diary filled out by the nurses at the end of each work-shift provided information concerning family and social relationships during a typical working week. Habits on coffee, smoke, time of meal assumption and home management during working days were also collected.

Result Nurses working on CCW shift rotation reported more frequently difficulties in keeping adequate family and social relationships compared to nurses working on CW one (96% vs 73%, $p=0.002$).

No differences were reported in coffee (3–4 cups/day), smoking (61%) habits and time of meals assumption (irregular in about 33% of nurses) during working days in the two groups. No differences were reported in the time spent in home management by the two groups.

Discussion CCW shift rotation seemed to disrupt quality of family and social relationships of nurses more than CW one. The fact that CCW shift rotation is associated to higher sleep disturbances and more fatigue in the free-time might partially explain these results. These aspects should be taken into account in shift-work schedule organisation, particularly in women.

1600 SHIFTING TIMES: RECENT ROTATIONAL SHIFTWORK AND INCIDENT HYPERTENSION RISK

¹J Ferguson*, ¹S Costello, ²M Cullen, ¹E Eisen. ¹School of Public Health, University of California Berkeley, Berkeley, California, USA; ²Stanford University, Stanford, California, USA

10.1136/oemed-2018-ICOHabstracts.1369

Introduction Rotational shiftwork, such as alternating day, afternoon, and night shifts, causes chronobiologic phase disruptions which may cause an increase in hypertension risk. Prior research has classified rotational shiftwork using assigned schedules in lieu of actual recorded work which may result in exposure misclassification. Therefore, we assessed the association between a novel quantitative definition of rotational shiftwork and incident hypertension.

Methods A cohort of 2156 new hires at 9 aluminium smelter and fabrication facilities were followed from 2003 through 2013 for incident hypertension defined by ICD-9 codes from insurance claims. Detailed time-registry data was used to classify each worker's history of rotational shiftwork. Rotational shiftwork was defined as shift with a larger than 4 hour absolute value change in start time from the preceding shift that started on an earlier day. The association between incident hypertension and rotational shiftwork in the previous 12 months was estimated in a Cox proportional hazards model, adjusting for age, sex, facility, smoking history, annual BMI, annual health claims based risk score, night shift exposure (percentage of shifts that were night shifts cumulatively and in the previous year), and history of rotational work.

Results The majority of workers (99.8%) experienced at least one rotation in their work history. The average worker had at 2.91 rotations (SD=1.87) per month with a mean of 130 rotations over their work history. Compared with workers with less than 5% rotational shiftwork in the previous year, the hazard ratio among workers with ≥ 5 –<15%, ≥ 15 –<30%, and ≥ 30 % rotational shiftwork in the previous year were 1.02 (0.64–1.64), 1.13 (0.73–1.76), and 1.53 (0.95–2.45) respectively. Estimates were robust to the adjustment for night shifts.

Conclusion Our results suggest recent rotational shiftwork exposure may be associated with higher rates of hypertension.

Furthermore, rotational shiftwork may have an independent effect on hypertension risk not explained by night work.

223 INFLUENCE OF CHRONOTYPE AND SHIFTWORK ON SLEEP DURATION AND OCCUPATIONAL ACCIDENTS: FINDINGS FROM A CROSS-SECTIONAL STUDY IN METAL WORKING INDUSTRY

¹Barbara Hirschwald*, ¹Yi Sun, ²Thomas Heitmann, ¹Frank Bochmann. ¹Institute for Occupational Safety and Health of the German Social Accident Insurance, St. Augustin, Germany; ²German Social Accident Insurance Institution for the woodworking and metalworking industries, Germany

10.1136/oemed-2018-ICOHabstracts.1370

Introduction Atypical work-times such as night shifts and very early shifts can affect the quality and quantity of sleep. Short sleep duration and disturbed sleep are associated with a heightened accident risk. Humans and animals are influenced by a biological clock which is genetically determined and synchronised by daylight. The study investigates the impact of the start of working time and chronotype on sleep duration and occupational accidents.

