with non-Hodgkin lymphoma (NHL) but findings are inconclusive. Mechanistic studies using global biochemical profiling (metabolomics) could provide supporting evidence for such an association by identifying relevant biological pathways. We applied metabolomics profiling to a cohort of TCDD exposed workers.

Methods 81 workers who had been exposed to either high (n = 43) or low (n = 38) TCDD levels more than 30 years before serum collection and 63 non-exposed workers (from a comparable factory but without TCDD exposure) were included in the study. Serum ion metabolites were detected using Ultra high Pressure Liquid Chromatography (UPLC) coupled online to a Q-TOF Premier mass spectrometer with a scan range of 70–1000 m/z. Current plasma levels of TCDD ($TCDD_{Current}$) were determined by high-resolution gas chromatography/isotope dilution high resolution mass spectrometry. TCDD blood levels at the time of last exposure (TCDDmax) were estimated using a one-compartment first order kinetic model. Differentially expressed metabolites were identified using partial least squares (PLS) regression, and Bayesian stochastic search variable selection with spike-and-slab priors of (nonlinear) generalised additive models.

Results Features that were present in all QC samples and had a coefficient of variation CV <30% were included in the present analyses (n = 421 features). PLS and Bayesian stochastic search variable selection regression analyses revealed no obvious metabolic perturbations associated with TCDD serum levels.

Conclusions This is the first global metabolomic analysis related to TCDD exposure. No significant features were identified. It is concluded that TCDD exposure at levels present in this study does not lead to significant perturbations of the serum metabolites.

Session: P. Other diseases

118 OCCUPATIONAL RISKS IN THE BUILDING AND PUBLIC WORKS SECTOR IN MOROCCO

[1]H Hami, [2]F-Z Azzaoui, [2]D Raougui, [2]A Soulaymani, [2]A Mokhtari, [2]A O T Ahami. *[1]Kenitra, Morocco; [2]Ibn Tofail University, Kenitra, Morocco*

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Objectives Occupational injuries represent a considerable part of the injury burden to society, affecting people in the most productive years of their lives. Building and public works sector is recognised by its high frequency of occupational injuries. Kenitra city is the most important city in the Gharb plain region (NW of Morocco) where different new constructions are installed. This study aims to describe the profile of occupational injuries occurring in the building and public works sector in Kenitra city.

Methods A descriptive retrospective analysis of occupational injuries notified in the delegation of employment of Kenitra in 2008–2009, was performed. The results do not include occupational diseases or journey accidents.

Results In 2008–2009, 305 workers were victims of an accident in the work, which 21 died. Victims are often men (91.8%). According to data recorded, the risks in building and public works sector are higher than in other sectors (working at height, working on moving equipment, handling important). Accidents in this sector are caused by machinery, falling materials and falls from height. These accidents caused a temporary and permanent disability (73.8% and 19.3% respectively).

Conclusions Occupational injuries could have serious consequences. Measures are needed to ensure safety and protect workers' health.

119 RENAL EFFECTS INDUCED BY OCCUPATIONAL CO-EXPOSURE TO CADMIUM AND LEAD IN METALLURGY WORKERS

[1]R H Hambach, [2]D Lison, [3]P C D'Haese, [4]J Weyler, [5]E De Graef, [4]A De Schryver, [3]L V Lamberts, [4]M van Sprundel. *[1]University of Antwerp/Occupational Health Service Mensura, Wilrijk, Belgium; [2]Louvain Centre of Toxicology and Applied Pharmacology, UCL, Brussels, Belgium; [3]Laboratory of Pathophysiology, University of Antwerp, Antwerp, Belgium; [4]Department of Epidemiology and Social Medicine, University of Antwerp, Antwerp, Belgium; [5]Umicore PMR, Department of Health & Safety, Hoboken, Belgium*

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Objectives Research on the effect of co-exposure to Cd and Pb on the kidney is scarce. The objective of the present study was to assess the effect of co-exposure to these metals on early renal biomarkers.

