

Method Using the WSIB administrative database, we acquired a random sample of 6665 injured workers who reported an uncomplicated back injury (strain or sprain) with a date of injury between January 1, 2005 and June 30, 2005. We selected, *a priori*, 11 variables from the database that we judged may be associated with claim closure and predicted the direction of anticipated effects. We performed a time-to-event analysis using Cox proportional hazards regression to assess the association between time to claim closure and the independent variables. Receipt of WSIB-reimbursed chiropractic care or physiotherapy were treated as a time-dependent covariate to account for when treatment was initiated during the course of the disability claim.

Results Our adjusted regression analysis showed that older age and opioid prescription (adjusted hazard ratio [HR]=0.69; 99% CI=0.53, 0.89) in the first 4-weeks of claim reimbursed by the WSIB were associated with prolonged claim closure, whereas working for an employer that had a return-to-work program was associated with shorter claim duration (adjusted HR=1.73; 99% CI=1.42, 2.12). Neither reimbursement for chiropractic or physiotherapy were associated time to claim closure.

Conclusions Our analysis suggests that commonly reimbursed treatment for Workers' Compensation LBP claimants may be ineffective or even harmful.

0183 FACE VALIDITY AND INTER-RATER AGREEMENT BETWEEN EXPERT ASSESSMENTS OF OCCUPATIONAL MECHANICAL EXPOSURES IN A LOWER BODY JOB EXPOSURE MATRIX

¹Poul Frost, ²Tine Steen Rubak, ³Johan Hviid Andersen, ³Jens Peder Haahr, ⁴Ann Isabel Kryger, ¹Lone Donbæk Jensen, ³Susanne Wulff Svendsen. ¹Danish Ramazzini Centre, Department of Occupational Medicine, Aarhus University Hospital, Aarhus, Denmark; ²Department of Occupational Medicine, Slagelse Hospital, Slagelse, Denmark; ³Danish Ramazzini Centre, University Department of Occupational Medicine, Herning Regional Hospital, Herning, Denmark; ⁴Department of Occupational and Environmental Medicine, Bispebjerg Hospital, Copenhagen, Denmark

10.1136/oemed-2014-102362.71

Objectives We constructed a lower body job exposure matrix (JEM) based on five experts' assessments of occupational mechanical exposures. The aim of this study was to evaluate the face validity of the rankings of the job groups and the inter-rater agreement between the experts' rankings.

Method The JEM cross tabulates the mean of five experts' assessments of daily duration (hours/day) of standing/walking, kneeling/squatting, and whole-body vibration as well as total load lifted (kg/day), and frequency of lifting loads weighing ≥ 20 kg (times/day) in 121 job groups comprising occupational titles with expected homogeneous exposure patterns. The JEM covers 689 occupational titles, which were considered more than minimally exposed, out of 2227 in the Danish version of the International Standard Classification of Occupations. Weighted kappa statistics were used to evaluate inter-rater agreement on rankings of the job groups for four of these exposures. Two external experts checked the face validity of the rankings of the experts' mean values.

Results The experts' ratings showed fair to moderate agreement (mean weighted kappa values between 0.36 and 0.49). The external experts agreed on 586 of the 605 rankings.

Conclusions Experts agreed on rankings of the job groups, and rankings based on mean values had good face validity. However, further validation is warranted based on technical measurements or observations. The lower body JEM, which provides exposure

estimates free of recall bias, has been applicable in exposure response studies of hip and knee osteoarthritis, inguinal hernia repair, varicose veins, and lumbar disc disorders.

0184 MORTALITY PROFILE OF THE FRENCH COHORT OF URANIUM PROCESSING WORKERS

¹Eric Samson, ¹Irwin Piot, ¹Sergey Zhivin, ²Alain Acker, ²Pierre Laroche, ¹Dominique Laurier. ¹IRSN, Fontenay-Aux-Roses, France; ²AREVA, Paris, France

10.1136/oemed-2014-102362.72

Objectives A cohort of nuclear workers employed in the fuel processing cycle was set-up in France in 2009 to assess the risk of cancer and non-cancer mortality related to uranium, in a context of occupational multi-exposure. Vital status and causes of death are now available.

Method The cohort includes workers employed at least 6 months between 1958 and 2006 by AREVA and CEA (French Atomic Energy Commission). Exposure assessment was realised by a dual approach combining individual monitoring data and specific job-exposure matrices, considering radiation exposures, chemical agents and physical stresses (heat and noise). Additional information like tobacco consumption and various clinical parameters (Body Mass Index, blood pressure, lipid profile etc.) was also collected from the Occupational Health Services. Vital status and causes of death were collected from French national registries.

