

various CHDs and similarly between hairdresser work and oral clefts. Future research could aim to identify potential workplace reproductive hazards and interventions in these occupations.

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### SENSITIZATION AND DERMATITIS AMONG EPOXY EXPOSED LAMINATION WORKERS PRODUCING WIND TURBINE BLADES

<sup>1</sup>Alexandra Golabek Christiansen, Ole Carstensen, Henrik Albert Kolstad, Jakob Hjort Bønlokke, Per Axel Clausen, Marlène Isaksson, Mette Sommerlund, Vivi Schlünssen.  
<sup>1</sup>Aarhus University Hospital, Denmark

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**Introduction** Epoxy resin systems (ERS) are well-known sensitizers of the skin. A high prevalence of sensitization and dermatitis has been reported among workers exposed to ERS. Due to this, comprehensive personal protective equipment is required when working with ERS. No recent studies have evaluated the effect of the use of such safety equipment.

**Objectives** The aim of this study was to estimate the occurrence of dermatitis and sensitization to ERS among epoxy-exposed workers producing wind turbine blades in Denmark while using up-to-date protective measures.

**Material and Methods** A cross-sectional study was performed at two Danish factories producing rotor blades for wind turbines. A screening questionnaire regarding recent and former skin rashes, allergies, atopic dermatitis, and asthma was answered by 181 epoxy-exposed production workers and 41 non-exposed office workers. Physical examination of the skin was followed by testing with a tailored patch test series based on toxicological assessments of possible sensitizing chemicals in the work materials including epoxy resins and hardeners as well as 35 allergens from the European Standard Series (TRUE test). Atopy was defined as elevated serum levels of IgE for standard inhalation allergens.

**Results** In total, 16 (8.8%) of the exposed workers were sensitized to one or more epoxy compounds, whereas none of the non-exposed office workers were sensitized. Non-atopic participants exposed to epoxy products showed an increased odds ratio (OR=2.02; CI 0.56–7.34) of dermatitis while the opposite was seen for atopic participants (OR=0.08; CI 0.02–0.4). A 4-fold increased odds ratio (OR=4.5; CI 1.57–13.13) of dermatitis was observed among workers sensitized to epoxy resins. Atopy was not associated with epoxy sensitization (OR=0.73, CI 0.22–2.42).

**Conclusion** Despite up-to date skin protection dermatitis and sensitization to ERS remain high among epoxy exposed lamination workers. These findings document the need for new and efficient preventive efforts.

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### ASBEST CHRYSOTILE COHORT STUDY PROFILE, EXPOSURE DISTRIBUTION AND OUTCOMES

<sup>1</sup>Ann Olsson, Joachim Schuz, Kurt Straif, Hans Kromhout, Monika Moissonnier, Evgenia Ostroumova, Graham Byrnes, Gilles Ferro, Eleonora Feletto, Sara J Schonfeld, Igor Bukhtiyarov, Iraklii Tskhomariia, Sergey Kashanskiy, Tatiana Morozova, Evgeny Kovalevskiy. <sup>1</sup>International Agency for Research on Cancer, France

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**Introduction** A historical cohort study in workers occupationally exposed to chrysotile was set up in the town of Asbest,

the Russian Federation, to study their cause-specific mortality, with a focus on cancer.

**Objective** Describe the Asbest Chrysotile Cohort established in 2013.

**Methods** Cohort enrolment was based on employment records from JSC Uralasbest chrysotile mine and processing factories. Exposure assessment was based on detailed occupational histories extracted from company archives and personal workbooks linked to > 90,000 measurements, and conversion factors derived using a subset of parallel dust/fibre measurements. This resulted in yearly dust and fibre estimates for each employed calendar year. Vital status was ascertained from multiple sources including company records, the Pension Fund, the Federal Migration Service, and Civil Act Registration Office providing the date and cause of death of those deceased in Sverdlovsk Region.

