

## Oral Presentation

### Molecular epidemiology

#### 0290 INVESTIGATING THE REPRODUCIBILITY OF METABOLOMICS PROFILES OF WASHINGTON STATE METAL WORKERS

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Manganese (Mn) is a known neurotoxicant, and given its health effects and ubiquitous nature in metal-working settings, identification of a valid and reproducible biomarker of exposure is of interest. Global metabolomics were previously utilised to determine metabolites that differ between occupational groups defined by Mn exposure status, in hopes of informing a biomarker of exposure. Nine metabolites were found to differ between exposure groups in urine samples collected October 2014. To test the reproducibility of these metabolites, these nine metabolites were investigated in a second set of urine samples collected January 2015 from the same workers.

Levels of the nine metabolites found in October 2014 were compared to the January 2015 data using principal components analysis and descriptive measures. Also, an elastic net regression was fit using the nine metabolites from the October 2014 data; this model was tested in the January 2015 data.

Four of the nine ions remained significantly different between exposed and unexposed workers in the January data, though levels of most ions also exhibited regression to the mean. The elastic net model was able to correctly classify exposure status in 66% of the January samples; slightly better than classification by chance alone.

Metabolomics is a novel technique for exposure assessment, but few studies have looked at the reproducibility of metabolomics data by collecting repeat samples from the same workers. This analysis found several ions that do seem to remain stable over time, and identification of these ions should be pursued as potential biomarkers of Mn exposure.

## Oral Presentation

### Musculoskeletal

#### 0292 INTERNATIONAL JOB-EXPOSURE MATRIX ON PHYSICAL WORKLOAD: A SECOND STEP ABOUT AN UTOPIA?

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**Introduction** Job-exposure matrixes (JEM) approaches have been recently developed on physical workload in US, Denmark and France. A comparison between US and Danish JEMs revealed substantial reliability and concordance. We aimed to describe correlation between French, US and Danish

JEMs, in order to confirm that some variable of physical workload JEMs may be internationally generalizable.

**Methods** US "O\*NET" variables, two Danish expert based JEMs (Lower Body and Shoulder), were compared to variables of "MADE", French expert based JEM. The Danish JEMs were based on occupational titles in the Danish version of the International Standard Classification of Occupations 1988 (ISCO88). Exposure estimates for Danish ISCO88 codes had been connected to "O\*NET" exposure estimates through ISCO08 and Standard Occupational Classification (SOC) codes. "MADE" is available on French coding system (PCS03) and ISCO08. Crosswalk from ISCO08 to SOC and Danish ISCO 88 has been performed, to allow building a matrix of correlations based on Pearson correlation coefficients.

**Results** The cross-walk included 337 Danish ISCO 88 common used codes for upper extremity and 372 for lower upper extremity, O\*Net, more than 800 occupational titles and "MADE JEM" 673 ISCO08 codes. Information was unique for 379 for "MADE"-O\*NET" couples, 333 for "MADE"-upper Danish JEM, and 165 for "MADE"-lower Danish JEM. Correlation of relevant variables found good associations ( $\rho > 0.7$ ) for force, computer work, and kneeling, fair for repetitiveness and vibrations ( $\rho$  0.5–0.6). Handling loads was heterogeneous.

**Conclusion** These results seem to confirm the possibility of international job-exposure matrixes on physical workload.

## Poster Presentation

### Other

#### 0293 CURRENT RESEARCH PRIORITIES FOR UK OCCUPATIONAL PHYSICIANS AND OCCUPATIONAL HEALTH RESEARCHERS— A MODIFIED DELPHI STUDY

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**Objectives** Studies identifying occupational health (OH) research priorities have been conducted in several countries, to establish where OH research should be focusing and where funding should be targeted. The UK findings however, are now over 20 years old. OH practice is continuously evolving, with advances in technology, changes in work practices and customer/workforce needs.

**Aims** To identify the current research priorities for UK occupational physicians (OPs) and occupational health researchers (OHRs).

**Methods** A modified Delphi study of current research priorities for UK OPs and OHRs, is being undertaken. It will be