

### 0031 LUNG FUNCTION IMPROVEMENT IS SUSTAINED AFTER WORK CESSATION IN SHANGHAI COTTON AND SILK TEXTILE WORKERS

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10.1136/oemed-2014-102362.7

**Objectives** Whether cessation of exposure to endotoxin containing organic dusts leads to transient vs. sustained improvement of lung function is unknown.

**Method** The Shanghai Textile Workers study is a 30-year prospective cohort study of 447 cotton workers exposed to endotoxin containing cotton dust and 472 control silk workers unexposed to endotoxin. Spirometry and questionnaires were administered at 5 year intervals, and endotoxin sampling was performed to estimate individual cumulative exposures. The effect of work cessation on FEV1 was modelled with a generalised additive mixed effects (GAMM) model.

**Results** When cessation was modelled as a smoothed term, adjusting for age, gender, height, and smoking history, cessation was associated with a significant FEV1 improvement in both cotton and silk workers. Work cessation displayed a non-linear quadratic effect on FEV1, with an average adjusted +38.1, +220, +316 ml effect in silk and +26.3, +184.1, +264.1 ml effect in cotton workers at 10, 20, and 25 years of work cessation. In a model allowing for a quadratic effect of cessation years as suggested by the GAMM model, the linear component of the interaction suggested that cessation of cotton work was associated with less FEV1 improvement than silk work (cotton\*cessation year interaction  $\beta = -2.6$  ml,  $p = 0.025$ ).

**Conclusions** Lung function improvement after work cessation was observed in both cotton and silk workers, suggesting that non-endotoxin containing organic dust exposure has adverse respiratory effects. The greater improvement in FEV1 in silk compared to cotton textile workers suggests that the endotoxin component of cotton dust is associated with additional detrimental effects.

### 0037 ASSOCIATIONS OF STRESS, ANXIETY, AND RESILIENCY IN POLICE WORK

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10.1136/oemed-2014-102362.8

**Objectives** Police work is an occupation replete with stress. The present study examined associations between specific police stressors (overall, administrative pressure, physical threat, and lack of support) and anxiety symptoms, and whether these associations were modified by hardiness, a dimension of resiliency.

**Method** The Spielberger Police Stress Survey, Beck Anxiety Scale, and Dispositional Resilience scale were utilised in this study. A total of 373 police officers with complete data from the Buffalo Cardio-Metabolic Occupational Police Stress (BCOPS) study were included. Linear regression and analysis of covariance were used to examine mean anxiety levels across quartiles of stress. Associations were adjusted for age, sex, race, alcohol,

smoking, and anxiety medication, and stratified by hardiness scores.

**Results** The mean age of officers was 41.4 years and 27% were female. Adjusted mean anxiety symptoms increased significantly with increasing stress quartiles overall (4.23, 4.99, 6.74 and 9.95 for quartiles 1–4, respectively,  $p < 0.001$ ) and for all three types of stressors ( $p < 0.001$ ). Hardiness did not significantly modify these associations. However, officers with hardiness scores above the median had generally lower anxiety scores than those below the median.

**Conclusions** Specific types of stress in police work are significantly associated with symptoms of anxiety. Further research is needed for individual and organisational factors which protect officers from anxiety and for policies to reduce work stress.

### 0042 CORRECTION FOR REPORTING BIAS: THE IMPORTANCE OF STRATUM SPECIFIC ESTIMATES

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10.1136/oemed-2014-102362.9

**Objectives** To examine whether reporting bias was responsible for increasing rates of self reported heart disease (SRHD) with exposure to phenoxy herbicides in a cohort of elderly grain farmers in Alberta.

**Method** We estimated exposure to chemical ingredients from named pesticides reported at interview after a lifetime of farming. Phenoxy exposure was grouped by tertiles as none, 1–22 yrs, 23–34 yrs and 35 yrs or greater. Six years after interview consent was sought from surviving farmers to link questionnaire data to provincial physician billing records. Sensitivity (Se) and specificity (Sp) were estimated for SRHD, overall and within exposure stratum, and adjusted odds ratios (ORs) calculated.

**Results** Among the cohort of 2426, 373 had SRHD: ORs, adjusted for confounding, were estimated for phenoxy tertile (compared with no exposure) as 1.32 (95% CI 0.79–2.23), 1.67 (0.99–2.85), 2.03 (1.20–3.45). For the 1371 farmers consenting to record linkage, ORs before adjustment or correction were 1.25, 1.43, 2.69. Comparing SRHD to physician billing diagnoses of heart disease gave an overall Se 0.49 and Sp 0.98. ORs were increased to 1.37, 1.65, 4.01 when corrected by these Se and Sp estimates. Differences were seen in stratum specific Se but not Sp, with significantly lower Se (0.29: 95% CI 0.15–0.48) in the group with no exposure. Applying stratum specific correction reduced ORs in all three categories (0.55, 0.82, 1.29).

**Conclusions** The correction approach used, which demonstrated the importance of stratum specific estimates, assumed no error in the validation data. Sensitivity analyses to explore this limitation will also be presented.

### 0044 UPPER AIRWAYS CANCER, MYELOID LEUKAEMIA AND OTHER CANCERS IN CHEMICAL WORKERS EXPOSED TO FORMALDEHYDE

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10.1136/oemed-2014-102362.10

**Objectives** The International Agency for Research on Cancer controversially has classified formaldehyde as a cause of



## 0037 Associations of stress, anxiety, and resiliency in police work

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*Occup Environ Med* 2014 71: A3  
doi: 10.1136/oemed-2014-102362.8

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