taking account of the use of hearing protection devices (HPD) and well-established predictors of lipid levels.

Methods This cross-sectional study included 460 Danish industrial workers and 69 financial workers included as a reference. They provided a serum sample and lipid levels were determined. All participants wore portable dosimeters that recorded noise exposure levels at the dominant shoulder every 5 seconds for a 24 hour period. We extracted measurements obtained during work and calculated the L_{Aeq} value. For 341 workers who kept a HPD diary we subtracted 10 dB from every noise recording obtained during HPD use and estimated the noise exposure level at the ear.

Results The mean measured noise exposure level was 80.0 dB (A) [range: 55.0–98.9] and the mean estimated level at the ear 77.8 dB(A) [range:55.0–94.2]. The measured level was strongly associated with increasing levels of triglycerides (p = 0,01), cholesterol-HDL ratio (p < 0,01) and decreasing levels of HDL-cholesterol (p = 0,01), but only in unadjusted analyses that did not account for HPD use. In analyses of estimated noise exposure level at the ear that were adjusted for body mass index and smoking status among others no effects were seen.

Conclusion No association between current occupational noise exposure level and serum lipid levels was observed. This does not indicate that a causal pathway between occupational and environmental noise exposure and cardiovascular disease, if such a relation exists, includes alteration of lipid levels.

369 ACUTE EFFECTS OF OCCUPATIONAL NOISE EXPOSURE ON 24-HOUR AMBULATORY BLOOD PRESSURE IN WORKERS WITH HYPERTENSION

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Objectives Hypertension is the prevalent disease in the workplace. Although the elevation of blood pressure from exposure to occupational noise has been recognised, research on susceptibility to occupational noise exposure in adults with hypertension is not reported. This repeated-measure study investigated the effects of occupational noise exposure on 24-hour ambulatory blood pressure in a cohort with hypertensive and normotensive workers.

Methods We enrolled 117 volunteers in an aircraft-manufacturing industrial cohort followed from 1998 to 2008. Individual noise exposure and personal blood pressure were determined simultaneously over 24 hours in 19 hypertensive and 98 normotensive workers during the working and non-working days. Linear mixed-effects regressions were used to investigate the effects of noise exposure on ambulatory systolic blood pressure (SBP) and diastolic blood pressure (DBP) between two groups during different periods by controlling for potential confounders.

Results Hypertensive workers had significantly higher mean values of ambulatory SBP (12.6 [95% confidence interval: 10.3–15.0] mmHg; 10.3 [7.8–12.8] mmHg) and DBP (8.0 [6.3–9.7] mmHg; 7.2 [5.3–9.1] mmHg) compared with normotensive workers on both working and non-working days. Such differences between two groups were obviously higher on the working day than on the non-working day. Per one A-weighted decibel (dBA) increase in the 24-hour average noise exposure was significantly associated with transient elevations of SBP (0.25 [0.15–0.36] mmHg) and DBP (0.16 [0.09–0.23] mmHg) among hypertensive workers on the working day. Such effects on SBP and DBP still persisted at the 60-min time-lagged noise exposure and the increases of SBP were more pronounced in the hypertensive group than in the normotensive group.

Conclusions Hypertensive workers are more susceptible to noise exposure, especially the effect on ambulatory SBP. These results suggest a need for the more protection to the susceptible population.

370 CAN COMPENSATION STATISTICS DETECT THE IMPACT OF SUMMER OUTDOOR TEMPERATURES ON WORKERS' HEALTH AND SAFETY? PRELIMINARY RESULTS IN QUEBEC (CANADA)

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Objectives Increased temperatures associated with climate change are likely to have impacts on occupational health and safety all over the world. We aimed to explore potential relationships between summer outdoor temperatures and occupational compensation statistics for heat-related morbidity and mortality.

Methods Daily compensation counts in the region of Montreal for heat-related health outcomes (such as heat strain, heatstroke, loss of consciousness) were obtained from the workers' compensation board of Quebec for the months of May to September over the period 2000–2010. Daily summer outdoor temperatures for the study period were obtained from Environment Canada. Associations between daily compensation counts and temperatures were analysed with regular Poisson and negative binomial regression models.

Results There were 35 compensations for heat-related health outcomes during the 11-year period (for a working population of approximately 1.85 million). Incidence rate ratio (IRR) obtained from preliminary Poisson regression analyses was 1.76 (95% CI: 1.55–2.00) per 1°C temperature increase. This large IRR translates into a small increase in compensations, given the low compensation base rate (0.002 compensation per day for heat-related health problems) at the average temperature of 18.4 °C. Virtually identical results were obtained with a negative binomial regression. Analyses will be carried out for other regions of Quebec and for indirect impacts of heat (e.g. accidents/injuries related to fatigue and lack of vigilance), with various metrics of temperature (e.g. maximum and minimum, Wet Bulb globe Index), and will be stratified by industrial sectors, age and sex when possible.

Conclusions These preliminary results suggest that the effect of increases in summer temperatures can be detected in compensation statistics. The results of this work could prove useful for the surveillance of current and future occupational health and safety risks associated with outdoor temperatures and to orient interventions.