**Results** The cohort comprises 22,463 men and 13,374 women working  $\geq 1$  year between 01/01/1975 and 31/12/2010 in JSC Uralasbest and followed until 31/12/2015. Cumulative exposure of exposed women was higher than for men (49 mg/m<sup>3</sup> dust years and 33 fibres/cm<sup>3</sup> years vs. 31 mg/m<sup>3</sup>dust years and 19 fibres/cm<sup>3</sup>years). At the end of follow-up, 52% of the cohort was alive, 36% deceased, and 12% censored at last date known to be alive in the Sverdlovsk Region. For those who died the mean age at death was 59.4 years for men and 66.5 for women. The most frequent underlying cause of death for all was circulatory diseases, followed by external causes and cancer in men, and cancer and external causes in women. Cancer mortality was dominated by lung cancer in men and breast cancer in women.

**Conclusion** The cohort is unique in its size, long follow-up, and substantial proportion of female workers. The cohort is relatively young, and the mortality patterns follow those of the Russian population. Risk analyses are underway.

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### HEALTH, LIFESTYLE AND OCCUPATIONAL RISKS IN 10,931 INFORMATION TECHNOLOGY WORKERS

Jim Lewsey, Srinivasa Vittal Katikireddi, Ewan Macdonald, Evangelia Demou, <sup>1</sup>Drushca Laloo. <sup>1</sup>University of Glasgow, United Kingdom

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**Introduction** Informational technology (IT) and the IT workforce are rapidly expanding with potential occupational health implications. Yet to date, IT worker health is under-studied and large-scale studies are lacking.

**Objectives** To investigate health, lifestyle and occupational risk factors of IT workers.

**Methods** We evaluated self-reported health, lifestyle and occupational risk factors for IT workers in the UK Biobank database. Using logistic regression, we investigated differences between IT workers and all other employed participants. Regression models were repeated for IT worker sub-groups (managers, professionals, technicians) and their respective counterparts within the same Standard Occupational Classification (SOC) major group (functional managers, science and technology professionals, science and technology associate professionals).

**Results** Overall, 10,931 (4%) employed participants were IT workers. Compared to all other employed participants, IT workers reported similar overall health, but lower lifestyle risk factors for smoking and obesity. Sedentary work was a

substantially higher occupational exposure risk for IT workers compared to all other employed participants (OR=5.14, 95% CI:4.91–5.39) and their specific SOC group counterparts (managers: OR=1.83, 95%CI:1.68–1.99, professionals: OR=7.18, 95%CI:6.58–7.82, technicians: OR=4.48, 95% CI:3.87–5.17). IT workers were also more likely to engage in computer screen-time outside work than all other employed participants (OR=1.42, 95%CI:1.35–1.51).

**Conclusions** Improved understanding of health, lifestyle and occupational risk factors from this, the largest to date study of IT worker health, can help inform workplace interventions to mitigate risk, improve health and increase the work participation of this increasingly important and rapidly growing occupational group.

## Work Organization

### 0-161 WORK ENVIRONMENT CHARACTERISTICS AMONG MARGINAL PART-TIME WORKERS IN DENMARK

<sup>1</sup>Helena Breth Nielsen, Laura Stonor Gregersen, Emma Steffensen Bach, Johnny Dyreborg, Anna Ilsoe, Trine Pernille Larsen, Kathrine Pape, Jacob Pedersen, Anne Helene Garde. <sup>1</sup>The National Research Centre for the Working Environment, Denmark

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**Introduction** In 2015, around 15% of the Danish workforce had marginal part-time work (<15 hours/week). Yet, not much is known about marginal part-time worker's work environment.

**Objectives** This study assessed characteristics of the work environment among marginal part-time workers (8.00–14.99 hours/week) compared with full-time workers (32.00–40.00 hours/week).

**Methods** Employees between 18–65 years old, who responded to the survey Work Environment and Health in Denmark (WEHD) in 2012, 2014, or 2016 were included in the study (n = 34,960). Average working hours per week, based on register information obtained from the Labour Market Account (LMA), in the three months prior to responding to the WEHD survey, was linked at an individual level with work environment characteristics obtained from the WEHD survey. Logistic regression models, adjusted for age, gender, and socio-economic status, were used to analyse the associations between marginal part-time work and the work environment characteristics.