Methods In this cross-sectional study data were collected from about 550 employees in the woodworking and metalworking industry. Analyses were conducted for relationships between chronotype, start of working time, sleep duration and accidents.

Result The average chronotype moves by two hours towards an earlier type from the youngest to the oldest group of employees. Among the subjects without accidents 23% regard themselves as morning types, 69% as intermediate types and 9% as evening types. Among the subjects who had an accident 32% were morning types and 5% evening types. The late chronotypes get the least sleep on workdays and the early chronotypes get the least sleep on work-free days. Significant differences in the sleep duration were found for morning shift workers compared to day workers. A relevant proportion of the sleep deficit is due to the early start of working time.

Discussion The study shows significant chronotype-dependant differences in the sleep duration on work-days and free days. Early chronotypes seem to be unable to compensate their sleep deficit on free days, late types are unable to sleep early in the evening. Results will be useful to identify groups of workers at heightened risk for sleep deficit and sleepiness at work. In this way occupational accidents in shift workers and workers with an early starting time of work could be reduced.

480 HEALTHY DIET AND REDUCTION OF CHRONIC DISEASE RISKS OF NIGHT SHIFT WORKERS – A REVIEW

GM Ferri*, D Cavone, G Intraruovo, F Birtolo, E Lepore, L Macinagrossa. University of Bari, Italy, Interdisciplinary Department of Medicine (DIM), Section 'B. Ramazzini', University Regional Hospital 'Policlinico – Giovanni XXIII', Unit of Occupational Medicine

10.1136/oemed-2018-ICOHabstracts.1371

Introduction The large increase of epidemiological studies on night shift work is due to the important effects on workers' health and psychophysical wellbeing. The short-term effects are easily studied and they are: insomnia, difficulties in managing work and private life, lower work performance, more

work and extra-work accidents. The long-term effects, such as obesity, cardiovascular disease and cancer, are difficult to study, because of the need for detailed exposure assessment and the long latency periods of these diseases.

Method A review of literature on pubmed from 2000 to 2017 on diet and health effects in night shift workers was conducted to collect epidemiologic evidence of diseases in night shift workers, describing their biological pathways and a set of dietary guidelines.

Results Significant Rate Ratio and Hazard Ratio increases of different diseases associated to modified eating behaviour and poor eating habits among night shift workers are reported. The night shift work is a risk factor for disruption of the circadian rhythms and for some genetic deregulation, because it produces the inversion of the sleep/wake cycle and modifies the alternation between activity and rest.

Discussion Healthy diet and improved dietary practices can reduce shift-workers' chronic disease risk. In literature was shown the importance of eating behaviour in order to prevent diseases in these workers, therefore educational programs are necessary to encourage several important lifestyle changes. Interventions to reduce chronic disease risk among shift workers should incorporate several important lifestyle changes (i.e.: healthy diet, improved dietary practices, decreased drug and alcohol use, physical activity, proper sleep and light exposure). The reported findings suggest a possible role of education programs on eating behaviour as preventive strategies in this group of workers. Actually is missing a deep knowledge of the relationship between specific dietary compositions (i.e. Mediterranean diet) and the prevention programs of diseases among shift workers.

521 NIGHTSHIFT WORK AND PROSTATE CANCER AMONG HONG KONG CHINESE MEN

¹Lap Ah Tse*, ¹Feng Wang, ¹Priscilla Ming Yi Lee, ²Wing Ming Ho, ³Chi Fai Ng. ¹Division of Occupational and Environmental Health, JC School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong SAR, China; ²Department of Clinical Oncology, Prince of Wales Hospital, Hong Kong SAR, China; ³SH Ho Urology Centre, Department of Surgery, The Chinese University of Hong Kong, Hong Kong SAR, China

10.1136/oemed-2018-ICOHabstracts.1372

Introduction A positive association between nightshift work and prostate cancer risk has been reported in epidemiological studies, but the findings have been mixed. Also, none of the previous studies has attempted to sufficiently consider the possible confounding effect from dietary sources including environmental exposure to bisphenol A (BPA). This study aims to examine the association between nightshift work and prostate cancer risk among Hong Kong Chinese men after take into account more environmental exposures.