Results The cohort includes 12 739 workers (88% men) with an average duration of employment of 17 years. The median year of birth is 1944. At the end of follow-up (31/12/2010), 19% are deceased and 96% of the causes of death are identified. Cancers (mainly lung, prostate and lymphatic and haematopoietic tissue cancers) represent 43% of all causes of death, non-cancers (mainly diseases of the circulatory system) 48% and external causes 9%. The analyses using French national mortality rates as reference will be presented.

Conclusions The observed mortality is that of an even young population and at this stage no further conclusions can be drawn. This cohort, with this wealth of data, will be very informative for the investigation of uranium related risks.

0187 ALCOHOL CONSUMPTION AS A CONFOUNDER IN NEUROBEHAVIORAL STUDIES OF NEUROTOXICANTS

¹Rita Bast-Pettersen, ²Maxim Chashchin, ²Valery Chashchin, ¹Yngvar Thomassen, ¹Dag G Ellingsen. ¹National Institute of Occupational Health, Oslo, Norway; ²Northwest Public Health Research Centre, St. Petersburg, Russia

10.1136/oemed-2014-102362.73

Objectives To study the effects of manganese (Mn) exposure and alcohol consumption on tremor.

Method Tremor was measured in 137 shipyard welders (age 39.9) and 137 referents (turner/fitters) (age 40.1) with the Catsys TREMOR. Alcohol consumption was assessed by measuring serum carbohydrate deficient transferrin (sCDT).

Results The geometric mean (GM) of Mn air concentration was $214\mu\text{g}/\text{m}^3$ (range 1–3230). The GM concentrations of Mn in whole blood (B-Mn) and urine (U-Mn) were $12.8\mu\text{g}/\text{L}$ and $0.36\mu\text{g}/\text{g}$ creatinine versus $8.0\mu\text{g}/\text{L}$ and $0.07\mu\text{g}/\text{g}$ creatinine in the referents. Concentration of sCDT (%) was 0.71 in welders and 0.65 in referents.

No significant differences in tremor measures were found when all welders were compared with all referents. Altogether twenty-five subjects had sCDT above the pathological level 1.7%.

The subjects with high sCDT had increased tremor. Dominant hand: Tremor Intensity 0.21 m/s², compared to 0.15 m/s² (p < 0.001) for subjects with sCDT < 1.7%. Non-dominant hand: Tremor Intensity 0.22 m/s² vs 0.15 m/s²; (p < 0.001).

The same pattern was found when the 16 welders with sCDT ≥ 1.7% were compared with welders with sCDT values < 1.7%. The concentrations of the biological exposure indicators were similar in the welders with sCDT ≥ 1.7% compared to the other welders (B-Mn 12.8 vs 12.7 µg/L; U-Mn 0.34 vs 0.36 µg/g cr.; S-Mn 1.3 vs 1.0 µg/L).

Conclusions No effect of manganese exposure on tremor was observed, in contrast to a large effect from alcohol consumption. The results suggest that alcohol consumption can operate as a serious confounder in epidemiological studies of neurotoxicants.

0188 THORACIC SPINAL PAIN PREVALENCE IN THE MUSCULOSKELETAL DISORDERS SURVEILLANCE NETWORK OF THE FRENCH PAYS DE LA LOIRE REGION

^{1,2}Natacha Fouquet, ²Julie Bodin, ³Alexis Descatha, ^{2,4}Audrey Petit, ^{2,5}Aline Ramond-Roquin, ¹Catherine Ha, ^{2,4}Yves Roquelaure. ¹French Institute for Public Health Surveillance, Department of Occupational Health, Saint-Maurice, France; ²LUNAM University, University of Angers, Laboratory of Ergonomics and Epidemiology in Occupational Health (LEEST), Angers, France; ³Inserm, Centre for Research in Epidemiology and Population Health (CESP), U1018, "Population-Based Epidemiological Cohorts" Research Platform, Villejuif, France; ⁴CHU Angers, Angers, France; ⁵LUNAM University, University of Angers, Department of General Practice, Angers, France

10.1136/oemed-2014-102362.74

Objectives Prevalence studies of thoracic spinal pain (TSP) in the working population are scarce. The epidemiological surveillance of musculoskeletal disorders (MSDs), implemented in 2002 by the French Institute for Public Health Surveillance, allows the study of the prevalence of TSP in a large sample of workers. The aim of this study is to present the prevalence of TSP during the preceding 7 days in the Pays de la Loire region's workforce according to age, combination with low back pain and neck pain, occupational category and industry sector, separately in men and women.