**Results** Compared with full-time workers, marginal part-time workers less often reported too little time for their work tasks (OR 0.81, 95%CI 0.67–0.97) and struggling to keep deadlines (OR 0.79, 95%CI 0.69–0.91). However, marginal part-time workers more often reported lower influence on how and when to solve work tasks and lower authority. Furthermore, they reported less help and acknowledgement from colleagues, and less interesting and inspiring work tasks, and low job satisfaction. In addition, marginal part-time workers more frequently reported having an occupational accident in the past year (OR 1.31, 95%CI 1.03–1.68) and poor guidance and instructions to work safely (OR 1.32, 95%CI 1.10–1.59). Results on negative social relations in the workplace and physical workload were ambiguous.

**Conclusions** Marginal part-time workers report less quantitative job demands, but also less influence at work, less support from colleagues, less job satisfaction, and poorer safety. Future

studies with prospective designs are needed to determine the direction of these associations.

### 0-221 CHANGES IN WEEKLY WORKING HOURS AND TIME SPENT ON DIRECT PATIENT CARE FOR DOCTORS IN NORWAY FROM 2016 TO 2019: A STUDY BASED ON REPEATED SURVEYS

<sup>1</sup>Judith Rosta, Karin Isaksson Rø. <sup>1</sup>Norwegian Medical Association, Norway

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**Introduction** The balance between adequate time spent on patient care and maintaining work-home balance is challenging for doctors. Both for treatment outcomes and for doctors' wellbeing we need longitudinal studies of total work hours and of time spent on direct patient care.

**Objectives** To compare the weekly working hours and time spent on direct patient care in 2016 and 2019 for doctors working in different job positions in Norway.

**Methods** Repeated postal surveys (2016 and 2019) based on representative samples of approximately 2,200 doctors in Norway. Main outcome measures were self-reported weekly working hours and time spent on direct patient care. Analyses included linear mixed models and proportions with 95% CI. Response rates were 73% both years.

**Results** From 2016 to 2019, the weekly working hours increased significantly for male GPs (48.7 h to 50.9 h) and male doctors in hospital management (48.2 h to 50.5 h). It remained significantly unchanged for female GPs (48.3 h to 49.3 h), female doctors in hospital management (45.8 h to 49.3), female senior consultants (45.4 h to 45.6 h), and for female (44.4 h to 43.6 h) and male (44.9 h to 46.6 h) specialist registrars. The proportion of the total work time spent on direct patient care were similar between genders and did not change significantly from 2016 to 2019. In 2019 it was highest for GPs (65.5%) followed by senior hospital consultants (43.5%), specialty registrars (39.8%) and doctors in hospital management (34.3%).

**Conclusion** Compared to stipulated work hours in Norway (37.5 h/week), doctors of both genders work long hours, and length has increased significantly for some groups from 2016 to 2019. Hospital doctors spend less than 50% of the time on direct patient care. Monitoring and regulating work hours can be a useful intervention for patient care and for doctor well-being.

### 0-297 THE IMPACT OF WITHIN-INDIVIDUAL CHANGES IN WORKING CONDITIONS, HEALTH BEHAVIOUR AND BMI ON WORK ABILITY AND SELF-RATED HEALTH: A FIXED-EFFECTS ANALYSIS AMONG DUTCH WORKERS

<sup>1</sup>David van de Ven, Suzan Robroek, Karen Oude Hengel, Sander van Zon, Sandra Brouwer, Patricia Ots, Lex Burdorf, Merel Schuring. <sup>1</sup>Erasmus University Medical Center, Netherlands

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**Introduction** Insight in the impact of within-individual changes in working conditions, health behaviour and body mass index (BMI) on work ability and self-rated health is essential to develop effective policies aimed at prolongation of working lives.