bases regarding construction workers in Korea will be shown.

Oral Presentation

Other

0236 DID A LEGISLATIVE CHANGE ENABLING USE OF PART-TIME SICK LEAVE AT AN EARLY STAGE OF WORK DISABILITY ENHANCE WORK PARTICIPATION IN FINLAND?

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Background The introduction of part-time sick leave to enhance work participation has been adopted in several countries, including all Nordic countries.

Objectives To assess the effectiveness of the use of part-time sick leave at the early stage (first 12 weeks) of work disability due to mental disorder or musculoskeletal disease on work participation.

Method In a nation-wide register-based quasi-experimental study we compared sustained return to work (RTW) and 2 year work participation between the part-time and full-time sickness absence benefit groups using propensity score matching. Persons who received partial or full sickness absence benefit between January 1, 2010 and December 31, 2011 were eligible as cases or controls, respectively. Work participation was calculated as the proportion of time within 2 years when participants were gainfully employed and did not receive either partial or full ill-health-related or unemployment benefits.

Results Sustained RTW was observed more frequently in the part-time than in the full-time sick leave group. A difference was seen in both genders, those aged 45–64 years and especially in mental disorders. Overall work participation during the 2 year follow-up was at a higher level in the part-time sick leave group compared with the full-time sick leave group. The difference was larger in men than women and in mental disorders than in musculoskeletal diseases.

Conclusion The use of part-time sick leave during the first 12 weeks of work disability enhances overall work participation during a two-year period. The prescription of part-time sick leave can be recommended at an early stage of work disability.

Poster Presentation

Cardiovascular Disease

0237 THE RELATIONSHIP BETWEEN HEART RATE VARIABILITY AND 5 YEAR RISK OF CARDIOVASCULAR DISEASE: EVIDENCE FROM THE TAIWAN BUS DRIVER COHORT STUDY

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Background We conducted a cohort study to evaluate the effectiveness of heart rate variability (HRV) to assess for the 5 year risk CVD event. The aim of our study is to find the association between HRV indices and the risk factors of reduced HRV, the association between HRV indices and CVD.

Methods The Taiwan Bus Driver Cohort Study recruited 1650 professional drivers from a large bus company in Taiwan since 2005. We only selected professional drivers whose total driving period exceeded 100 days during the 3 years. The remaining 1149 drivers completed the survey.

Results We found drivers whose driving duration more than 8 years showed the lowest risk of CVD (HR: 0.25, 95% CI 0.12 to 0.51, $p < 0.001$). Drivers who had the drinking habits had higher CVD risk (HR: 2.19, 95% CI 1.38 to 3.50, $p = 0.038$). BMI, SBP, DBP, Total cholesterol, Triglycerides were significantly associated with decreased HRV variables. When we compare HRV components between subjects with CVD and non-CVD group, decreased LF is found in CVD group ($p = 0.028$), especially for hypertensive disease ($p = 0.039$).

Conclusions This study concludes that among several HRV indices LF is an independent predictor of CVD. Moreover, there is much overlap in modifiable biological risk factors between reduced HRV and CVD. Therefore, we need to find whether a factor affect reduced HRV more or CVD risk more. Further research should be conducted regarding measures to change the modifiable risk factors of reduced HRV, and to investigate whether these interventions could reduce CVD risk in professional drivers.

Oral Presentation

Cancer

0239 RADON EXPOSURE AND LUNG CANCER MORTALITY IN THE GERMAN URANIUM MINER COHORT – RESULTS FROM THE EXTENDED FOLLOW-UP TO 2013 IN THE WISMUT STUDY

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Background A causal association between exposure to radon and its progeny and lung cancer is well established. However, a better knowledge on effect modification by time, age and exposure rate and on risk at low exposures or exposure rates is of high importance.

Method We analysed 58 974 male uranium miners of the German Wismut cohort with a mortality follow-up from 1946 to 2013 and a sub-cohort of 26 765 miners hired after 1960 characterised by radon values at low exposure-rates. Internal Poisson regression was applied to estimate the Excess Relative Risk (ERR) per unit of cumulative radon exposure in Working Level Months (WLM) with exponential time-related effect modifiers.

