Conclusions There was reasonable homogeneity using 25–50 clusters per module (representing 3–15% of the number of jobs per questionnaire), but important heterogeneity remained. A more efficient use of expert judgment may be to assess exposure at the cluster-level and then, within expert-identified heterogeneous clusters, at the job-level.

290 VALIDATION OF QUESTIONNAIRE ITEMS AMONG DUTCH CONSTRUCTION WORKERS USING DIRECT WORKPLACE OBSERVATIONS

[1]H Zilaout, [2]Timmerman, [2]Heederik, [3]Spee, [2]Smit. *[1]University Utrecht/ Institute for Risk Assessment Sciences, Utrecht, Nederland; [2]Institute for Risk Assessment Sciences (IRAS), Utrecht, Nederland; [3]Arbouw, Harderwijk, Nederland*

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Objectives Contact dermatitis is widely present among construction workers. The risk of developing occupational contact dermatitis among this group is probably related to occupational exposure to chemicals. In addition, frequency of glove use and exposure to water during hand washing may also influence the prevalence of hand eczema. The aim of this project was to validate questionnaire items on hand dirtiness and glove use by comparing with direct workplace observations.
Methods A cross-sectional study was conducted at 13 different construction sites in the Netherlands. The questionnaire covered general information such as age, gender, occupation and specific questions regarding hand conditions, glove use, glove types, glove replacement, frequency of hand washing and possible symptoms of hand eczema during the last 12 months.

Data of 177 participants (95% response rate) were analysed. Agreement between observation and questionnaire was assessed by calculating Cohen's kappa. In addition, the sensitivity and specificity were determined. Multivariate analysis was conducted to assess the association between hand eczema and workplace determinants.
Results Observation of hand dirtiness, glove use and glove types were found to agree well with questionnaires, with kappa's of 0.75, 0.61 and 0.88 respectively. The 1-year prevalence of hand eczema was 45.8%. Multivariate logistic regression analysis with hand eczema as dependent variable showed a statistically significant correlation with 'hand cream use' (PR 2.4 (95% CI: 1.6 to 3.8)) and 'hand washing efforts' (PR 1.5 (95% CI: 1.1 to 2.0)). There was also a significant positive association between hand eczema and 'hand dirtiness' and 'glove use'.
Conclusions There is a strong correlation found between direct observations and questionnaire. Therefore, it is reasonable to consider that these questionnaire items are suitable to be used in future epidemiological studies. Hand eczema was often reported and was positively associated with potential determinants of exposure asked for in the questionnaire.

291 OCCUPATIONAL EXPOSURE TO ISOCYANATES; A BASELINE EXPOSURE ASSESSMENT AS BASIS FOR AN INTERVENTION STRATEGY

E H A M van Deurssen. *IRAS, Utrecht, Nederland*

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Objectives Occupational exposure to isocyanates has been associated with the development of occupational asthma. This study serves as baseline measurement within an intervention study, aimed at 1) conducting a detailed exposure assessment and determine exposure determinants, 2) providing input for the development of a broad intervention strategy, and 3) evaluating the effectiveness of respiratory protection.
Methods Personal task-based inhalation samples for mixing, spraying and gun cleaning were collected among 37 workers, divided over eighteen companies. Relevant information regarding potential exposure determinants and behavioural and organisational factors was obtained by performing a walk through survey and a questionnaire. Mixed effect regression models were used to identify associations between exposure and work practices, behavioural factors (e.g. knowledge, awareness), and organisational factors (e.g. support towards OSH-programs). The level of respiratory protection during workplace activities was assessed among 22 workers.
Results Spray painting results in the highest exposure levels compared (47 g/m^3 NCO) to mixing and gun cleaning (respectively 0.15 g/m^3 NCO and 0.7 g/m^3 NCO). Worker orientation and spray location seem to be indicative for exposure. A full overview of our analyses and a first outline of the intervention strategy will be presented during the conference. The use of respirators seems task-dependent, where first analyses seem to indicate that the protection factor is above 95%.
Discussion Although we found decreased exposure levels compared to earlier studies, we still see possibilities for interventions to further decrease exposure. For instance through the organisation of work, the frequency of (proper) use of control measures, and further improvements in the use of respirators. The results of our exposure assessment will be used to perform health impact assessment, presented in another abstract.

Session: 14. Exposure assessment II

292 ASSESSMENT OF PSYCHOSOCIAL EXPOSURE: HOW TO ESCAPE THE TRIVIALITY TRAP?

[1]J P B Bonde, [2]Gullander, [3]Grynderup, [3]Willert, [4]Hansen, [5]Høgh, [6]Persson, [7]Thomsen, [8]Mors, [9]Rugulies, [3]Kolstad. *[1]Bispebjerg Hospital, Copenhagen, Denmark; [2]Department of Occupational and Environmental medicine, Bispebjerg Hospital, Copenhagen, Denmark; [3]Department of Occupational Medicine, Danish Ramazzini Centre, Aarhus University, Aarhus, Denmark; [4]Department of Public Health, Copenhagen University, Denmark, Copenhagen, Denmark; [5]Department of Psychology, Copenhagen University, Denmark, Copenhagen, Denmark; [6]The National Research Centre for the Working Environment, Copenhagen, Denmark, Copenhagen, Denmark; [7]Department of Occupational and Environmental medicine, Bispebjerg Hospital, Copenhagen, Denmark; [8]Aarhus University Hospital, Risskov, Aarhus, Denmark; [9]The National Research Centre for the Working Environment, Copenhagen, Denmark*

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Objectives Workplace bullying may be a strong determinant of major depression, but only a few studies provide prospective data and none provide independent information on bullying. In a follow-up study we analysed newly-onset depression in relation to workplace bullying measured at the individual level (perceived bullying) and at the work-unit level (witnesses reporting bullying).
Methods Danish employees were recruited from two Danish cohorts of 3.743 and 2.617 workers, respectively. Cohort members received a questionnaire at baseline in 2006–07 with two-wave follow-ups in 2008–09 and 2011. Workplace bullying was measured by self-labelling and by the proportion of employees in a work unit who had witnessed workplace bullying "now and