI: -.04–.11) in individuals with a higher than average SOC score. The postulated moderating effect of SOC was not significant ( $t = 1.1$ ,  $p > .05$ ) in predicting the number of visits to a physician. Conclusions: Sense of coherence appears to buffer the impact of recent stressful events on self-reported health status.

\* = Presenter; S = The work was completed while the presenter was a student

839

ARE POST-TRAUMATIC STRESS DISORDER SYMPTOMS A RISK FACTOR FOR ASTHMA? A TWIN STUDY. \*J Goldberg, M Fischer, R Goodwin (Vietnam Era Twin Registry/Seattle VA Epidemiology Research and Information Center, Seattle, WA 98101)

The etiology of asthma is unknown but likely involves multiple genetic and environmental factors. We assessed the heritability of asthma and examined the association of post-traumatic stress disorder (PTSD) symptoms with a diagnosis of asthma in male twins. The Vietnam Era Twin Registry includes a national sample of 2972 veteran twin pairs (average age = 41) with self-reported physician diagnosis of asthma and a symptom scale of PTSD. A classical twin study estimated the heritability of asthma. Using random effects modeling, we obtained odds ratios (OR) and 95% confidence intervals (CI) for the association of PTSD with asthma. Of 1680 monozygotic (MZ) pairs, 39 were concordant and 118 discordant for asthma; of 1292 dizygotic (DZ) pairs, 13 were concordant and 135 discordant. The twin correlations were higher in MZ ( $r = 0.69$ ) than DZ ( $r = 0.30$ ) pairs, and heritability was 68% (95% CI 39–77). In regression analysis using all twins, there was a significant trend between PTSD symptoms and asthma ( $p < 0.001$ ) even after adjustment for education, body mass index, smoking, and combat. Twins in the highest quartile of the PTSD scale were 2.5 times as likely to report asthma compared with twins in the lowest quartile (OR = 2.5, 95% CI 1.6–3.9). In the within-pair analysis, the association of PTSD symptoms and asthma persisted, even when analyzed separately in MZ twins. Our findings confirm a genetic influence on asthma and that the association between PTSD symptoms and asthma is not mediated by shared familial or genetic factors. Twin and family study designs may be especially valuable in understanding the relationship between psychiatric disorders and physical health conditions.

841

SPIRITUALITY, RELIGIOSITY, AND MENTAL HEALTH OUTCOMES AMONG A POPULATION-BASED SAMPLE OF GULF WAR AND GULF WAR ERA VETERANS. \*J W Taylor, S K Boyer, H K Kang, C M Mahan, M J Lyons, S A Eisen, C C Engel (Dept. of Veterans Affairs, Washington, DC 20420)

This cross-sectional study of Gulf War (GW) and Gulf War Era (GW-era) veterans used survey data from the 2005 Longitudinal Health Study of Gulf War Era Veterans (9,884 respondents, response rate 33%). The Duke Religion Index (organized/non-organized religion) and the Spiritual Well-Being Scale (existential well-being) measured religion and spirituality. Posttraumatic stress disorder (PTSD), probable major depressive disorder (MDD), and alcohol abuse were based on scores from the PTSD-Checklist and the Patient Health Questionnaire. Logistic regression analyses estimated adjusted odds ratios (aOR) and 95% confidence intervals (95% CI). Controlling for GW status, gender and race, those who engaged in organized religion were less likely to suffer from alcohol abuse (aOR = 0.56, 95% CI = 0.49, 0.64), MDD (aOR = 0.74, 95% CI = 0.65, 0.86), and PTSD (aOR = 0.75, 95% CI = 0.65, 0.87) compared to those who did not engage in organized religion. Non-organized religion was only associated with lower levels of alcohol abuse (aOR = 0.68, 95% CI = 0.60, 0.77). Compared to those with the lowest level of existential well-being, those with higher levels were less likely to suffer from MDD (aOR = 0.01, 95% CI = 0.01, 0.04), PTSD (aOR = 0.03, 95% CI = 0.02, 0.07), and alcohol abuse (aOR = 0.22, 95% CI = 0.10, 0.46). Logistic regression analyses stratified on GW status resulted in an aOR of 0.73 (95% CI = 0.63, 0.86) for PTSD among GW veterans who engaged in organized religion; the result was not statistically significant for GW-era veterans. In sum, organized religion and existential well-being were associated with lower levels of alcohol abuse and MDD among GW and GW-era veterans and PTSD among GW veterans.