

**Method** Changes in ventilatory and haemodynamic parameters during occupational exposure to ultrafine particles summers studied using a survey-type retrospective cohort exposed unexposed conducted in a company producing agricultural equipment for a period of five month period from January 1 to May 30, 2013 in 139 subjects, including 107 exposed men and 3 unexposed.

The survey consisted of a questionnaire (WHO), a complete physical examination with measurement of blood pressure before and after the job, a spirometer before and after the job.

**Results** 18.7% were presented, a type of respiratory symptoms in chronic bronchitis against only 6.3% of non-exposed with a statistically significant difference ( $P = .04$ ).

The prevalence of chronic bronchitis was significantly higher in smokers than in nonsmokers with 23.3% against 7.6% respectively. ( $P = .01$ ).

The papers have a higher incidence of lung disease than unexposed with 83.2% of restrictive lung disease after exposure in exposed against 78.1% in the unexposed.

Smokers with normal spirometry is less than non-smokers before and after exposure with the following frequencies after exposure: 12.1% in non-smokers against only 4.1% in smokers.

On haemodynamic parameters was noticed an increase in TAP (47.87 mmHg), FC (76.16 mm Hg) after exposure in exposed.

**Conclusions** Our results have demonstrated the harmful effects of ultrafine particles on changes in ventilatory and haemodynamic parameters.

#### 0100 SEVERITY OF ILLNESS ASSOCIATED WITH WATER RECREATION

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**Objectives** We evaluated the severity of illness among those engaging in limited-contact water recreation such as boating, fishing, kayaking, and rowing.

**Method** Data were obtained from a cohort study which assessed the development of illness following water recreation. Disease severity was defined as symptom-days, the total number of days with symptoms related to gastrointestinal illness, respiratory illness, or eye, ear, and skin symptoms. Severity was evaluated in association with the degree of water exposure. Analysis included logistic regression and G-computation.

**Results** 11 297 participants completed the cohort study, of which 2301 developed symptoms related to gastrointestinal illness, respiratory illness, or eye, ear, or skin infection. When evaluating both ill and healthy participants who participated in water recreation, total symptom-days ranged from 0–67, and exhibited a right-skewed distribution. When dichotomized at the 90<sup>th</sup> percentile, there was a crude relative risk (RR) of 1.47 (1.27–1.72) for those getting their face wet during water recreation, and a RR of 1.65 (1.28–2.12) for those indicating that they swallowed water during water recreation.

**Conclusions** Increased water exposure, resulting in getting the face wet, or swallowing water is related to increased disease severity among water recreators. Further analysis is necessary to determine if any covariates such as age, race/ethnicity, gender, or previous comorbidities modify or confound the relationship between water exposure and disease severity.

#### 0101 WORK HOURS, JOB STRAIN, AND OCCUPATION WITH ENDOTHELIAL FUNCTION: THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS (MESA)

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**Objectives** To investigate associations of work hours, job control, job demands, job strain, and occupational category with endothelial function, a predictor of cardiovascular disease (CVD).

**Method** Currently employed participants free of CVD ( $n = 1499$ ; 55.5% men; 62% non-white) of the Multi-Ethnic Study of Atherosclerosis provided information on work hours, job decision latitude, and job demands. Responses to current occupation were coded using the Census 2000 Occupational Codes; codes were collapsed to provide four occupational categories. Brachial artery flow-mediated dilation (FMD), a validated measure of endothelial function, was obtained using high-resolution ultrasound. Mean values of FMD, expressed as percent change in brachial artery diameter, were examined across categories of work hours ( $<40$ , 40, 41–49,  $\geq 50$ ) and the other exposures using ANOVA/ANCOVA.

**Results** Occupational category was significantly associated with FMD overall, with Blue-collar workers showing the lowest mean values after adjustment for age, gender, race/ethnicity, education, waist circumference, total and HDL cholesterol, body mass index, systolic and diastolic blood pressure, physical activity, smoking status, and pack-years of smoking: Management/Professional =  $4.96 \pm 0.22\%$ ; Sales/Office =  $5.06 \pm 0.27\%$ ; Services =  $4.70 \pm 0.29\%$ ; Blue-collar workers =  $4.18 \pm 0.27\%$  (adjusted  $p = 0.001$ ). There was evidence of effect modification between occupational category and FMD by gender ( $p = 0.031$ ) such that in stratified analyses, significant associations were observed among women (adjusted  $p = 0.002$ ) but not men (adjusted  $p = 0.098$ ). None of the other work exposures were significantly associated with FMD.

**Conclusions** Blue-collar workers had decreased endothelial function compared to other workers; potential reasons should be examined in future studies. Decreased endothelial function may reflect a biological mechanism explaining occupational differences in CVD.

#### 0102 A RETROSPECTIVE COHORT MORTALITY STUDY OF US PHOSPHATE INDUSTRY WORKERS: AN UPDATE

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## Poster presentation

**Objectives** To evaluate the mortality experience among all workers (n = 3199) employed at a phosphate fertiliser plant in central Florida beginning 1953 and followed through 2005.

**Method** All-cause, all-cancers, and cause-specific standardised mortality ratios (SMRs) were calculated with the U. S. population as referent. Lung cancer and leukaemia risks were further evaluated using conditional logistic regression. Employment duration was used as an exposure surrogate for dose-response analyses.

