Introduction Candidate risk factors for retinal detachment (RD) include heavy lifting. To explore further this relationship, a population-based register study was carried out in a Danish working population.

Methods This study enrolled a dynamic cohort of all 20–59 year-old men in Denmark followed through the Danish Occupational Hospitalisation Register from 1995 to 2010 for rhegmatogenous RD as principal diagnosis. Four main occupational categories were identified according to their potential for heavy lifting: heavy lifters, manual workers unlikely to be heavy lifters, other manual workers, and non-manual workers unlikely to be heavy lifters. We compared the age-standardised rate of RD for heavy lifters with that recorded by the other three occupational categories. We estimated rate ratios (RRs) and 95% confidence intervals (95% CIs) by fitting a Poisson regression model adjusted for calendar period and age group.

Results Non-manual workers performing occupational activities unlikely to be associated with heavy lifting experienced the highest age-standardised rate of RD (18.0 cases/100,000 person-years). The RR for workers in jobs expected to involve a high frequency of heavy lifting compared to manual workers whose occupation was unlikely to be associated with heavy lifting was 0.91 (95%CI, 0.73–1.14); in comparison with other manual workers, the RR was 0.93 (95%CI, 0.78–1.11). The RR compared to non-manual workers in occupations unlikely to involve heavy lifting was 0.51 (95%CI, 0.43–0.60). **Conclusion** The findings of this population-based register study do not support an association of occupational heavy lifting with RD. Further studies should use more specific measures of exposure and consider relevant confounders.

Oral Presentation

Shift Work

0161 THE ROLE OF PHYSICAL ACTIVITY IN THE ASSOCIATION BETWEEN SHIFT WORK AND BODY MASS INDEX

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Background Shift work is increasingly being suggested to be associated with an increased risk for overweight. Physical activity (PA) has been hypothesised to play a role in the health effects of shift work, but research on this role of PA is scarce. This study aimed to examine the association between night shift work and body mass index (BMI) and the moderating role of PA therein.

Methods Data from 588 workers were used from the prospective cohort Klokwerk+ study, examining the health effects of night shift work in health care workers. BMI was calculated by measured body weight (in kg) divided by body height (in metre squared). PA was measured using the validated Short Questionnaire to ASses Health-enhancing PA (SQUASH)

questionnaire. Linear regression analyses were performed for the associations between shift work and BMI; interaction terms were added to determine the influence of PA.

Results Mean BMI for shift workers was 25.3 (SD=4.2) versus 25.4 (SD=4.2) for non-shift workers ($p>0.05$). Shift workers were more moderately active than non-shift workers (beta 318 min/wk, 95% CI 141–496). After adjustment, there were no significant differences in the amount of vigorous intensity PA (beta -43 min/wk, 95% CI -115–26). There was no significant interaction for either moderate or vigorous PA in the shift work-BMI association.

Conclusions Our study could not confirm the hypothesis that PA moderates the shift work-BMI relation. To confirm these findings and to get more insight into the moderating and mediating role of PA and other lifestyle behaviours, more longitudinal studies are recommended.

Poster Presentation

Cancer

0162 MORTALITY AMONG AUTOWORKERS MANUFACTURING ELECTRONICS IN ALABAMA, U.S.A

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Former employees at a large automotive electronics manufacturing facility in Alabama, U.S.A. raised concerns over a suspected excess of cancer mortality among their fellow workers. The United Autoworkers (UAW) union sought the help of epidemiologists to investigate these concerns.

A cohort of 4396 workers employed at the facility between 1972 and 1993 was enumerated. Demographic and employment history information was obtained from union records. Follow-up to ascertain information about vital status and causes of death was conducted through 2016 drawing upon records of the U.S. Social Security Administration, pension records, voter registration records, and the U.S. National Death Index. Interviews with former employees have identified lead-based solder and chlorinated organic solvents as exposures of concern during the assembly of printed computer boards. Concerns were also raised about the presence of asbestos in the workplace. The mortality experience of the cohort is compared to expectations based upon national and regional reference rates using classical standardised mortality ratios as well as more novel comparisons of cumulative incidence (i.e., complement of survival) curves. Analyses also allow for internal comparisons according to job status and race.

We will report on preliminary results describing the characteristics and overall mortality experience of this cohort as part of our ongoing investigation, which is an example of a joint effort between the UAW and academic epidemiologists to directly address the health concerns of autoworkers using a cost- and time-efficient study design.