Results In the full cohort the crude ERR/WLM was 0.0019 (95% confidence interval (CI): 0.0017;0.0022) based on 3.947 lung cancer deaths. Age at median exposure, time since median exposure, and exposure-rate were strong effect modifiers. Taking them into account led to an estimate of 0.0067 (95%CI: 0.0052;0.0087) for an age at median exposure of 30 years, a time since median exposure of 20 years, and an exposure-rate of 3 WL (strong inverse exposure-rate effect). In the 1960+ sub-cohort, the crude ERR/WLM was 0.0111 (95%CI: 0.0064;0.0173) based on 495 lung cancer deaths. In this relatively young sub-cohort, time since median exposure was also a strong modifier, leading to an ERR/WLM of 0.0165 (95%CI: 0.0083;0.0247) at time since median exposure of 20 years.

Conclusion The present findings provide evidence for an increased lung cancer risk also at low exposures or exposure rates among miners.

Poster Presentation

Exposure Assessment

0240

MONITORING OF ASBESTOS FIBRE DISPERSION FROM A FACTORY TO SURROUNDING RESIDENTIAL ENVIRONMENT

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Background Although many studies on occupational or environmental exposure levels of asbestos have been published, it is hard to find studies that checked asbestos levels of both of inside and outside of asbestos factory. This fact make epidemiologists connect occupational and environmental asbestos exposure and health outcome simultaneously. One large asbestos textile factory, which was moved from Japan around year 1970, moved from Korea into Indonesia around year 1990.

Methods The study was conducted during 26-28th August 2008 in Cibinong, Indonesia. The field survey was carried out to check current workers' and environmental exposure level of the factory that was moved from Korea. The observed asbestos environmental asbestos levels were compared with atmospheric dispersion models (AERMOD).

Results Inside of the factory, the highest airborne asbestos concentration was 86 times higher than the permit level 0.1fiber/cc. The working condition was similar with 80 s' of Korean working condition. Dispersion pattern of asbestos from a factory was related with wind direction. The correlation coefficient (r) and determination coefficient (r²) between air monitoring data and simulation data with AERMOD were 0.85 and 0.72 respectively.

Conclusion We confirm that asbestos workers in Indonesia had high exposure level of asbestos without proper protecting devices. Substantial level of environmental dispersion of asbestos from asbestos factory were found. This data can be used for basis of environmental exposure assessment for environmental asbestos related diseases. In addition, it is needed to transfer knowledge to protect hazards of asbestos with efforts to ban it to asbestos using countries.

Oral Presentation

Working Conditions

0241

RESULTS OF A SYSTEMATIC REVIEW ON THE EFFECTS OF CLIMATE CHANGE ON THE HEALTH AND PRODUCTIVITY OF WORKERS

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Introduction Climate change can impact on workers' health in different ways: the increase of ambient temperature can generate heat-related illnesses, cardiovascular, respiratory and kidney diseases; extreme weather conditions can cause traumatic injuries and acute deaths; the expansion of vectors habitat can cause the increase of vector-borne diseases. In addition, the reduced work capacity can result in a lower labour productivity. The aim of the systematic literature search we are conducting as part of the EU-funded Project HEAT-SHIELD is to explore the effects of climate change on the health and productivity of workers.

Methods Four separate search strategies were conducted. The first three were focused on the health impacts of, respectively, increased ambient temperatures, extreme weather conditions, expansion of vectors habitats; the fourth was aimed to assess the effect of climate change on labour productivity.

Results For each retrieved study, we are gathering specific information. From a preliminary assessment of the literature retrieved, the population more frequently studied is the working population as a whole, followed by miners and farm workers. The most studies health outcomes are heat-related illness, physiological parameters and workers hydration status (using urine specific gravity as a proxy).

Conclusions The results of our systematic reviews will be useful for policy makers to adequately plan and coordinate actions involving particularly the strategic industries targeted by the HEAT-SHIELD Project (manufacturing, construction, transportation, tourism and agriculture), and will therefore serve as a tool to prevent heat-related illnesses and promote labour productivity, innovation and implementation in the EU.