employment characteristics (paid vs. self-employed workers), smoking, alcohol consumption, and physical activity.
Conclusions Our current results suggest that high emotional demand in both genders as well as low job control in men might play a crucial role in increasing the odds of suicidal ideation in sales and services workers. These serious links were still significant after controlling for individual risk factors such as for age, household income, and lifestyle factors. Furthermore, strong additive relationships of combination of high emotional demand with low job control to the odds of suicidal ideation were found both in men and women.

0132 DO PARTICIPANTS WHO COMPLETE A TELEPHONE SURVEY IN A LANGUAGE OTHER THAN ENGLISH DIFFER TO THOSE WHO COMPLETE THE SURVEY IN ENGLISH?

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Objectives Limited research indicates that using English-language only surveys in prevalence studies conducted in the general population or in specific ethnic populations may result in unrepresentative samples and biassed results. In this study we investigated whether participants from ethnic minorities who chose to complete a study interview in a language other than English (LOTE) differed from those who completed the interview in English.
Method This study was conducted within the Migrant Australian Workplace Exposure Study, a population-based telephone survey that assessed the prevalence of exposure to occupational carcinogens among 749 workers of Chinese, Vietnamese and Arabic ancestry. The study was conducted in Australia in 2013. Modified Poisson regression determined the demographic factors associated with completing the interview in a LOTE.
Results Participants who completed the interview in a LOTE differed from those who completed the interview in English on several demographic factors, including sex, city of residence and country of birth. They were more likely to have a post-school qualification and to speak a LOTE at home, and were also more likely to be exposed at carcinogens at work compared with those who completed the interview in English (40% compared with 29%, $P_{Difference}$ <0.01).
Conclusions The participants who choose to complete the study interview in their native language had several demographic differences to those participants who completed it in English, and were more likely to be exposed to carcinogens at work. Prevalence studies that offer only English-language study instruments are unlikely to produce representative samples of minority groups, and may therefore produce biassed results.

0136 RESPIRATORY SURVEILLANCE IN THAI AUTOMOBILE WORKERS

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Objectives To survey the pulmonary function test in automobile workers.
Background There are some working processes in automobile factory that can affect lung function. Thailand had developed health surveillance in respiratory e.g. predicted values of pulmonary function test for Thai population for a decade.
Methods A cross-sectional survey was conducted during June–August 2013 among the workers. Data was collected through periodic examination from 165 people who participated in the study.
Results All workers were male. They were 26–54 years of age and their average working years were 8.8 ± 2.6 years. The report of abnormal pulmonary function test was 12.7% (21 people). They were found to have restricted lung function and had mild to moderate severity without any abnormal chest X-ray. There was 19% (4 people) who had abnormal as same as the previous test in 2012. There was 47% (10 people) who work in welding and body painting zone. The other biological monitoring 2,5-dioxohexane, Toluene, Xylene was done in 17 people who were exposed to these substances and the level was normal.
Conclusions Pulmonary function test is a useful test especially for health surveillance in welding and painting zone even though occupational or work related lung disease was not diagnosed. The environmental examination should be done to explain the working condition.

0138 THE ASSOCIATION OF BLOOD LEAD LEVELS AND BONE DENSITY IN DIFFERENT COMBINATIONAL SNP POLYMORPHISMS AMONG TAIWAN LEAD WORKERS

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Objectives Past researches almost explored the relationship between a single gene with a single disease. Our study aims to investigate into the interaction of multi-gene with a single disease by using Genetic Algorithms.
Method Samples in this study are from a lead battery factory in Taiwan. We collected the data of their bone density, blood lead levels and 6 SNPs (ACE, alpha-adducin, Bsm, Tag, Apa, ALAD) from 1990 to 2009. When in 2009, a total of 502 employees in this factory. And we used Genetic Algorithms and logistic regression analysis that the genotype in an individual.
Results In this study, our findings suggest that when people's genotype combined Bsm bb and ALAD 1–1, it will have a protective effect on bone density. It means the Taiwanese lead worker with genotypes of Bsm bb and ALAD 1–1, would have less chance to have low bone density (OR: 0.58; 95% CI: 0.95–0.35).
Conclusions We found the results by using Genetic Algorithms and logistic regression analysis that the genotype in an individual which are Bsm bb type and ALAD 1–1 type plays an important role in protecting bone density among 245 male employees and 261 female employees. In conclusion, our study found Bsm gene and ALAD gene influence bone density. However, the mechanism and the exact relationship between two genes and bone density need further investigation.

