

**0280 OCCUPATIONAL RISK FACTORS FOR PROSTATE CANCER: A CASE-CONTROL STUDY IN GUADELOUPE (FRENCH WEST INDIES)**

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**Objectives** To study the associations between occupation, industry and prostate cancer risk in Guadeloupe, a high incidence area.

**Method** Incident cases of prostate cancer (707 cases) and 722 population controls were included. Information on lifetime occupational history and other potential risk factors was collected by interview. Logistic regression was used to estimate adjusted odds-ratios (OR) and their 95% confidence intervals (CI).

**Results** A significantly decreased risk was observed in farmers (OR=0.5; CI 0.4–0.7), whereas marginally elevated ORs were found for farm workers, especially in sugarcane and banana farming. Banana plantation workers had been exposed to chlordane, an estrogenic insecticide previously found to be associated with prostate cancer risk in this population. Significantly increased risks of prostate cancer were found in stock clerks (OR=2.7; CI 1.0–7.2), fishermen (OR=2.0; CI 1.0–4.0), mail distribution clerks (OR=7.7; CI 1.7–34.4) and electricians employed for more than 20 years (OR=4.0; CI 1.0–15.8), as well as in public administration (OR=1.8; CI 1.2–2.9), retail trade (OR=2.6; CI 1.1–6.0) and manufacture of food products (OR=2.0; CI 1.1–3.9), particularly sugar (OR=13.2; IC 1.6–108). Non-significantly elevated ORs were also seen for construction workers and transport equipment operators.

**Conclusions** Although the overall findings suggest that occupational factors have only a limited role in prostate cancer aetiology, elevated risks of prostate cancer were found in several occupations or industries. Exposure to pesticides, solvents, traffic-related air pollution, low physical activity, whole-body vibration may explain some of these increased risks.

**0281 THE RELATIONSHIP BETWEEN SOCIOECONOMIC POSITION, WORKING CONDITIONS AND SICKNESS ABSENCE IN A LIFE-COURSE PERSPECTIVE**

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**Objectives** Socioeconomic position (SEP) in childhood and in adulthood, and work environment factors are predictors of sickness absence (SA). Our objective was to examine the relationships between these factors in a life-course perspective, which has hardly been done previously.

**Method** Our study sample was all employed individuals who partook in the HUNT study and who were born between 1967 and 1976 (N = 4530). Outcome was the risk of at least one SA episode in 2009. Educational attainment (5 categories) served as indicator of adult SEP, whereas highest parental education level and father's average income during early childhood (0–6 years) were indicators of childhood SEP. Work factors were job control, physically demanding work and shift work. Risk ratios (RRs) were estimated using Poisson regression.

**Results** 29% of the women and 17% of the men had SA during follow-up. There was a strong gradient according to adult SEP

for both genders. The age-adjusted RR for having an SA episode, comparing highest and lowest educational levels, was 2.83 for women and 3.85 for men. The RR was marginally weakened in women (-4%) and strengthened in men (+18%), after adjusting for childhood SEP (Model 2). Including all work factors in the model reduced the RRs by 20% compared to Model 2 (RR 2.20 and 3.62, respectively), the largest impact for physically demanding work (15% reduction in RR).

**Conclusions** There were strong social gradients in SA, partly mediated through work environment factors in a life-course perspective. We found gender differences that are difficult to explain.

**0283 MESOTHELIOMA INCIDENCE AND OCCUPATION IN THE NORDIC COUNTRIES – A FOLLOW UP DURING FOUR DECADES**

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**Objectives** The purpose of this study was to study differences in incidence of malignant mesothelioma between the Nordic countries.

**Method** We used data from the ongoing Nordic Occupational Cancer Study (NOCCA). Occupational title by 3-digit level was obtained from the countries' population and housing censuses in 1960, 1970, 1980 and 1990. A job-exposure matrix (JEM) was developed, including 25 carcinogens with specific exposure levels for 283 occupations for years 1945 to 1994, using national exposure databases and expert assessments. All mesothelioma cases (ICD-7 158 for peritoneum and 162.2 for pleura) in the Nordic countries 1961–2005 were identified through linkages with national cancer registers. We calculated Standardised Incidence Ratios (SIR) of mesothelioma for 53 occupations/occupational categories for men and women and linked with the NOCCA JEM.

**Results** A total of 7899 persons were diagnosed with mesothelioma in the Nordic cohort from 1961 to 2005, of which 24.3% were women. There was an increased significant SIR of mesothelioma among 15 of the 53 occupations/occupational categories for men, and for nine different occupations for women. The men's excess risk was observed in typical male-dominated occupations, highest for plumbers (SIR 4.64, 95% CI 4.09 to 5.24), with a total of 241 cases.

**Conclusions** We found great consistency among men between countries with occupations associated with asbestos exposure. For women, we found greater diversity between countries and risk assessment in occupations not associated with asbestos exposure. Unclear diagnosis of mesothelioma of the peritoneum and misclassification of occupation may be behind this.

