

haematopoietic malignancies and other cancers following occupational styrene exposure.

Method The cohort consists of 74 902 workers (84% men) in the Danish reinforced plastics industry, originating from 481 companies ever producing reinforced plastics in Denmark 1964–2009. We identified all workers in the National Supplementary Pension Fund Registry for which all employees are compulsory members. Cancer diagnoses were found in the National Cancer Registry. Standardised Incidence Rate Ratios (SIRs) and 95% confidence intervals (95% CI) were used for relative risk estimation.

Results Among the 74 902 workers, we identified 10 374 cases of cancer accumulating 1.5 million person years. The overall SIR was 1.00 (95% CI 0.98–1.02). SIR for lymphatic and haematopoietic cancers was 0.99 (0.91–1.07). Among male workers we observed increased risk of buccal cavity and pharyngeal cancers (SIR 1.24; 1.12–1.37), cancers of the respiratory system (SIR 1.33; 1.26–1.39), and bladder cancer (SIR 1.08; 1.0–1.17), and among female workers cancers of the respiratory system (SIR 1.41; 1.22–1.62).

Conclusions The cohort experiences the same overall cancer risk as the general population and no increased overall risk of malignant haematopoietic diseases was apparent. However, we observed increased risks for cancers that may be due to confounding from smoking and alcohol. Internal risk assessment that includes historical styrene exposure data will supplement the current findings.

0178 QUALITY OF LIFE OF WORKERS SUFFERING FROM SHOULDER PAIN

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Objectives To compare the quality of life (QoL) in three groups of workers suffering or not from shoulder pain (SP) lasting more than one month during the preceding 12 months.

Method Between 2002–2005, 3710 workers were randomly included in a French surveillance system of work-related musculoskeletal disorders. In 2007, 2332 responded to a follow-up questionnaire, 2049 were still active. Workers completed the Nordic Questionnaire to assess SP and the SF-36 for QoL. Three groups were defined according to health status at follow-up:

- Group 1: workers without SP (men: 87.9%; women: 79.2%)
- Group 2: workers with SP without neck, elbow and hand/wrist pain lasting more than one month during the preceding 12 months (men: 4.2%; women: 6.0%)
- Group 3: workers with SP and neck, elbow or hand/wrist pain lasting more than one month during the preceding 12 months (men 7.9%; women 14.8%)

The mean scores of SF-36 were compared with Kruskal-Wallis test and post-hoc comparisons were performed. Analyses were stratified by gender.

Results Workers in group 2 had lower scores of physical health compared to workers in group 1, whatever the gender. Workers in group 3 had lower scores of physical and mental health compared to workers in group 1. Two dimensions of mental health

in men and the four dimensions of physical health and one dimension of mental health in women had lower scores in group 3 compared to group 2.

Conclusions Workers with SP and upper-limb pain have poorer QoL compared to workers without SP and workers with SP without upper-limb pain.

0179 INDEPENDENT MEDICAL EVALUATIONS - IMPORTANT, NEGLECTED, IN NEED OF REFORM: A SYSTEMATIC REVIEW

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Objectives Independent medical evaluations (IMEs) are a common and influential form of assessment, often influencing whether patients receive compensation for an injury or illness. To inform the evidence-base underlying IMEs, we conducted a systematic review of all primary literature conducted in North America.

Method We searched CINAHL, EMBASE, MEDLINE and PsycINFO and other sources for studies published through to Sept. 20, 2011. We included all primary literature on the topic of IMEs from a North American perspective. Assessment for study inclusion, data extraction and risk-of-bias analyses were performed in duplicate.

Results We included 52 studies, all of which were observational in design and most of which focussed on determining the rate of malingering among examinees. Estimates of non-credible symptom over-reporting among patients presenting for IMEs ranged from 16% to 55%, with studies at lower risk of bias finding higher estimates. Other studies found that inter-rater reliability among IME assessors for assigning degree of impairment to the same IME report was poor, and that patients presenting for an IME with external incentive (e.g. litigation, disability benefits) perform systematically worse across a range of psychometric tests versus patients presenting with similar illness/injury but without external incentive.

Conclusions Symptom exaggeration is common among patients presenting for IMEs, and particularly among those patients with external incentive. IME assessors reviewing the same case demonstrate little agreement regarding the degree of impairment that should be assigned. Standards for IME assessment and reporting are urgently needed to ensure greater reliability and validity of this common form of assessment.

0180 DOES LONG-TERM STRESS CAUSE DEPRESSION? OCCUPATIONAL NOISE EXPOSURE AND THE USE OF ANTIDEPRESSANTS

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Poster presentation

Objectives The aim is to examine occupational noise exposure as a risk factor for depression, utilising noise exposure as an objective measure of distressing working conditions that circumvents reporting bias.

