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**\*Biswas A, Oh PI, Faulkner GE, Bonsignore A, Pakosh MT, and Alter DA. The energy expenditure benefits of reallocating sedentary time with physical activity: a systematic review and meta-analysis. Journal of Public Health. 2017; 1-9.**

<http://dx.doi.org/10.1093/pubmed/fox062>

Abstract: Background: We compared direct and daily cumulative energy expenditure (EE) differences associated with reallocating sedentary time to physical activity in adults for meaningful EE changes. Methods: Peer-reviewed studies in PubMed, Medline, EMBASE, CINAHL, PsycINFO, Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews were searched from inception to March 2017. Randomized and non-randomized interventions with sedentary time and EE outcomes in adults were included. Study quality was assessed by the National Heart Lung and Blood Institute tool, and summarized using random-effects meta-analysis and meta-regression. Results: In total, 26 studies were reviewed, and 24 studies examined by meta-analysis. Reallocating 6-9 h of sedentary time to light-intensity physical activity (LIPA) (standardized mean difference [SMD], 2.501 [CI: 1.204-5.363]) had lower cumulative EE than 6-9 h of combined LIPA and moderate-vigorous intensity physical activity (LIPA and moderate-vigorous physical activity [MVPA]) (SMD, 5.218 [CI: 3.822-6.613]). Reallocating 1 h of MVPA resulted in greater cumulative EE than 3-5 h of LIPA and MVPA, but <6-9 h of LIPA and MVPA. Conclusions: Comparable EE can be achieved by different strategies, and promoting MVPA might be effective for those individuals where a combination of MVPA and LIPA is challenging

**\*Carnide N, Hogg-Johnson S, Cote P, Irvin E, Van Eerd D, Koehoorn M, and Furlan AD. Early prescription opioid use for musculoskeletal disorders and work outcomes: a systematic review of the literature. Clinical Journal of Pain. 2017; 33(7):647-658.**

<http://dx.doi.org/10.1097/AJP.0000000000000452>

Abstract: OBJECTIVES: Musculoskeletal disorders (MSDs) are a common source of work disability. Opioid prescribing for MSDs has been on the rise, despite a lack of data on effectiveness. The objective of this study was to conduct a systematic review to determine whether early receipt of opioids is associated with future work outcomes among workers with MSDs compared with other analgesics, no analgesics, or placebo. METHODS: MEDLINE, EMBASE, CINAHL, and CENTRAL were searched from inception to 2014 and reference lists were scanned. Studies were included if opioids were prescribed within 12 weeks of MSD onset. Eligible outcomes included absenteeism, work status, receiving disability payments, and functional status. Two reviewers independently reviewed articles for relevance, risk of bias, and data extraction using standardized forms. Data synthesis using best evidence synthesis methods was planned. RESULTS: Five historical cohort studies met the inclusion criteria, all including workers filing wage compensation claims. Four studies demonstrated a significant association between early opioids and prolonged work disability. One study found a shorter time between prescriptions to be associated with shorter work disability. However, all studies were found to be at a high risk of bias and a best evidence synthesis could not be conducted. The main limitations identified were with exposure measurement and control of confounding. DISCUSSION: Current literature suggests that opioids provided within the first 12 weeks of onset of an MSD are associated with prolonged work disability. However, the conclusions of these studies need testing in a high-quality study that addresses the methodological shortcomings identified in the current review

**\*Hauser W, Schug S, and Furlan AD. The opioid epidemic and national guidelines for opioid therapy for chronic noncancer pain: a perspective from different continents. PAIN Reports. 2017; 2(3):e599.**

<http://dx.doi.org/10.1097/PR9.0000000000000599> [open access]

**Alheresh R, LaValley MP, Coster W, and Keysor JJ. Construct validity and scoring methods of the world health organization: health and work performance questionnaire among workers with arthritis and rheumatological conditions. Journal of Occupational and Environmental Medicine. 2017; 59(6):e112-e118.**

