| 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)]