

## Oral Presentation

### Reproductive Effects

#### 0262 RISK OF MISCARRIAGE IN ASSOCIATION TO WORK AT NIGHT: A PROSPECTIVE PAYROLL DATA STUDY

<sup>1</sup>Luise Mølenberg Begtrup\*, <sup>2</sup>Ina Olmer Specht, <sup>1</sup>Paula Edeusa Christina Hammer, <sup>3</sup>Anne Helene Garde, <sup>4</sup>Johnni Hansen, <sup>1</sup>Jens Peter Ellekilde Bonde. <sup>1</sup>Department of Occupational Medicine, Bispebjerg University Hospital, Copenhagen, Denmark; <sup>2</sup>Parker Institute, Bispebjerg and Frederiksberg University Hospital, Copenhagen, Denmark; <sup>3</sup>National Research Institute for the working environment., Copenhagen, Denmark; <sup>4</sup>The Danish Cancer Society Research Centre., Copenhagen, Denmark

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**Methods** This study used data from the Dutch National Working Conditions Survey (NWCS 2014; occupational disease confirmed by a doctor, self-reported, employees).

Multivariate regression analyses were performed to assess the independent association at the individual level (OR) between each determinant and the presence of at least one occupational disease. Additionally, the Population Attributable Risk (PAR) was calculated for each determinant in order to assess the risk at the population level as well.

**Results** The top three determinants that may be influenced and also contributed most to *musculoskeletal* occupational diseases, were the same at the individual and the population level: 'Repetitive movements' (PAR=40.0%; OR=2.25), 'Working in uncomfortable positions/bad posture' (PAR=17.7%; OR=1.62), and 'High job demands' (PAR=17.6%; OR=1.57).

Determinants that contributed most to *psychological* occupational diseases were also the same on the individual and population level: 'Low engagement' (PAR=33.6%; OR=2.27), 'Conflict with supervisor' (PAR=16.7%; OR=1.51), and 'High emotional demands' (PAR=14.4%; OR=2.85).

**Conclusion** These determinants may be influenced through education, measures and/or policies at the workplace or on higher levels, in order to decrease the prevalence of occupational diseases in the working population.

## Poster Presentation

### Exposure Assessment

#### 0264 PROBE: HAZARDOUS CHEMICAL PRODUCTS REGISTER FOR OCCUPATIONAL USE IN BELGIUM

<sup>1,2</sup>Lode Godderis\*, <sup>1</sup>Sara Pauwels, <sup>3,4</sup>Anne-Marie Temmerman, <sup>2</sup>Steven Ronsmans, <sup>2,5</sup>Antoon De Schryver, <sup>6,7</sup>Dorina Rusu, <sup>3</sup>Lutgart Braeckman. <sup>1</sup>KU Leuven- University of Leuven, Department of Public Health and Primary Care, Environment and Health, Kapucijnenvoer 35 blok D box 7001, 3000 Leuven, Belgium; <sup>2</sup>IDEWE, External Service for Prevention and Protection at Work, Interleuvenlaan 58, 3001 Heverlee, Belgium; <sup>3</sup>UGent-Ghent University, Department of Public Health, De Pintelaan 185, 4K3, 9000 Gent, Belgium; <sup>4</sup>OCMW Brugge- Public Social Welfare Centre Bruges, Ruddershove 4, 8000 Brugge, Belgium; <sup>5</sup>University of Antwerpen, Epidemiology and Social Medicine, Universiteitsplein 1, 2610 Antwerpen, Belgium; <sup>6</sup>University of Liège, Department of Public Health, Avenue Hippocrate 13, 4000 Liège, Belgium; <sup>7</sup>SPMT-ARISTA, External Service for Prevention and Protection at Work, Rue Royale 196, 1000 Bruxelles, Belgium

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During their job, workers are exposed to a wide variety of working conditions including chemical substances that are potentially detrimental to employees' health. Today, Belgian data on occupational exposure to dangerous chemicals are collected by Occupational Health Services (OHS) merely for the purpose of assuring the appropriate health screening. This makes these data of little use for epidemiological research and exposure surveillance on one hand and for policy development by competent authorities on the other hand. The PROBE (Hazardous chemical Products Register for Occupational use in Belgium) study is set up to investigate the exposure of Belgian workers to dangerous chemical products, including type, duration and frequency of exposure. PROBE consists of a systematic collection and analysis of occupational chemical exposure data. A trained, motivated, and representative sample of occupational physicians from both internal and external OHS will