371 PRIORITY SETTING FOR FUTURE OCCUPATIONAL SAFETY AND HEALTH (OSH) RESEARCH IN EUROPE

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Objectives The OSH Evidence group consists of experts coming from Institutes of the partnership for European Research in Occupational Safety and Health (PEROSH). Our main objective is to facilitate knowledge transfer from scientific research into policy making by means of systematic reviews. In this project we developed a priority list of topics for reviews which should be in line with the major trends and research challenges inOSH.
Methods We took the PEROSH paper on research challenges as a starting point. In this paper seven main research areas were identified by consultation of the member institutes that are significantly prevalent and innovative in terms of preventing ill health and occupational accidents. We aimed to translate the research needs in answerable research questions. We formulated criteria to decide if this specific question should be answered with a systematic review or with a scoping review. For systematic reviews, we phrased clear answerable questions according to a predefined 'PICO' format: P = participants, I = intervention/exposure, C = comparison/control, O = outcome. For scoping reviews, we described the target population, the intervention or exposure (s) and the intended results of the scoping reviews.
Results The main research challenges identified by PEROSH were: 'Sustainable employability', 'Disability prevention', 'Psychosocial well-being', 'Multi-factorial genesis of musculoskeletal disorders', 'New technologies', 'Occupational risks of nano-materials', and 'Safety culture'. The project resulted in two lists for each research topic, one containing priorities for systematic reviews and one for scoping reviews. For example, a systematic review is needed for the research question "Is physically demanding work a risk factor for early retirement?", while a scoping review is needed for the research question "Which interventions are available to prolong working life?".
Conclusions Translating research priorities into questions that can be answered with systematic reviews and scoping reviews is feasible. The exercise helps in setting priorities for where reviews are needed.

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372 NATURAL RUBBER LATEX AEROALLERGEN EXPOSURE AND ALLERGY AMONG FEMALE NURSES IN GOVERNMENTAL HOSPITALS, THAILAND

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Objectives The aim of the study was to determine the prevalence of latex allergy in nurses and to determine occupational risk factors.
Methods A cross-sectional study was conducted in 899 female nurses from three Thai hospitals with information on working conditions, lifestyle, ill-health, and symptoms related to latex use, collected by a self-reported questionnaire. Pulmonary function was determined by spirometry. Latex sensitisation was determined by using a solid-phase enzyme-labelled fluoroenzymeimmunoassay for anti-latex IgE antibodies. Inhalable aerosol levels were measured in different wards using stationary air sampling and latex aeroallergen levels in these samples were measured using a Pharmacia CAP competitive-inhibition immunoassay.
Results Health effects-related to latex glove use were reported by 17.5% (157/899) of the nurses with the majority reporting dermal symptoms (84.1%, 132/157) and to a lesser extent respiratory symptoms (27.4%, 43/157), respectively. The prevalence of latex sensitisation was 4.4% (16/363). Occupational factors associated with dermal symptoms included working in operating theatres (OR 2.5, 95% CI 1.5 - 4.2]), wearing > 15 pairs of latex gloves per day (OR 2.1, 95% CI 1.3 - 3.4), and washing hands with chlorhexidine (OR 2.1, 95% CI 1.2 - 3.5). Latex sensitisation was associated with respiratory symptoms (OR 3.8, 95% CI 1.0 - 14.5) and with decreased $FEF_{25-75\%}$ predicted (-12.22, 95% CI -23.6 to -0.88). The concentration of NRL aeroallergens in hospital workplaces ranged from 6.9 to 12.4 ng/m^3.
Conclusions Use of powdered latex gloves was associated with increasing risk of developing glove-related symptoms, particularly dermal symptoms in nurses. Operating theatre nurses were a high risk group for developing glove-related dermal symptoms. Use of alternative gloves should be considered in Thai-hospitals, while also the risk associated with the use of chlorhexidine containing sanitisers should be examined further.

373 BURNOUT, A SUBSTANTIAL PROBLEM IN HOSPITAL PHYSICIANS. A MULTICENTRE STUDY ON ITS PREVALENCE, DETERMINANTS AND CONSEQUENCES IN 37 BELGIAN HOSPITALS

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Objectives Previous research revealed burnout in one third of the Belgian critical care physicians. Burnout leads to absenteeism, affects quality and safety of care, while work-engagement positively affects personal performance and involvement in the organisation. The aim of this study was to determine the prevalence, determinants and consequences of burnout and work-engagement in a representative sample of Belgian physicians across all medical specialties.
Methods A multi-centre survey was conducted using a 2-phased convenience sample: 1) all general and psychiatric hospitals were invited and 2) an electronic questionnaire was send to all doctors from the participating institutions. The 29-item "Utrechtse Burnout Scale" measured 3 dimensions, "emotional exhaustion (EE)", "depersonalisation (DP)" and "personal accomplishment (PA)", scored on a likert-scale (0(never)- 6(always/daily)). Doctors with high EE (mean score>2.50) and high DP (mean score>1.80 (men)/>1.60(women)) or low PA (mean score<3.71) were considered at risk. Burnout was defined as high EE and high DP and low PA. The 9-item "Utrechtse Work-Engagement Scale" using a similar likert-scale determined work-engagement (mean score>5). Socio-demographics, theory-based determinants and consequences were measured using validated scales.
Results Thirty-seven hospitals (20%) joined the study and 1198 doctors (47% female, mean age: 43.66) completed the questionnaire. Almost 89% had at least a master-after-master degree and 62% were medical specialists. The most represented specialties were anesthesia-resuscitation (12%), internal medicine (7.3%) and paediatrics (6.8%). Forty percent, 27.9% and 15.3% suffered from EE, DP and low PA respectively. Burnout was detected in 5.4%, 17.8% were at risk and 63% demonstrated high work-engagement. Important burnout determinants were "workload", "role conflicts" and "emotional strain". "Autonomy",