Introduction The world’s population is ageing. This creates a need to work for longer, both for income and to provide an adequate labour force. For those employed in predominantly physically demanding jobs this means they are prolonging their exposure to risk factors known to increase the likelihood of a musculoskeletal injury when their work capacity may be declining. The work ability of older workers has been most frequently assessed using the Work Ability Index (WAI). Several studies have reported significant associations between low WAI scores and sickness absence and early retirement. Relatively fewer studies have examined associations between WAI scores and specific workplace risk factors. The purpose of this study was to investigate the association between a range of workplace risk factors and the WAI scores in a cohort of workers employed in physically demanding jobs.

Methods A cross-sectional survey of workers employed in physically demanding roles within a local government council was undertaken. The survey instruments included questions on demographic and employment characteristics, physical and psychosocial risk factors, pain and discomfort, and the Work Ability Index.

Result The survey was completed by 155/245 of eligible workers – a 63% response rate. Respondents had a mean age of 44 years. They were predominantly male (86%) with an average length of employment of 12 years. Bivariate regression analyses were undertaken to examine the relationship between WAI scores and age, pain/discomfort, levels of stress, irritation, job satisfaction, work-life balance, and 49 other work environment risk factors. Significant associations with WAI scores were seen for age, pain/discomfort and physical and psychosocial risk factors. The WAI score was reduced by more than 2.5 points for those who reported higher levels of exposure to a range of physical and psychosocial risk factors compared with those who reported lower levels of exposure.

Discussion It was found that the WAI provided a useful means to identify a range of workplace risk factors which, if addressed, could inform the development of interventions to maintain a healthy, older workforce. It is proposed that tailoring interventions using this approach should enhance their effectiveness.

Aim of this special session Ageing and shiftwork is a rather new and ‘hot topic’ because of the intentions to prolong working lives in many countries. Because shiftwork could be very demanding for older employees it need more attention than earlier.

Methods This study was conducted in a large hospital in Denmark. The survey was performed over a period of 6 months. The main aim of the study was to investigate the prevalence of musculoskeletal complaints among shift workers compared to day workers and the influence of factors such as age, gender and shift schedule on the prevalence of complaints.

Results The results showed that shift workers had a higher prevalence of musculoskeletal complaints compared to day workers. The difference was most pronounced for back and neck pain. Additionally, the prevalence of complaints increased with age and was higher for women. The effect was more pronounced for permanent night workers compared to any other schedule. The study also found that employees had 9.0 (sd=1.0) fewer days when working permanent night, which is more than in all other schedules. In comparison, employees had 7.3 (sd=2.4) for permanent evening, 6.3 (sd=0.9) for day/evening, 5.3 (sd=1.0) for evening/night, and 5.5 (sd=0.7) for day/evening/night. There was no interaction effect between schedule and age.

Discussion The study is the first to investigate the prevalence of musculoskeletal complaints among shift workers and its influence on factors such as age, gender and shift schedule. The findings indicate that shiftwork is associated with adverse health effects and that age and gender play a role in this association. The results also suggest that permanent night work is more detrimental than other schedules, which is consistent with previous research. The results have implications for workplace health and safety policies and for the development of intervention strategies to mitigate the negative effects of shiftwork.
correctional work design, including around-the-clock operations and routine pressure to participate in overtime work may have additional consequences for health and retention of an ageing correctional workforce. In this study, we examined the implications of shift work and extended work hours for officers’ ability to maintain workability, health, and well-being in the face of stressful work demands, with attention focused on officer age (chronological age and psychological age) as a risk variable for increased negative outcomes.

Method As part of a Total Worker Health intervention study, corrections officers at a state correctional system in the northeastern USA participated in Wave 1 (n=335) or Wave 2 (n=260) of a survey that assessed physical and psychosocial work demands, work schedules, and several aspects of personal health and well-being. ANCOVA and moderated multiple regression analyses were used to examine the interactive effects of work schedule and age on relationships between work demands and worker health and well-being. An additional data collection in the same correctional system has recently been completed and will form the basis for follow-up analyses.