Method In a 7-year cohort study we followed 109 378 industrial workers and 45 613 financial workers from 2001 or first year of employment thereafter until 2007. At start and end of follow up we recorded mean, full-shift noise exposure levels by personal dosimeters for 1077 workers from randomly selected companies. We assumed a linear relation with calendar year and predicted exposure levels by trade and occupation since 1980 and calculated cumulative noise exposure. Danish national registries provided complete employment histories since 1980, psychiatric diagnoses (1977–2001), and redemption of antidepressants (Selective Serotonin Reuptake Inhibitors, SSRI) (1994–2007). Workers with psychiatric diagnoses or use of antidepressants before 2001 were excluded.

Results During follow-up we identified 7754 incident users of SSRIs. Among women, risk of starting SSRI medication increased by cumulative noise exposure level OR=1.02 (95% CI: 1.01–1.02) per dB(A)-year when adjusted for age, calendar year and socioeconomic status. When excluding white-collar workers no effect was seen among women and no effect of noise was apparent among men overall.

Conclusions These preliminary results do not provide strong evidence that occupational noise exposure is a risk factor for depression. The increased OR seen among all women can be explained by differences in socioeconomic status between the blue-collar industrial workers and the white-collar financial workers since no trends were apparent in internal analyses among blue-collar workers.

0181 ASSOCIATIONS BETWEEN PRE-DEFINED OCCUPATIONAL JOB TASKS AND BREAST CANCER RISK

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Objectives The role of occupational exposures in agricultural and industrial settings has been addressed in several breast cancer studies. Recently, the influence of shift work in nurses added as an occupational hazard that has been intensively discussed. Here, we investigate the association of job tasks in the industrial and health sector and breast cancer in a large case-control study.

Method The population-based case-control study *Gene-Environment Interaction and Breast Cancer* (GENICA) was conducted in the Greater Region of Bonn, Germany. Occupational history and job task information were collected in computer-assisted interviews. Thirty pre-defined job tasks were assessed for 1143 cases and 1155 controls in addition to the occupational history. Risk estimates were calculated as odds ratios (ORs) with 95% confidence intervals (CIs) conditional on age and adjusted for potential confounders.

Results First preliminary results indicate an increased age-adjusted risk for women who ever worked in anaesthesia (OR

1.87; 95% CI 1.03–8.0), based on fourteen cases and five controls.

Conclusions Our study revealed an increased risk for ever working in anaesthesia. This elevated risk might origin from chemical exposures or night shift work. Interactions between exposures and night work might be relevant in the progression of breast cancer. However, the results of this study are limited by the low prevalence of risk jobs and specific exposures.

0186 GENDER BIAS IN OCCUPATIONAL EPIDEMIOLOGY RESEARCH: A SYSTEMATIC REVIEW ON WORK-RELATED LUNG CANCER

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Objectives The “one-eyed science” pointed out by some authors has contributed to the invisibilization of working conditions as a health determinant among women. Our objectives were to document current epidemiological practices in the assessment of work-related lung cancer risks, and to discuss how gender-related biases compromise the scientific validity of exposure and risk estimates among women, as compared to men.

Method A systematic literature review over the last 7 years was performed, and based on the screening of 410 abstracts retrieved from PubMed, 122 articles were retained. Data were collected through a questionnaire, and analysed both quantitatively and qualitatively. Articles were classified according to the gender distribution of the study sample as either men only, women only or mixed.

Results Androcentrism was present, as nearly 50% of studies recruited men-only participants. Moreover, 45% of them were subject to an overgeneralization of study results. Gender-insensitivity could be observed from the papers (35%) which did not provide justification for the gender composition of study sample. A double standard was also suspected in the exposure assessment methods. Sex and gender-related terms were found to be frequently used interchangeably.

Conclusions Upgraded results with an increased sample size are forthcoming. Meanwhile, these preliminary results raise the question of the “gender bias” in epidemiology, and how sex and gender should be taken into account in the design, conduct, analysis and dissemination of results in order to minimise gender-related biases and reinforce the scientific validity of research.

0189 APPLICATION OF A DYNAMIC POPULATION-BASED MODEL TO ASSESS THE EFFECT OF SILICA EXPOSURE INTERVENTIONS ON COPD IN DUTCH CONSTRUCTION WORKERS: RESULTS FROM THE ‘RELIEVED WORKING STUDY’

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Objectives A multidimensional intervention aimed at reducing silica exposure in the Dutch construction industry was performed. The objective of this study was to assess the effect of