**0284 OCCUPATIONAL EXPOSURE AND STROKE – A CRITICAL REVIEW OF SHIFT WORK, AND WORK-RELATED PSYCHOSOCIAL RISK FACTORS**

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**Objectives** Stroke is the third most common cause of death in developed countries, exceeded only by coronary heart disease and cancer, but there is still little knowledge on occupational risk factors. A systematic critical review was performed to assess the strength of evidence for causal associations between work-related psychosocial risk factors, shift work and stroke.

**Method** Literature on stroke incidence or mortality and occupational factors published up to 2012 was identified from Medline and other relevant databases. The 4 471 abstracts were evaluated independently by two reviewers. Six studies relevant to shift work and eight studies (among them four cohorts from Scandinavia) exploring job strain, job control or other job related “stress” exposures were identified. The evidence for an association was assessed according to defined criteria as strong, moderate, limited, or insufficient.

**Results** There is limited evidence for an association between shift work and stroke, mainly based on results from two occupational cohorts.

There is also limited evidence for high job strain or low job control from cohort studies. Case- crossover studies, which would better reflect short-term effects, were lacking, and the only case-referent study found was very small.

**Conclusions** There is now fairly solid evidence that shift work and work-related psychosocial stress are risk factors for coronary heart disease; a fact that supports an association also with stroke, another cardiovascular disease. However, the epidemiological evidence for stroke is limited, with few studies, and very limited exposure information. Better study designs are needed to elucidate accumulated as well as triggering/short time effects.

#### 0290 CANCER RISKS AMONG CANADIAN MINING WORKERS IN A POPULATION-BASED COHORT

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**Objectives** Mining workers in Canada may be exposed to several potential carcinogens including crystalline silica, various metals, and diesel exhaust. This study aimed to assess the risk of cancer among male mining workers employed in various Canadian mining sectors.

**Method** The Cohort was created by Statistics Canada through the linkage of the 1991 Canadian Census (long form) to the Canadian Mortality Database, Canadian Cancer Registry, and annual Tax Summary Files (1991–2006). This linkage resulted in a cohort of 1.1 million working males aged 25–74, including over 14 000 workers employed in the mining industry. Cox proportional hazards modelling was used to estimate hazard ratios (HR) and corresponding 95% confidence intervals, adjusted for age and region.

**Results** There were 700 cancers among 660 mining industry workers. There was an increased risk for rectal cancer (HR: 1.37, 1.01–1.88), particularly in gold mining (HR: 3.11, 1.47–6.56). Increased risks of kidney and prostate cancer were observed for coal mining (HR: 2.71, 1.12–6.57 and HR: 1.80, 1.10–2.94, respectively), and esophageal cancer in metal mining other than gold or iron (HR: 2.78, 1.13–6.80). There were also elevated risks for stomach and laryngeal cancer among mining workers.

**Conclusions** This study identified increased risks of rectal, kidney, prostate, and esophageal cancers among male mining industry workers employed in specific sectors. There are also a number of limitations and challenges that accompany the investigation. Our findings may have important implications for our understanding of occupational cancer risk factors and potential policy interventions in the mining industry.

#### 0291 DOSE-TIME-RESPONSE ASSOCIATION BETWEEN OCCUPATIONAL ASBESTOS EXPOSURE AND MESOTHELIOMA

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**Objectives** In case-control studies on cancer, occupational exposure to a specific agent is often summarised through a cumulative index of exposure at the time of diagnosis/interview. This cumulative index is the sum, over all years of exposure to the agent, of the dose received each year. This gives the same weight to each dose, whether this dose was received in the first years of exposure or at a shorter distant time from the diagnosis/interview. This assumption is unlikely to be reasonable for asbestos and mesothelioma.

The objectives of this study were to estimate the weight of each dose of asbestos received in the past, and to compare the risk of mesothelioma associated with different profiles of exposure, using French case-control data.

**Method** From a French case-control study, 1199 male cases and 2379 male controls were recruited in 1987–2006. Occupational asbestos exposure was assessed using a job exposure matrix, and represented in logistic regression models by a flexible time-dependent weighted function of the dose.

**Results** The impact of a given increase of the dose depended on when the dose was received. It allowed us to compare the risk of subjects who were exposed for a long duration at a low dose with subjects who were shortly exposed to a high dose at different distant times from diagnosis/interview.

**Conclusions** This study provides new insights on the dose-time-response relationship between occupational asbestos and mesothelioma, and an illustration of the use of an approach that could be of interest for other associations.

#### 0292 COMPARISON OF PERSONAL HABITS AND BASELINE KNOWLEDGE OF HEALTH PROMOTION AMONG STUDENTS OF THE FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO

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**Objectives** Because of the importance given to the implementation of health promotion programs nowadays generating positive outcomes important to society and especially to businesses, employees and the financial market this study was designed to assess students' baseline knowledge of expertise in occupational medicine on health promotion and correlate it with the