0144 SICK LEAVE PATTERNS AS PREDICTORS OF DISABILITY PENSION OR LONG-TERM SICK LEAVE: A 6.75-YEAR FOLLOW-UP STUDY IN MUNICIPAL ELDERCARE WORKERS

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Objectives The public health care sector is challenged by high sick leave rates among home-care personnel. This group also has a high probability of being granted a disability pension. We studied whether a workplace-registered frequent short-term sick leave spell pattern was an early indicator of future disability pension or future long-term sick leave among eldercare workers.

Method 2774 employees' sick leave days were categorised: 0–2 and 3–17 short (1–7 days) spells, 2–13 mixed short and long (8+ days) spells, and long spells only. Disability pension and long-term sick leave were subsequently identified in a National register. The cumulative incidence proportion as a function of follow-up weeks was estimated using the Kaplan-Meier curve. The relative cumulative incidence (RR) of experiencing one of these events within 352 weeks was analysed in a generalised linear regression model using the pseudo values method adjusted for age, occupation and unfavourable work factors.

Results A frequent short-term and a mixed sick leave pattern increased the RR of being granted a disability pension; the RR was 2.08 (95% CI: 1.00–4.35) and 2.61 (95% CI: 1.33–5.12). Inversely, the long-term sick leave pattern was not associated with a significantly increased RR compared with a non-frequent short-term pattern. The risk of long-term sick leave was significantly increased (1.35–1.64 (95% CI: 1.12–2.03) for all sick leave patterns beyond 0–2 short spells.

Conclusions Sick leave length was a better indicator of future workability than spell frequency. Preventive actions should target employees engaged in home-care having sick leave spells exceeding seven days, irrespective of spell frequency.

0146 EXPOSURE TO RESPIRABLE WELDING FUME AND IRON STATUS IN GERMAN WELDERS

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Objectives Siderosis due to excessive iron exposure is a rare disease in welders. Less is known about the effect of inhaled iron on systemic iron status in welders. Here we present the association between exposure to iron as major constituent of the welding fume and the iron status in German welders.

Method In this analysis we included 192 welders from the German WELDOX study not wearing respirators. Respirable welding fume was measured during one shift and analysed for its metal content. Iron status was assessed with different measures, including serum iron, serum ferritin (SF), transferrin, and prohepcidin. High iron stores were classified according to international standards. The influence of exposure to iron and other factors on the iron status was analysed with multiple regression models.

Results Median shift exposure to respirable iron was 88 µg/m³ (interquartile range 13–690 µg/m³). For the overall study population the prevalence of high iron stores (SF > 200 µg/L) was 31.3%. A lower prevalence was found for tungsten inert gas (TIG) welders (16.9%). For all other welders using welding techniques with higher emission rates it was 38.6%. The regression models revealed a significant association of respirable iron and prohepcidin (exp (β)=1.08, 95% CI 1.05; 1.11) and a weaker association between respirable iron and serum ferritin (exp (β) =1.06, 95% CI 1.00; 1.12).

Conclusions Although the iron status is biologically well regulated we found positive associations of respirable iron in welding fumes on prohepcidin and ferritin. We observed more welders with high iron stores in comparison to male persons from the general population.

0147 META-ANALYSIS ON NIGHT SHIFT WORK AND RISK OF METABOLIC SYNDROME

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Objectives This study aims to quantitatively summarise the association between night shift work and the risk of metabolic syndrome (MetS).

Method We systematically searched all observational studies published in English on Pubmed and Embase from 1971 to 2013. We extracted effect measures (relative risk, RR; or odd ratio, OR) with 95% confidence interval (CI) from individual studies to generate pooled results using meta-analysis approach. Pooled RR was calculated using random- or fixed effect model. Downs and Black scale was applied to assess the methodological quality of included studies.

Results A total of 13 studies were included in the meta-analysis. The pooled adjusted RR for the association between "ever exposed to night shift work" and MetS risk was 1.57 (95% CI = 1.24–1.98, $p_{heterogeneity}$ = 0.001). Further stratification analysis for gender, MetS definition and study population demonstrated similar trends. The sensitivity analysis confirmed the stability of the results and no publication bias was detected.

Conclusions The present meta-analysis suggests that night shift work is significantly associated with the risk of MetS, showing a positive dose-response relationship with the intensity of night shifts. Large-scale well-design prospective studies are required to further investigate the association, especially in Asia countries.[National Natural Science Foundation of China (Project number 81273172 and 81372964), Shelly@cuhk.edu.hk (Lap Ah Tse)]