Method A random sample of 3710 workers (58% of men) aged 20–59 years, representative of the regional workforce, was constituted between 2002 and 2005. Medical and occupational data were gathered by questionnaire.

Results The prevalence of TSP was higher among women (17.4%) than men (9.2%), without age difference. Only 15.2% of TSP in men and 15.7% in women was declared without low back pain or/and neck pain. Among men, lower-grade white-collar workers were more likely to report TSP (16.6%) than other occupational categories workers (upper white-collar and professionals: 7.2%, technicians/associate professionals: 6.5%, blue-collar workers: 9.7%). Among women, upper white-collar and professionals were more likely to report TSP (25.6%) than the others (technicians/associate professionals: 17.0%, lower-grade white-collar workers: 17.1%, blue-collar workers: 16.7%). The study did not suggest a significant difference in the prevalence of TSP according to sectors in either men or women.

Conclusions This study shows that, among workers, TSP is frequent and often combined with low back pain or neck pain.

0193 PREDICTION OF MENTAL OUTCOMES BY EARLY CONDITIONS AFTER OCCUPATIONAL INJURIES

^{1,2}Leon Guo, ³Kuan-Han Lin, ⁴Nai-Wen Guo, ⁵Judith Shu-Chu Shiao, ⁶Shih-Cheng Liao, ⁷Pei-Yi Hu, ⁷Jin-Huei Hsu. ¹Environmental and Occupational Medicine, National Taiwan University College of Medicine (NTU) and NTU Hospital, Taipei, Taiwan; ²Institute of Occupational Medicine and Industrial Hygiene, National Taiwan University School of Public Health, Taipei, Taiwan; ³Department of Social Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan; ⁴Institute of Behavioral Medicine, National Cheng Kung University, Tainan, Taiwan; ⁵Department of Nursing, College of Medicine, National Taiwan University (NTU) and NTU Hospital, Taipei, Taiwan; ⁶Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan; ⁷Institute of Occupational Safety and Health, Councils of Labor Affairs, Taipei, Taiwan

10.1136/oemed-2014-102362.75

Objectives Psychiatric diseases have been an important complication after occupational injuries. This study aimed to determine early factors predicting psychological health outcomes at twelve months after occupational injuries.

Method The study candidates were workers who sustained occupational injuries and were hospitalised for 3 days or longer in 2009. A self-reported questionnaire was sent to them at three months after injury. The questionnaire inquired about demographics, severity of injury, working status, personal factors, as well as included a psychometric instrument Brief Symptom Rating Scale (BSRS-50). At one year, all participants were invited again to complete a questionnaire including BSRS-50.

Results A total of 853 workers completed the questionnaire at three months and 12 months after injury. Among them, 84 (9.3%) had general severity index (GSI) of 70 or higher at 12 months after injury, indicating poor psychological condition. Using multivariate logistic regression analysis for mutual adjustment, predictive factors for elevated GSI were found to include dismemberment or affected physical appearance (OR 1.7, 95% CI 1.0–3.1), BSRS at 3 months after injury (OR 8.8, 95% CI 5.4–14.4), and having to leave original workplace (OR 2.5, 95% CI 1.4–4.3). The findings indicated that severity of injury, early psychological condition, and workplace accommodation to allow returning to original workplace are important factors for later psychological health after occupational injury.

Conclusions Among workers sustaining occupational injuries, psychological condition could have been affected at 12 months after injury. Predictors of the psychological condition were identified, to allow for possibility of early intervention.

0194 CIRCULATORY SYSTEM DISEASE MORTALITY AMONG FRENCH URANIUM MINERS

¹Damien Drubay, ¹Sylvaine Caër-Lorho, ²Pierre Laroche, ²Alain Acker, ¹Dominique Laurier, ¹Estelle Rage. ¹Institute for Radiological Protection and Nuclear Safety, Fontenay Aux Roses, France; ²AREVA, Paris, France

10.1136/oemed-2014-102362.76

Objectives There is currently no consensus for an association between risk of Circulatory System Diseases (CSD) and low exposure to ionising radiation. The aim is to study the relationship between CSD mortality and radon exposure in the French cohort of uranium miners considering classical CSD risk factors.

Method The French cohort includes 5086 uranium miners followed from 1946 through 2007. Among the 1935 deaths, 442 were from CSD, including 167 cases of IHD and 105 cases of CVD. Annual radon exposures were assessed individually. A