<http://dx.doi.org/10.1097/JOM.0000000000001044>

**Buden JC, Dugan AG, Faghri PD, Huedo-Medina TB, Namazi S, and Cherniack MG. Associations among work and family health climate, health behaviors, work schedule, and body weight. Journal of Occupational and Environmental Medicine. 2017; 59(6):588-599.**

<http://dx.doi.org/10.1097/JOM.0000000000001049>

Abstract: OBJECTIVES: Correctional employees exhibit elevated obesity rates. This study examines interrelations among health behaviors, health climate, body mass index (BMI), and work schedule. METHODS: Using survey results from correctional supervisors (n = 157), mediation and moderated-mediation analyses were performed to examine how health behaviors explain relationships between obesity, work health climate (WHC) and family health climate (FHC), and work schedule. RESULTS: Over 85% of the sample was overweight/obese (mean BMI = 30.20). Higher WHC and FHC were associated with lower BMI, mediated by nutrition, and physical activity. The interaction effect between health behavior and work schedule revealed a protective effect on BMI. Overtime shift work may share a relationship with BMI. CONCLUSIONS: Findings may have implications for reexamining organizational policies on maximum weekly overtime in corrections. They provide direction for targeted obesity interventions that encourage a supportive FHC and promote healthy behaviors among supervisors working overtime

**Chopp-Hurley JN, Brenneman EC, Wiebenga EG, Bulbrook B, Keir PJ, and Maly MR. Randomized controlled trial investigating the role of exercise in the workplace to improve work ability, performance, and patient-reported symptoms among older workers with osteoarthritis. Journal of Occupational and Environmental Medicine. 2017; 59(6):550-556.**

<http://dx.doi.org/10.1097/JOM.0000000000001020>

Abstract: OBJECTIVE: The aim of this study was to evaluate the effectiveness of a 12-week workplace exercise program on work ability, performance, and patient-reported symptoms in older university employees with knee and/or hip osteoarthritis. METHODS: Twenty-four participants with clinical hip and/or knee osteoarthritis were randomized to exercise or no exercise. At baseline and follow-up, several work (work ability, resilience), patient-reported (pain, physical function, depressive symptoms, self-efficacy), and performance outcomes (hip and knee strength, mobility performance) were measured. RESULTS: Significant improvements in work ability ( $P < 0.049$ ) and patient-reported outcomes (pain, function, depressive symptoms) existed in the exercise group. No improvements were demonstrated in the no exercise group. CONCLUSIONS: Exercise in the workplace improved work ability and patient-reported symptoms in older workers with osteoarthritis. The benefits of workplace exercise programs should be studied in a larger sample in which attention is given to improving exercise adherence

**Holness DL, Kudla I, Brown J, and Miller S. Awareness of occupational skin disease in the service sector. Occupational Medicine. 2017; 67(4):256-259.**

<http://dx.doi.org/10.1093/occmed/kgw082>

Abstract: Background: Occupational skin disease (OSD) is a common occupational disease. Although primary prevention strategies are known, OSDs remain prevalent in a variety of work environments including the service sector

(restaurant/food services, retail/wholesale, tourism/hospitality and vehicle sales and service). Aims: To obtain information about awareness and prevention of OSD in the service sector. Methods: Focus groups and a survey were conducted with two groups. The first consisted of staff of the provincial health and safety association for the service sector and the second group comprised representatives from sector employers. Focus groups highlighted key issues to inform the survey that obtained information about perceptions of awareness and prevention of OSD and barriers to awareness and prevention. Results: Both provincial health and safety association staff and sector employer representatives highlighted low awareness and a low level of knowledge of OSD in the sector. Barriers to awareness and prevention included a low reported incidence of OSD, low priority, lack of training materials, lack of time and cost of training, lack of management support and workplace culture. Conclusions: A starting point for improving prevention of OSD in the service sector is increased awareness. Identification of the barriers to awareness and prevention will help to shape an awareness campaign and prevention strategies. Building on existing experience in Europe will be important

**Jurisc M, Bean M, Harbaugh J, