

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/s<sup>2</sup>, compared to 0.15 m/s<sup>2</sup> ( $p < 0.001$ ) for subjects with sCDT  $< 1.7\%$ . Non-dominant hand: Tremor Intensity 0.22 m/s<sup>2</sup> vs 0.15 m/s<sup>2</sup>; ( $p < 0.001$ ).

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

**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

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**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

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**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

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**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