Poster Presentation

Methodology

0163 COMPARISON OF RISK ESTIMATES FROM COX PROPORTIONAL HAZARDS AND POISSON MODELING FOR ASSOCIATION OF OCCUPATIONAL TITANIUM DIOXIDE EXPOSURE AND SELECTED CAUSES OF DEATH

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Cox proportional hazards and stratified Poisson regression are commonly used models for time-dependent data in epidemiologic studies. However, whether these methods consistently produce comparable results for the estimate of risk for both rare and prevalent outcomes is unclear.

Data from a previous study that utilized stratified Poisson regression to investigate relationships between selected causes of death and annual cumulative exposures to titanium dioxide (TiO₂) were reanalysed using Cox proportional hazards modeling. The study cohort included 3,607 workers employed in three US manufacturing facilities, followed 1935–2006. Analyses were completed for cumulative doses in mg/m³-year with no lag and lagged 10 years, with all models specified similarly for covariates.

Overall, the Cox and Poisson models resulted in similar estimates in most dose categories for the selected causes of death, with no statistically significant indication of a positive association between TiO₂ exposure and death from all cancers, lung cancers, non-malignant respiratory disease, or all heart disease. The Cox model routinely produced narrower 95% confidence intervals (CI), although overlapping with those from Poisson. Borderline disagreement results were associated with risk estimates lagged 10 years for heart disease at dose >80: 1.51 (CI: 1.00, 2.25) from Poisson and 1.356 (CI: 0.922, 1.995) from Cox; and for all cancers at dose 15–35: 1.35 (CI: 0.89, 2.04) from Poisson and 1.485 (CI: 1.005, 2.193) from Cox.

Oral Presentation

Policy/Impact

0164 EARLY REPORTING INCENTIVES TO REDUCE TIME BETWEEN INJURY AND CLAIM: A MULTIPLE BASELINE INTERRUPTED TIME SERIES ANALYSIS OF TWO AUSTRALIAN WORKERS' COMPENSATION JURISDICTIONS

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Background Early access to healthcare and work rehabilitation services provided by workers' compensation is associated with faster return to work and reduced claim costs. Incentivising employers to report claims early following injury may reduce time to service access and improve injured worker outcomes. We investigated the impact of legislated early reporting

incentives on claim processing time in two Australian workers' compensation jurisdictions.

Methods A multiple baseline interrupted time series (ITS) design was used to evaluate incentive impact on claim processing time using Australian administrative workers' compensation data. We compared median days between injury and lodgement (lodgement time), lodgement and claim acceptance (decision time), and total processing time in South Australia (SA) and Tasmania (TAS).

Results Total time was not immediately affected by incentives, though there was a significant downward trend of one-third a day per month in both jurisdictions relative to the comparator. Lodgement time decreased significantly in both jurisdictions, though the magnitude of impacts differed. A concurrent increase in decision time was observed in TAS but not in SA.

Conclusions Our findings suggest that employer focused early reporting incentives may have long-term impacts on claim processing time. However, we also observed unanticipated effects such as increases to insurer decision making time, as well as differential impacts between jurisdictions despite identical policy intent. While co-occurring events such as other legislative changes limit causal inferences, ITS analyses provide a useful approach for investigating the impact of legislative change on policy relevant outcomes in workers' compensation systems.

Poster Presentation

Exposure Assessment

0165 A JOB EXPOSURE MATRIX FROM SELF-REPORTED PHYSICAL EXPOSURES: A METHOD TO CONTROL BIAS FROM SYMPTOMS

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Background Self-reported physical exposures are prone to bias from symptoms. Job Exposure Matrices (JEM) can give unbiased estimates but do not capture variation of exposures within the same job. This study created JEMs from self-reported exposures, both including and excluding responses from symptomatic workers, and compared these three exposure measures and their associations with hand/wrist pain.

Methods 35 000 employed French workers from the CONSTANCE cohort reported work-related physical exposures and current symptoms in the hand and other body areas. We grouped self-reported exposures at the level of the job title to create two JEMs - a full JEM including all workers, and an asymptomatic JEM excluding workers with pain symptoms. We examined differences in exposure estimates between the full and asymptomatic JEMs and the change of within-group and between-group variance. Log-binomial models tested strength of association between individual, full and asymptomatic JEMs to hand pain.

Results Most job-level exposure estimates were lower in the asymptomatic JEM. There was smaller within-group variance and larger between group variance in the asymptomatic JEM, demonstrating more homogenous exposure groups. Preliminary regression models showed similar estimates of association