Methods Cd in blood (Cd-B), Cd in urine (Cd-U), Pb in blood (Pb-B) and urinary renal biomarkers i.e., microalbumin (-Alb), beta-2-microglobulin ($_2$-MG), retinol binding protein (RBP), N-acetyl- -D-glucosaminidase (NAG), intestinal alkaline phosphatase (IAP) were measured in 122 metallurgic refinery workers examined in a cross-sectional survey. In order to explore the effect of Pb on the association between Cd and renal biomarkers (i.e., effect modification or interaction), we performed a multiple linear regression analysis (adjusting for age and pack-years of smoking) including an interaction term Pb x Cd.

Results The median Cd-B, Cd-U, Pb-B were: 0.8 g/l (IQR = 0.5, 1.2), 0.5 g/g creatinine (IQR = 0.3, 0.8) and 158.5 g/l (IQR = 111.0, 219.3), respectively. The statistically significant interaction term Pb-B x Cd-B indicates that the impact of Cd-B on the enzymes NAG and IAP was only evident among workers with Pb-B concentrations ≥ 75th percentile. The association between Cd-U and the renal markers NAG and RBP was also evidenced when Pb-B ≥ 75th percentile. No statistically significant interaction terms were observed for the associations between Cd-B or Cd-U and the other renal markers under study (i.e., -Alb and 2-MG).

Conclusions Our findings indicate that Pb modifies (increases) the strength of the association between Cd and early renal biomarkers.

120 RENAL DYSFUNCTION AND POLYMORPHISMS IN METALLOTHIONEIN 2A IN A CHINESE POPULATION EXPOSED TO CADMIUM

C X Chang, J T Jin. *Fudan University, Shanghai, China*

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Objectives Cadmium (Cd) toxicity of the kidney varies between individuals despite similar exposure levels. In humans Cd is mainly bound to metallothioneins (MT), which scavenge its toxic effects. Here we analysed whether polymorphisms in MT genes MT2A influence Cd-related kidney damage.

Methods In a cross-sectional study N = 566 volunteers were selected from three areas in South-Eastern China, which to varying degree were Cd-polluted from a smelter (control area [median Cd in blood B-Cd = 1.38 μg/L], moderately [B-Cd = 4 μg/L] and highly [B-Cd = 9.5 μg/L] polluted areas). (control area [median Cd in urine U-Cd = 2.01 μg/g Cr], moderately

[U-Cd = 4.17 μg/g Cr] and highly [U-Cd = 11.39 μg/g Cr] polluted areas). B-Cd, U-Cd concentrations were measured by graphite-furnace atomic absorption spectrometry. Polymorphisms in MT2A (rs10636 G/C, rs1610216 C/T and rs28366003 A/G) were determined by Taqman assays. Urinary N-Acetyl-beta-(D)-Glucosaminidase (UNAG) was determined by spectrometry, urinary 2-microglobulin (UB2M) and albumin (UALB) by ELISA.
Results BCd and UCd had an association with variant alleles for MT2A (rs10636) in female living in the highly polluted group (p = 0.017 and 0.004, respectively). UCd had a weak association with variant alleles for MT2A (rs28366003) in the highly polluted group (p = 0.08,). An association wasn't found between renal dysfunction and MT2A polymorphisms variation in polluted group.
Conclusions The finding indicates genetic variation in the MT2A genes may not associate with renal dysfunction caused by cadmium exposure.

121 HAND ECZEMA IN THE CONSTRUCTION INDUSTRY: PREVALENCE AND DETERMINANTS

J G Timmerman, Heederik, Spee, Smit. *Institute for Risk Assessment Sciences (Utrecht University), Utrecht, Nederland*

