

**Results** Preliminary results indicate that associations between individual-level estimates of psychosocial work factors with depressive symptoms were largely linear and statistically significant. The associations of JEM estimates of psychosocial job factors with depressive symptoms showed varied patterns of non-linearity and were generally not statistically significant, after adjustment for individual-level measures.

**Discussion** Our study indicates that individual estimates of psychosocial work factors are consistently, strongly and linearly associated with depressive symptoms, whereas JEM estimates showed varied and non-linear patterns. JEM psychosocial work estimates may capture different phenomena than individual-level estimates.

## Poster Presentation

### Musculoskeletal

0258

#### PREVALENCE OF WORK-RELATED MUSCULOSKELETAL DISEASES AND DISABILITY IN CONSTRUCTION WORKERS IN ANKARA

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**Objectives** Musculoskeletal diseases (MSD) affect almost 30% of the global construction sector workforce. Recent studies have shown high risks in bricklayers, plasterers and carpenters. The main causes of MSD in construction workers are heavy lifting, repetitive movements and poor ergonomic working postures. However, there are no studies in Turkey assessing work-related MSD prevalence in the construction sector and related disability in work and daily life.

The aim of this study is to examine the prevalence of musculoskeletal symptoms in manual handling construction workers active in the construction of new buildings for a city hospital in Ankara. The study includes assessing the work-relatedness of MSD. Subsequently the effect of MSD on disability is analysed.

**Methods** We plan a cross-sectional study using a questionnaire on sociodemographic characteristics, risk factors at work and employment conditions, work history, health status, the Nordic Musculoskeletal Questionnaire and disability as a consequence of work-related MSD, using a face-to-face interview method. The interviews will be performed by trained occupational health and safety specialists from the Public Health Institution of Turkey (PHIT).

The study proposal has been approved by the PHIT and the construction company. Workers will be asked for informed consent.

**Results** We planned that 1.200 people will be included in the study. The prevalence of work-related MSD and disability will be determined, stratified for occupational groups and socio-demographic variables.

**Conclusion** The main outcome is prevalence of work-related MSDs in construction workers studied and related disability in work and daily life. Interventions will be recommended for prevention.

## Poster Presentation

### Respiratory

0259

#### AIR POLLUTANTS ASSOCIATED WITH BASELINE IN FRACTIONAL EXHALED NITRIC OXIDE (FeNO) IN SCHOOL CHILDREN

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Fractional exhaled nitric oxide (FeNO) is now recognised as a surrogate marker of eosinophilic airway inflammation and is affected by several factors, air pollution is an environmental determinant of it. Previous studies provide evidence that children are sensitive to the effects of air pollution. Therefore, the main objective of this study is to determine the effects of ambient air pollution on exhaled NO levels among school children.

From March 2016 to March 2017, a nationwide cross-sectional study was conducted in Taiwan using a modified Chinese version of the International Study of Asthma and Allergies in Childhood (ISSAC-C) questionnaire. Children received FeNO measurement in the morning, and inside buildings. Air pollution data were retrieved from air monitoring stations within two kilometre of the schools.

From 37 schools, 3344 students aged 6–15 years were randomly selected as candidates of the study. We complete monitoring data of air pollution, including SO<sub>2</sub>, O<sub>3</sub>, CO, NO<sub>2</sub>, PM<sub>2.5</sub> and PM<sub>10</sub>. Our preliminary results showed that the levels of FeNO were significantly ( $p < 0.05$ ) associated with average CO ( $0.48 \pm 0.4$  ppm), NO ( $5.48 \pm 10.21$  ppb), PM<sub>2.5</sub> ( $20.96 \pm 14.27$   $\mu\text{g}/\text{m}^3$ ), and PM<sub>10</sub> ( $46.44 \pm 22.78$   $\mu\text{g}/\text{m}^3$ ) concentrations of lag day1. In summary, results indicated that exposure ambient pollutants might affect FeNO levels of schoolchildren. In order to further investigate, multilevel modelling will be used to distinguish the sources of variation in the response. We plan to evaluate variations among children in the first level, and variations among schools in the second level.

## Poster Presentation

## Methodology

0260

**VISUALISING THE UNEMPLOYMENT-TO-EMPLOYMENT TRANSITIONS TO EXPLORE FACTORS INFLUENCING RETURN TO WORK IN THE WORK PROGRAMME: RESULTS FROM THE SUPPORTING OLDER PEOPLE INTO EMPLOYMENT (SOPIE) COHORT**

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**Objectives** Returning to employment after a period on welfare benefits is particularly challenging for people aged over-50 and those with health conditions. We explore the unemployment-to-employment transitions made by clients engaging with the Work Programme (WP); the UK Government's main return to work (RTW) initiative. It supports two main groups of welfare benefit claimants - JSA, for people who are unemployed but capable of work; ESA, for people with a disability that makes it more difficult to work.

**Methods** The data were from the SOPIE cohort (13 461 unemployed clients aged 18–64, who entered the WP in Scotland between April 2013 and July 2014). For clients who started a job, unemployment and employment spells during their two-year period in the WP were determined and sequence index plots produced using Stata version 14. These visualisations were explored by age and benefit type.

**Results** Job start rates were: 'JSA clients under-50', 65%; 'JSA clients over-50', 49%; 'ESA clients under-50', 23%; 'ESA clients over-50', 14%. Despite the lower numbers of ESA clients with a job start the visualisations revealed that these clients (both under and over-50) were as likely to sustain employment as JSA clients. Analyses also investigated employment by Standard Occupational Classification and full versus part-time.

**Conclusions** Visualising longitudinal employment data provides new insight into the relationship between age, health and the RTW process. Although people receiving health-related benefits (ESA) enter employment at lower rates, they can sustain employment similarly to JSA clients, suggesting support for policies aiming to reduce the disability employment gap.

## Oral Presentation

## Shift Work

0261

**THE EFFECTS OF NIGHT WORK AND LIGHT EXPOSURE ON SALIVARY MELATONIN CONCENTRATION DURING WORK DAYS AND DAYS OFF**

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**Objective** We aimed to examine the effects of night work on salivary melatonin concentrations during and subsequent to night work and the mediating role of light.

**Methods** We included 254 day workers and 87 night workers that were followed during 322 work days and 301 days off work. Each day was defined as the 24 hour period starting from the beginning of a night shift or awakening in mornings with daytime work and days off. Light levels were recorded and synchronised with diary information on start and end of sleep and work. On average, participants provided four saliva samples per day, and these were analysed for melatonin concentration. Differences between day and night workers on work days and days off were assessed with multilevel regression models with melatonin concentrations as outcome. All models were stratified or adjusted by time of the day. For light exposure, we estimated the total, direct, and indirect effects of night work on melatonin concentrations obtaining 95% confidence intervals through bootstrapping.

**Results** On work days, night workers showed 16.5% (95% CI 0.2; 30.5) lower salivary melatonin concentration compared with day workers. Light exposure seemed to mediate about 40% of the melatonin suppression seen during night, but no mediating effect of light was seen during day time. On days off, we observed no difference in melatonin concentration between day and night workers.

**Conclusion** These findings are in accordance with a transient and partly light mediated effect of night work on melatonin concentration.