Result Initial findings indicate that corrections officers in this sample are at risk of several negative physical and mental health outcomes (e.g., obesity, depressive symptoms, burnout). Psychosocial features of corrections work, including work schedules, interacted with correctional officer age, with stronger negative consequences for several aspects of personal health and well-being among chronologically and psychologically older officers.

Conclusion In the face of an ageing corrections workforce, our findings suggest that particular attention should be paid to interventions that mitigate the impact of nightwork and overtime on the health and well-being of older officers.

1617c CIRCADIAN AND SLEEP HOMEOSTATIC INTERVENTION STRATEGIES FOR OLDER SHIFT WORKERS

Introduction Night work is associated with shorter sleep and greater chronic disease risk compared with day work, and older shiftworkers report even greater difficulty sleeping compared with younger workers. We tested a sleep and circadian rhythm intervention to examine whether it improved sleep duration and cortisol, a marker of physiological stress.

Method 26 healthy adults (57.6±3.9 y) who were not shiftworkers participated. Four laboratory Day shifts were followed by four Night shifts. Participants slept at home and maintained ~8 hour sleep schedules for a week before study and by four Night shifts. Participants slept at home and maintained ~8 hour sleep schedules for a week before study and by four Night shifts. After the first Night shift, participants were randomised into groups with different sleep instructions: control ad lib sleep (n=9); 8 hour evening sleep plus a light intervention (n=9); 8 hour evening sleep (n=5). The evening sleep groups were instructed to get into bed between 1–2 pm and remain in bed attempting to sleep for 8 hour. Sleep was monitored by actigraphy. At the start of the 4th Day shift and end of the 4th Night shift, a blood sample was taken for cortisol assay.

Result The sleep duration and cortisol level of the groups were not different at baseline. The 8 hour evening sleep groups showed similar sleep durations following night and day shifts, while the control group had shorter sleep (p<0.001). At the end of the 4th Night shift, the 8 hour evening sleep groups had significantly lower cortisol levels compared with the control group (p<0.02).

Discussion Our preliminary data indicate an 8 hour scheduled evening sleep episode after night shifts results in longer sleep in older shiftworkers, and this was associated with lower cortisol levels. While this remains to be tested in actual night workers, it suggests that the sleep intervention may have implications for improved health outcomes in older shiftworkers.

Grants RO1AG044416, ULTRRO011102, T32HL007901 from the NIH; Dancock University (to JHK).

1617d SHIFTWORK AND METABOLIC HEALTH RISKS – WHAT DOES THE LITERATURE CONCLUDE?

Introduction Although the metabolic health effects of shift work have been extensively studied, a systematic synthesis of the available research is lacking. This review aimed to systematically summarise the available evidence of longitudinal studies linking shift work with metabolic risk factors.

Method A systematic literature search was performed. Studies were included if (1) they had a longitudinal design; (2) shift work was studied as the exposure; and (3) the outcome involved a metabolic risk factor, including anthropometric, blood glucose, blood lipid, or blood pressure measures. Eligible studies were assessed for their methodologic quality. A best evidence synthesis consisting of three levels of evidence was used to draw conclusions per outcome: strong, moderate or insufficient evidence.

Result Thirty-nine articles describing 22 studies were included. Strong evidence was found for a relation between shift work and increased body weight/BMI, risk for overweight, and impaired glucose tolerance. For the remaining outcomes (waist circumference, blood lipids, and blood pressure), there was insufficient evidence.

Discussion Shift work seems to be associated with body weight gain, risk for overweight, and impaired glucose tolerance. Overall, lack of high-methodologic quality studies and inconsistency in findings led to insufficient evidence in assessing the relation between shift work and other metabolic risk factors. To strengthen the evidence, more high-quality longitudinal studies that provide more information on the shift work