

Method Leptin and adiponectin levels were measured in 388 non-diabetic officers from the Buffalo Cardio-Metabolic Occupational Police Stress study, following a 12-hour fast. HRV was performed according to methods published by the Task Force of the European Society of Cardiology and the North American Society of Pacing Electrophysiology for measurement and analysis of HRV. Mean values of high (HF) and low frequency (LF) HRV were compared across tertiles of leptin and adiponectin using ANOVA and ANCOVA; trends were assessed using linear regression models.

Results Leptin, but not adiponectin, was significantly and inversely associated with HF and LF HRV. BMI and percent body fat (also waist circumference and abdominal height) significantly modified the association between leptin and LF (but not HF) HRV. Among officers with BMI <25 kg/m², the association between leptin and HRV was not significant. However, among officers with BMI ≥25 kg/m², the association between leptin and HRV was inversely related, after adjustment for age, gender, and race/ethnicity; p-values for trend (HF HRV, p = 0.019 and LF HRV, p < 0.0001). Similarly, among officers with percent body fat ≥25.5%, leptin and LF HRV showed significant, inverse associations (adjusted p for trend = 0.001).

Conclusions Our results show that leptin levels were inversely and significantly associated with HRV among all officers, and particularly among officers with higher levels of adiposity. These results suggest that increased leptin levels may be associated with CVD-related health problems.

0057 QUALITATIVE FINDINGS FROM A SAFETY COMMUNICATION AND RECOGNITION PROGRAM ON SAFETY AWARENESS AND TEAMBUILDING IN CONSTRUCTION

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Objectives To qualitatively explore the impact of a safety communication and recognition program (“B-SAFE”) on safety attitudes and beliefs among construction workers.

Method B-SAFE consisted of weekly, detailed feedback to foremen and workers on safe and unsafe work practices. B-SAFE ran for approximately 5 months on three commercial construction sites in Eastern Massachusetts. Sites were paired with a similar worksite (and same owner or general contractor), and data collection methods were identical at each site. Focus groups and key informant interviews were conducted to qualitatively assess the program’s impact on workers’ perception of site safety. Transcripts of focus groups and key informant interviews were coded and analysed for thematic content using Atlas.ti (V7).

Results At B-SAFE intervention sites, workers noted increased levels of safety awareness, communication, and teamwork, when compared to experiences on-site before the program, and to past worksites. Workers attributed an increase in morale to B-SAFE, noting that increasing safety performance feedback helped to improve safety conditions. One worker stated, “[B-SAFE] increased the level of awareness around safety conditions on-site (...) Instead of cutting corners, we’d do it right.” Workers at sites without B-SAFE noted that the safety level was comparable to past worksites.

Conclusions The B-SAFE program led to many positive changes on-site, including an increase in safety awareness, teambuilding,

and collaborative competition. Future quantitative data analysis to evaluate program effectiveness including worker surveys, safety inspections, and injury reports will augment these qualitative results.

0061 EPIDEMIOLOGICAL STUDY OF LUNG INFLAMMATION AND OXIDATIVE DAMAGE IN INDIUM TIN OXIDE WORKERS

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Objectives Indium Tin Oxide (ITO) is widely used in many kinds of touch panels nowadays. Workers could expose to ITO particles from sintering granules, splashing, pulverisation, cutting, and grinding processes. This study aimed to assess the relationship between ITO exposure and lung inflammation and oxidative damage in ITO workers.

Method We recruited 148 exposed workers and 38 control workers from ITO powder process, recycling and ITO target manufacturing plants in Taiwan. Indium in serum (S-In) and urine (U-In) was determined as biomarkers of exposure. Exposed group was further divided as high (S-In > 3 µg/L and low exposed groups (S-In ≤3 µg/L). Urinary and plasma 8-hydroxy-2-deoxyguanosine (8-OHdG), serum Clara cell protein (CC16), and fractional exhaled nitric oxide (FENO) were measured as biomarkers of oxidative damage and pulmonary inflammation, respectively.

Results The geometric mean air concentrations of indium were 0.0041 ± 2.49 mg/m³ by area sampling and 0.017 ± 5.20 mg/m³ by personal sampling. The mean S-In level and U-In level in high exposed group were 8.01 ppb and 3.45 ppb, respectively. The mean levels of S-In and U-In in high exposed group were significantly higher than those of low exposed group. The mean levels of serum CC16 and urinary 8-OHdG in high exposed group were also significantly higher than those of low exposed groups. After adjusting potential confounders, dose-response gradients were found between S-In and CC16 (p = 0.020) and between S-In and urinary 8-OHdG (p = 0.027), respectively.

Conclusions We concluded that indium particles exposure may induce lung inflammation and DNA oxidative damage.

0062 ROTATING NIGHT SHIFT WORK IN NURSES AND MIDWIVES AND LIFESTYLE

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Objectives To investigate the association between rotating night shift work and selected modifiable lifestyle factors among nurses and midwives.

Method The cross-sectional study included 725 nurses and midwives aged 40–60 (354 rotating night shift and 371 daytime workers). Occupational history and data about potential confounders were collected through in-person interview. Weight and height were measured and BMI was calculated. Associations between night shift work characteristics such as current rotating

night shift work, frequency of night duties, total duration of rotating night shift work and lifestyle factors, i.e. a) smoking cigarettes, b) alcohol consumption, c) physical activity and d) BMI were examined with logistic regression and linear regression analyses adjusted for age.