**Results** The mortality due to all causes combined (SMR=1.07, 95% confidence interval (CI)=1.01–1.13, observed deaths n = 1124), lung cancer (SMR=1.25, 95% CI=1.04–1.49, n = 122), leukaemia (SMR=1.76, 95% CI=1.02–2.81, n = 17), and chronic obstructive pulmonary disease (SMR=1.45, 95% CI=1.09–1.89, n = 54) were significantly elevated. All-cancer mortality was elevated (SMR=1.09, 95% CI=0.97–1.22, n = 303) but not statistically significant for the cohort. Dose-response modelling with adjustments for gender and race did not show statistically significant associations between employment duration (in years) and lung cancer (Odds Ratio (OR)=0.99, 95% CI=0.97–1.02) or leukaemia (OR=1.01, 95% CI=0.96–1.06) mortality.

**Conclusions** Findings are suggestive of increased lung cancer and leukaemia mortality from exposures encountered in the phosphate fertiliser industry. Increased employment duration, however, did not have significant associations with increased lung cancer or leukaemia mortality.

#### 0104 THE IMPACT OF OCCUPATIONAL STRESS ON SUICIDE IDEATION OF SUBWAY DRIVERS

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**Objectives** To investigate and manage subway drivers' mental health, we conducted a temporary mental health checkup on the subway drivers of one transportation company, and analysed the relationship between the suicide ideation and occupational stress factors.

**Method** The subway drivers (n = 995) were asked to fill out a questionnaire and individual interviews were conducted afterwards. Interviews were performed using Korean Composite International Diagnostic Interview (K-CIDI). Participants were classified into two groups; suicide ideation group (SIG) and non suicide ideation group (NSIG). Socio-demographic factors, health information, occupational characteristics, Korean Occupational Stress Scale (KOSS), Davidson Trauma Scale (DTS) and Centre for Epidemiological Studies-Depression Scale (CES-D) were included in the questionnaire. Relationship between occupational stress and the suicide ideation within a year were analysed using multiple logistic regression.

**Results** Logistic regression model after adjusting the age showed that domains of Job demand, Insufficient job control, Interpersonal conflict, Lack of reward, Occupational climate had significant relationship with suicidal ideation. Another model that adjusted factors that was significant in descriptive statistics revealed that domains of Insufficient job control (OR=2.223), Interpersonal conflict (OR=2.478), Lack of reward (OR=2.701) had significant relationship with suicidal ideation.

**Conclusions** Three occupational stress domains of KOSS had statistically significant relationship with the suicidal ideation

within a year after adjusting occupational factors that was related to it. To prevent subway drivers' suicide ideation, stress management program should be applied to this group.

#### 0109 STUDY ON DISEASES OF THE SKIN IN AN INDUSTRIAL POPULATION OF A PETROCHEMICAL SITE IN SICILY

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**Objectives** The study 'Skin Project' took place over three years (2010–2012) in a petrochemical site in Sicily, in order to identify skin diseases and the risk of pre-cancerous changes. The idea for the study came from an evaluation of mortality data for skin diseases published by the province of Siracusa in the journal 'ATLAS RERURUM cognoscere causas' 2003–2005.

**Method** The health service of the petrochemical company had addressed first the interest towards its employees, directing them to the screening of skin disorders and in particular towards pre-cancerous and non precancerous forms. The first pilot to assess the eventual success of the project was launched in 2010; the public was invited to undergo a skin examination and videodermatoscopy and epiluminescence mapping, simply by calling a dedicated health service number. The first cases also showed the need to reach an agreement with the city hospital for the surgical removal of malignant growths.

The visit was carried out by a medical doctor specialising in dermatology, in this case the primary dermatologist of ASP Syracuse and heightened by the use of dermoscopy and epiluminescence. The use of non-invasive technology allowed the study to show the morphological structural of the pigmented lesions.

**Results** From October 2011 to October 2013, 788 dermatological and videodermatoscopy with epiluminescence have been carried out, identifying and permitting the surgical removal of 10 melanomas surface, 6 basal cell epithelioma and the identification of more than 40 individuals with dysplastic moles.

**Conclusions** During the medical examination carried out by the qualified doctor or dermatologist, the patient is asked to undergo a primary prevention and skin self-examination. The study showed a significant effect on the onset of skin diseases compared to the national population and correlated with sun exposure from a young age or from the high temperatures recorded in recent years in Sicily between 2006 and 2012. We report the cases of 3 person a 48 year old male that in two sessions a year apart has seen a trasformation of his nevus after the removal of melanoma surface. of a subject of 40 years old whom removed a melanoma in the region above the right eye-brow and a third case of a man 52 years old removed a melanoma of the left ear.

#### 0110 CANCER MORTALITY AMONG STYRENE AND FIBREGLASS EXPOSED WORKERS IN THE REINFORCED PLASTIC BOATBUILDING INDUSTRY

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**Objectives** Mortality was updated through 2008 for 5203 workers exposed to styrene, fibreglass, and wood dust between



## 0102 A Retrospective Cohort Mortality Study of US Phosphate Industry Workers: An Update

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