Methods We consecutively recruited 431 incident prostate cancer cases and age frequency matched 402 controls who had complete information on nightshift work. After receiving written consents, trained researchers interviewed participants using a standard questionnaire to obtain information on socio-demographics, smoking, dietary habits, habits of using plastic food containers, family cancer history, and occupational history and nightshift work. A newly developed novel cumulative BPA exposure index (CBPAI) was used to estimate chronic BPA exposure. Odds ratio and 95% confidence interval (95% CI) was performed using multiple logistic regression analysis.

Results The mean age of prostate cancer cases was comparable to the controls (69.4 vs 68.2 years). Compared with the controls (39.1%), more cases were less educated with a higher proportion of 'primary school or below' (41.1%). More cases than controls were the nightshift workers (13.5% vs 7.5%). After adjustment of age and socioeconomic characteristics, the OR of nightshift work to prostate cancer was 1.87 (95% CI: 1.16 to 3.01), and the OR retained statistical significance (OR=1.76, 95% CI: 1.07 to 2.89) after environmental exposures mainly from dietary sources were further adjusted.

Conclusions Results from this study provided supportive evidence that there might be a link between nightshift work and prostate cancer. The main merit of this study is that more environmental risk factors were considered in quantifying the association.

Funding Health and Medical Research Fund (Ref. No. 11121091), Hong Kong Special Administrative Region, China.

579 WORK SCHEDULE AND PROSPECTIVE ANTIDEPRESSANT PRESCRIPTIONS IN THE SWEDISH WORKFORCE: A 2-YEAR STUDY USING NATIONAL DRUG REGISTRY DATA

¹AL Hall*, ²G Kecklund, ²C Leineweber, ^{2,3}P Tucker. ¹School of Population and Public Health, University of British Columbia, Vancouver, Canada; ²Stress Research Institute, Stockholm University, Stockholm, Sweden; ³Department of Psychology, Swansea University, UK

10.1136/oemed-2018-ICOHabstracts.1373

Introduction Mood disorders affect millions of individuals worldwide and contribute to substantial morbidity and disability. A better understanding of modifiable work-related risk factors for depression could inform and advance prevention efforts in this area. This study used a large Swedish longitudinal occupational survey to prospectively examine the effect of self-reported work schedule on registry-based antidepressant prescriptions over a two-year period.

Methods The analytic sample (n=8643) was obtained from the Swedish Longitudinal Occupational Survey of Health. Sex-stratified and unstratified analyses were conducted using logistic regression. For exposure, 8 categories were used to describe work schedule in 2008: 'regular days' (3 categories: night work history=none, ≤3 years, or 4+years) 'night work (regular, rostered, or rotating)', 'regular shift work (no nights)', 'rostered work (no nights)', 'flexible/non-regulated hours', and 'other'. For the outcome, all prescriptions coded N06A according to the Anatomical Therapeutic Chemical System were obtained from the Swedish National Prescribed Drug Register and dichotomized into 'any' or 'no' prescriptions between 2008 and 2010. Estimates were adjusted for potential sociodemographic, health, and work confounders, and for prior depressive symptoms.

Results In unadjusted analyses, an increased odds ratio for depression was observed for 'Other' work hours in unstratified (OR=1.75, 95% CI: 1.21 to 2.51) and female (OR=1.62, 95% CI: 1.05 to 2.51) models; in adjusted models effects persisted but confidence intervals widened to non-significance at the p=0.05 level. In models adjusted for previous depressive symptoms, females in 'flexible/non-regulated' schedules showed an increased odds ratio for depression (OR=2.01, 95% CI: 1.08 to 3.76), while a decreased odds ratio was observed for the unstratified model 'regular shift work (no nights)' category (OR=0.61; 95% CI: 0.38 to 0.97).

Discussion This study's findings support prospective relationships between work schedule and antidepressant prescriptions