

0276 THE ROLE OF VARIOUS PREDICTORS OF SEIZURE RECURRENCE IN ASSIGNMENT OF YOUNG MEN TO PROFESSIONS WITH ASSOCIATED EXPOSURE TO (SEIZURE) RISK FACTORS

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Objectives To study the risk of epileptic seizures as a function of disease severity and occupational stress (physical and mental) in new military recruits in the Israel Defense Forces (IDF).

Method The medical records of over 145 000 18-year old men, recruited to the IDF between the late-nineties and early two-thousands, were used to assemble a cohort, which was followed for a period of 36 months. The severity of the disease was determined according to 5 categories. Recruits were subdivided according to the following occupational categories: Combat Units (CU), Maintenance Units (MU) and Administrative Units (AU).

Results The annual incidence rate for a first seizure was 26/100 000. The rates in CU and MU were lower than AU (0.41 and 0.81 vs. 1 respectively, $p < 0.01$). Similar findings were found in other disease categories.

Conclusions The low rate for a first seizure and the lower overall seizure rate in CU compared to MU and AU may be explained by the recruiting of a healthy population, higher motivation than before, and meticulous adherence to diagnostic criteria. The higher recurrence rate in our research as compared to the previous follow up, may be attributable to the modification of disease categories. Our findings suggest moderating occupational restrictions for epilepsy patients and using EEG and relapse-free periods of 2–6 years as fitness for work criteria. We propose the reassessment of severity criteria currently used by the IDF.

0277 ENVIRONMENTAL EXPOSURE TO NANOPARTICLES IN SARDINIA, ITALY: A PILOT STUDY OF RESIDENTIAL EXPOSURE NEARBY AN INDUSTRIAL AREA AND A MILITARY SHOOTING RANGE

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Objectives Objective of our pilot study was to explore the airborne ultrafine particle count in residential areas nearby industrial and military settings with reference to urban and rural areas.

Method We monitored airborne ultrafine (ranging 7nm - 10 microm) particles in residential areas nearby a large oil refinery, a military shooting range, in the largest urban area in the region and in a rural area. We conducted eight samplings (6 h each) using a Electrical low pressure impactor (ELPI plus - Dekati, Tampere, Finland). Wind speed and direction, temperature and humidity during each sampling were registered. Data on other potential sources of ultrafine particles, from

both anthropic and natural origin, were also resigeterd. The airborne nanoparticle concentration was expressed as particle count/ cm³.

Results The median ultrafine particle count was 7408 (max 179605)/cm³ in the residential area nearby the oil refinery, 9079 (max 114281)/cm³ nearby the military shooting range, 19040 (max 142324)/cm³ in the urban area and 25419 (max 373434) in the rural area.

Conclusions Our results show that ultrafine particles were ubiquitous in the sampling sites. Median counts were higher in the rural area than nearby industrial and military settings. We speculate that anthropic activities, including widespread use of wood burning fireplaces in rural areas, as well as technical measures to control industrial particulate emissions implemented in the past years, might have contributed. Further studies and additional sampling will allow a more detailed picture of exposure levels to better characterise risk of possible adverse health outcomes associated with environmental exposure to nanoparticles.

0279 HEAD AND NECK CANCER AND OCCUPATIONAL EXPOSURE TO CHLORINATED SOLVENTS: RESULTS FROM THE ICARE STUDY

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Objectives To investigate the associations between head and neck cancer risk and occupational exposure to chlorinated solvents.

Method ICARE is a population based case-control study conducted in France. Analyses were restricted to men and included 1833 cases of head and neck squamous cell carcinomas (HNSCC) and 2747 controls. Complete occupational history was collected. Job-exposure matrices allowed to assess exposure to five chlorinated solvents (trichloroethylene, perchloroethylene, methylene chloride, chloroform and carbon tetrachloride). Odds ratios (ORs) adjusted for smoking, alcohol drinking and other potential confounders and 95% confidence intervals (CI) were estimated with logistic models.

Results No association was found for occupational exposure to trichloroethylene, methylene chloride, chloroform and carbon tetrachloride, and no dose-response relationships were observed. A non-significantly increased risk of HNSCC was observed for perchloroethylene (OR=2.1, CI 0.7–6.3), when comparing the highest tertile of cumulative exposure with no exposure. Analysis by cancer site showed that this increased risk was limited to laryngeal cancer. The risk of laryngeal cancer increased with cumulative exposure to perchloroethylene (p for trend=0.03), with a significantly elevated OR (OR=5.0, CI 1.6–15.6) for the highest tertile of cumulative exposure. Exposure to perchloroethylene was not associated with the risk of oral or pharyngeal cancer. No associations were found between other chlorinated solvents and any of the cancer sites.

Conclusions These findings suggest that high levels of exposure to perchloroethylene may increase the risk of laryngeal cancer. Our study does not provide evidence that other chlorinated solvents are risk factors for HNSCC.

Poster presentation

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 chlordecone, 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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