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Introduction In most Western European countries, prevalence of hand eczema in the general population is estimated at around 4%. In the construction industry, a higher prevalence can be expected due to exposure to irritating and allergenic agents. Aim of the present study was to investigate the prevalence and determinants of hand eczema in several job titles within the construction industry.
Methods As part of a voluntary medical examination, a questionnaire including items on health symptoms and working circumstances was administered to construction workers between 2005 and 2011. A response rate of about 50% was achieved, 152.200 men were included: 115.379 construction yard workers and 36.821 office personnel. Hand eczema was defined as one or more self-reported skin symptoms. Associations between possible risk factors and hand eczema were assessed using log-binomial regression.
Results Hand eczema prevalence was 25% among construction yard personnel and 15% among office personnel. Skin hypersensitivity for job-related substances was reported by 10% and 3%, respectively. Hand eczema was most often reported by plasterers (36%) and bricklayers (31%). Carpenters and painters most frequently reported skin hypersensitivity (both 11%). Compared to office personnel, all construction yard job titles had a significantly increased prevalence ratio (PR) for hand eczema. Among construction yard personnel, dry skin (PR 2.02, 95% confidence interval (CI): 1.95–2.10) and nuisance due to exposure to dust (PR: 1.57, 95% CI: 1.53–1.61) were the most important determinants for hand eczema. For skin hypersensitivity, dry skin (PR 2.27, 95% CI: 2.19–2.36) and dust exposure (PR 1.78, 95% CI: 1.71–1.86) were also the main determinants. Skin hypersensitivity was reported less often among glove users (PR 0.61, 95% CI: 0.58–0.63).
Conclusion Hand eczema is very common among construction workers. Dust exposure and a dry skin type were associated with a higher prevalence of hand eczema and work-related skin hypersensitivity.

122 ABSENTEEISM BY CONJUNCTIVITIS AND DERMATITIS HEALTH CARE IN PROFESSIONALS WHO USE LATEX AT A UNIVERSITY HOSPITAL IN Sćo PAULO, BRAZIL

E.C.S. Sá, Campos, Piovesan, Pustiglione. *Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil*

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Objectives To evaluate absenteeism in health care professionals that showed removal by conjunctivitis and contact dermatitis from the latex during the period September, 2011 to September, 2012 at a university hospital in São Paulo, Brazil.
Methods We performed a study about the absenteeism among health professionals of university hospital in São Paulo, from September 1, 2011 to September 30, 2012, with workers who have had absences related to conjunctivitis and dermatitis contact. Moreover, were consulted scientific databases (MEDLINE via PubMed, LILACS, SciELO) between October 1 and November 20, 2012, restricting the articles in English, Portuguese or Spanish, published between 1990 and 2011.
Results There was 96 workers diagnosed with contact dermatitis and 1331 workers with conjunctivitis. In the sample, were identified eleven staff who had both diagnoses of conjunctivitis and contact dermatitis: 05 were workers from various areas of the hospital and 06 were health professionals, such as: 01 laboratory technician, 01 nurse and 04 nursing technicians, who used latex gloves in their daily workday. There were 36 days of removal by conjunctivitis and contact dermatitis associated. This study showed the importance to research in different health institutions, aimed at earlier diagnosis related to latex allergy and to establish prevention campaigns, including the identification of the factors sensibilization in occupational health programs of the health care professionals.
Conclusion The study suggests the possibility of correlation between the both diagnosis of conjunctivitis and dermatitis to latex in healthcare professionals.

123 OCCUPATIONAL CONTACT DERMATITIS: INITIAL AND SUBSEQUENT WORKERS' COMPENSATION CLAIMS IN VICTORIA, AUSTRALIA

[1]G Keegel, [1]Benke, [2]Nixon, [1]Sim, [3]LaMontagne. *[1]Monash University, Melbourne, Australia; [2]Occupational Dermatitis Research and Education Centre, Skin & Cancer Foundation, Melbourne, Australia; [3]Melbourne School of Public Health, University of Melbourne, Melbourne, Australia*

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Objective Occupational contact dermatitis (OCD) is caused by a range of workplace exposures such as frequent hand-washing or exposure to irritating or allergic substances. We compare costs and days away from work for initial and subsequent workers' compensation claims for OCD amongst workers in Victoria, Australia.
Methods The Compensation Research Database (CRD), held by the Institute for Safety, Compensation and Recovery Research, contains de-identified details of all workers' compensation claims submitted to the Victorian WorkCover Authority. We accessed injury/disease, employment and demographic variables for OCD claims, as well as information about claim costs (in 2009 Australian dollar equivalent values) and days away from work, for the period January 1985-December 2009. The estimate for the