

## Poster Presentation

### Exposure Assessment

#### 0462 A COMPARISON OF DISTAL UPPER LIMB PHYSICAL EXPOSURE QUANTIFICATION TOOLS: THE STRAIN INDEX, ACGIH TLV FOR HAL, AND THE RECENTLY DEVELOPED REVISED STRAIN INDEX

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**Introduction** There are several questionnaires and observational measurement tools to quantify distal upper limb (DUL) physical exposures. Perhaps the most commonly used observational methods are the Strain Index (SI) and the ACGIH TLV for HAL. However, there is currently no "gold standard" observational tool.

**Methods** Data from recently conducted prospective cohort studies of DUL musculoskeletal disorders (MSDs) were used to compare the SI, TLV for HAL, and the newly developed Revised Strain Index (RSI). A total of 3647 tasks performed by 710 workers were evaluated. When a tool lacked specific guidance, generally accepted techniques (e.g., time-weighted-averaging) were used to handle task complexity and multi-task jobs.

**Results** the SI, RSI, and TLV for HAL provide inconsistent estimates of physical exposure and predicted risk of DUL MSDs. Correlations and weighted kappa scores between the model's ranged from poor to good (e.g., weighted-kappa range: 0.16 to 0.82).

**Conclusions** Neither the TLV for HAL nor the SI were designed to assess multi-task jobs with complex tasks; whereas the RSI was. Assumptions made in order to use the SI and TLV for HAL for complex and multi-task analysis may contribute to the large differences between their physical exposure estimates. In this regard the RSI would appear to be a superior tool and one that has promising utility, at least for design and ergonomics intervention of complex and multi-task jobs. However, more research is needed to establish a "gold standard" DUL observational measurement tool.

## Poster Presentation

### Neurological Effects

#### 0463 OCCUPATIONAL INTOXICATION BY MERCURY AND NEUROTOXICITY: PROFESSIONAL DISEASE

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**Introduction** Mercury is a heavy metal found naturally in the environment. Mercury poisoning of occupational origin is widely identified as occupational disease. The industries where cases have been described are those dedicated to the manufacture of thermometers, barometers, as well as in gold mines and metal refineries such as zinc.

**Methodology** The case of a 30-year-old male, a boilermaker (welder assembler) who is part of one of the teams responsible for replacing the carbon steel tubes of the exchanger through which sulphurous gases circulate with mercury remains is described. The initial symptoms were diarrhoea with mucus and blood and gum inflammation, initially presenting a blood mercury concentration of 475.9mcg/L (NV=<10 mcg/L) and urine mercury concentration 939mcg/L (NV=<30 Mcg/L) (BAL INSHT <5 mcg/g creatinine), not receiving treatment until after 6 months with DMPS twice seeing a reduction in urinary values from 1830.47 to 7.38 mcg/L. As a clinical result of mercury poisoning he had severe mercurial erethism with dysthymia and aggressive behaviour, as well as a secondary complex visual disorder and a diarrheal syndrome due to secondary autonomic neuropathy.

**Conclusion** This paper aims to warn about the consequences of prolonged exposure to mercury especially for the central nervous system, as well as early diagnosis and timely treatment. On the other hand, note the importance of adopting an adequate and effective preventive system to protect the health of workers exposed to mercury.

## Oral Presentation

### Other

#### 0464 HOW DO GENDER AND JURISDICTION INTERACT WITH WORK DISABILITY DURATION?

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**Objectives** We examine whether gender differences in work disability duration were consistent across Canadian provinces and by length of work disability duration.

**Methods** Cohorts of injured workers in British Columbia (BC), Manitoba (MB) and Ontario (ON) were analysed using claim-level data for injuries occurring between 2007 and 2011. Work disability duration was measured using cumulative days that claims received work disability benefits during one-year post-injury. Extended Cox models provided hazard ratios (HR) and 95% confidence intervals (95% CI) to examine differences between women compared to men transitioning off work disability benefits and how this varied by length of work disability duration in each jurisdiction, adjusting for confounders.

**Results** In all three provinces, women transitioned off disability benefits slower initially (at 1 day, BC: HR: 0.90 [95% CI: 0.89–0.91], MB: HR: 0.89 [95% CI: 0.87–0.91], and ON: HR: 0.96 [95% CI: 0.95–0.97]) but in longer claims women transitioned off disability benefits faster (at 9 months, BC: HR: 1.10 [95% CI: 1.07–1.13]; MB: HR 1.14 [95% CI 1.08–1.21], and ON: HR: 1.03 [95% CI: 1.01–1.06]. This finding was consistent across different models by province and injury type.

**Conclusions** The persistent differences in work disability duration suggest that there may be underlying gender or sex differences in terms of recovery from work-related injury. Policies for the prevention and management of work injuries