Results Smoking cigarettes was associated significantly with current rotating night shift work (OR=1.4), frequency of night shifts (OR= 1.5 and OR=1.7 among women with 5–7 and ≥ 8 night duties/month, respectively) and longer duration of the night shift work (OR=2.1 for duration >25 yrs). The total physical activity was higher among rotating night shift nurses (242 vs. 203 MET*h/week), but OR of recreational inactivity was significantly increased among rotating night shift workers (OR=1.6). Mean BMI was significantly higher among postmenopausal women working night shifts when compared to day workers (BMI= 28.9 vs. 27.6 kg/m²), with increased OR of obesity (OR=2.8). No significant associations were observed between night shift work and alcohol consumption.

Conclusions The results of our study indicate that rotating night shift work may be associated with poorer lifestyle, which may contribute to chronic diseases.

0064 LEVELS OF IDEAL, INTERMEDIATE AND POOR CARDIOVASCULAR HEALTH BY EMPLOYMENT CHARACTERISTICS IN 2005–06 NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

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Objectives Employed persons are considered healthier than the general population. Yet, between 5–18% of all coronary heart disease deaths can be attributed to occupational exposures, ranging from noise to job stress. Cardiovascular health (CVH) is based on seven modifiable characteristics (i.e. cigarette smoking, body mass index (BMI), physical activity, diet, blood pressure, and levels of total cholesterol and fasting glucose) used to categorise individuals as having poor, intermediate and ideal CVH. In this study, we compared levels of CVH among employed and unemployed participants in the 2005–2006 National Health and Nutrition Examination Survey (NHANES).

Method The study population included 935 cardiovascular disease-free participants age 20 and older (731 employed, 204 unemployed). Employment status and work characteristics were derived from self-report questionnaires. Poor, intermediate and ideal levels of CVH and its components were defined using American Heart Association criteria. Weighted means and percentages were calculated using SUDAAN 10.0; models were adjusted for age, sex and ethnicity.

Results Mean number of ideal CVH components was significantly higher for employed compared to unemployed participants; 17.7% of those employed had ideal CVH compared to 12.2% of those unemployed. Ideal CVH was significantly lower for those in construction, manufacturing and transportation industries (8.6%) and in precision, product and transportation occupations (4.4%). Ideal CVH was significantly higher for afternoon shift (26.7%) compared to night/rotating (10.9%) and day (18.2%) shift workers.

Conclusions Understanding unique stressors and exposures for persons working in manufacturing, transportation and construction industries would be an important next step in designing interventions to improve their CVH.

0065 ASSOCIATIONS OF SYMPTOMS OF DEPRESSION AND POSTTRAUMATIC STRESS DISORDER WITH PERITRAUMATIC DISSOCIATION, AND THE ROLE OF TRAUMA PRIOR TO POLICE WORK

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Objectives Our objective was to determine if symptoms of depression and posttraumatic stress disorder (PTSD) are associated with peritraumatic dissociation, and if this association is modified by trauma prior to police work.

Method Symptoms of depression, PTSD symptoms, peritraumatic dissociative experience (PDE), and trauma before police work were measured using the Centre for Epidemiologic Studies Depression scale, PTSD Check List-Civilian Version, PDE questionnaire, and the brief trauma questionnaire, respectively in 328 police officers. Separate regression models were used to assess if either symptoms of depression or symptoms of PTSD were associated with PDE stratified by prior trauma. Means were adjusted for race, number of drinks per week, and smoking.

Results PDE was significantly positively associated with symptoms of PTSD and depression ($\beta = 0.642$, $p = 0.0001$ and $\beta = 0.276$, $p = 0.0002$, respectively). PDE was positively associated with symptoms of PTSD regardless of trauma before police work ($\beta = 0.599$, $p < 0.0001$ (without prior trauma), 0.750 , $p < 0.0001$ (with prior trauma). In contrast to PTSD, depression symptoms were significantly associated with PDE scores in individuals with prior trauma ($\beta = 0.466$, $p = 0.0001$), but not in individuals without prior trauma ($\beta = 0.130$, $p = 0.155$).

Conclusions The results indicate that an increase in PDE is associated with an increase in symptoms of depression and PTSD. The results also show that PDE is associated with symptoms of PTSD regardless of prior trauma. In contrast, PDE was associated with depression symptoms only in individuals with prior trauma, indicating prior trauma may modify this relationship.

0069 PSYCHOSOCIAL WORK FACTORS, OCCUPATIONAL NOISE EXPOSURE, COMMON MENTAL DISORDERS, AND THE RISK OF TINNITUS

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Objectives Tinnitus is common, can be disabling, and may impair concentration, hearing and sleep. Noise induced hearing loss, other subtypes of hearing loss and ototoxic drugs are well-documented risk factors for tinnitus. Psychosocial work factors, depression and anxiety may exacerbate tinnitus, cause tinnitus, or both. The objective is to investigate the relationship between noise exposure, psychosocial work factors, common mental disorders, and tinnitus

Method A total of 554 workers within 10 manufacturing trades and children day-care participated in this cross-sectional study from 2009–2010. The study database contained information on individual short-term and long-term noise exposure levels, hearing levels and questionnaire information on common mental disorders and psychosocial work factors. Associations between