## Oral Presentation

### Risk Assessment

#### 0263 DETERMINANTS OF OCCUPATIONAL DISEASES IN THE NETHERLANDS: RISKS AT THE INDIVIDUAL AND THE POPULATION LEVEL

Romy Steenbeek, Liza van Dam\*, Ernest de Vroome. *The Netherlands Organisation for Applied Scientific Research (TNO), Leiden, The Netherlands*

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**Objective** To identify the main determinants of occupational diseases at both the individual and the population level.

be invited to participate. The data will be collected on a regular basis over a period of 5 months. Besides demographics, exposure measurements and health related data will be collected. First, a pilot will be kicked off in a limited sample of occupational physicians, testing the feasibility of the program. The final goal of the project is to register in a comprehensive but easy way the exposure to dangerous chemicals in order to improve preventive measures, to ensure workers' health and to develop a national surveillance policy.

## Oral Presentation

### Specific Occupations

#### 0265 RESPIRATOR FIT AND FACE SIZES OF SOUTH AFRICAN MEDICAL LABORATORY WORKERS: A FALSE SENSE OF PROTECTION

<sup>1,2</sup>Kerry Wilson\*, <sup>1,2</sup>Jeanneth Manganyi, <sup>1,2</sup>David Rees. <sup>1</sup>National Institute for Occupational Health, Johannesburg, Gauteng, South Africa; <sup>2</sup>University of the Witwatersrand, Johannesburg, Gauteng, South Africa

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**Introduction** Medical laboratory workers (MLWs) are exposed hazardous biological agents; some of which are airborne such as tuberculosis. Respirators despite being a recommended last resort are often the only means of control of exposure to tuberculosis.

**Aims** the study assessed the adequacy of respirator fit of MLWs and investigated determinants of fit.

**Methods** 562 medical laboratory workers using respirators underwent quantitative respirator fit testing using the Porta-count fit testing machine and their currently supplied respirator. Four facial characteristics were measured on these users by a trained occupational hygienist using callipers and a tape measure. The effect of the independent variables including face dimensions, ethnicity, smoking, respirator make and size, and age group was explored using multiple logistic regressions stratified by sex.

**Results** A large proportion (78%) of workers failed the fit test. Respirator fit was found to be significantly associated with face length (OR1.04, 95% CI 1.00–1.09), nasal root breadth (OR1.16, 95% CI 1.06–1.28), and respirator shape (cup) (OR0.56, 95% CI 0.39–0.78). Gender was found to be an effect modifier.

**Discussion** Fit testing and supply of different respirator sizes and types is necessary to protect MLW from airborne hazards. This is particularly important in high incidence tuberculosis settings. Affordable strategies for respirator fit testing and supply of appropriate sizes and types need to be identified for resource-constrained settings.

## Poster Presentation

### Intervention Studies

#### 0266 DESIGNING OF NEW LOW COST SIMULATOR FOR TRAINING ERGONOMIC LAPAROSCOPIC SKILLS

Riin Raimla\*, Eda Merisalu, Märt Reinvee. *Estonian University of Life Sciences, Tartu, Tartu County, Estonia*

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Medical students can learn new knowledge and train technical skills by using simulations. Because the most of simulators are expensive the use of them is limited. The aim of this study is to design new low cost simulator for young veterinarians and surgeons. The simulator corpus has been designed based on the Solid Edge software and printed out with the 3D printer. For monitoring of the results we designed and programmed four exercises using the Arduino software. The monitoring of results is important for students to control the results. Needle suture, camera navigation, hand-hand coordination and tissue cutting are the main exercises for training of student skills. The purpose of simulation training also to increase the pace of skilled movements during simulation sessions, although the duration of every exercise is different. It is important to pay attention to ergonomics too in the designing process. The new simulator has mobile stand for different exercises to train technical skills in different ergonomic postures.

## Oral Presentation

### Ageing Workforce

#### 0267 SOCIOECONOMIC INEQUALITIES IN UNEMPLOYMENT AS A PREDICTOR OF DISABILITY RETIREMENT: A RETROSPECTIVE CASE-CONTROL STUDY

<sup>1</sup>Mikko Laaksonen\*, <sup>2</sup>Jenni Blomgren. <sup>1</sup>The Finnish Centre for Pensions, Helsinki, Finland; <sup>2</sup>The Social Insurance Institution of Finland, Helsinki, Finland

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**Background** Unemployment is known to be associated with poor health and disability. The aim of this study was to examine the risk of disability retirement by past unemployment in different socioeconomic groups.

**Method** Disability retirees aged 25–64 years were drawn from the years 2011–2015 (n=74,460) to trace back their unemployment histories during the 6 preceding years. Conditional logistic regression was used to compare the risk for disability retirement by pre-retirement unemployment (lasting 90+ days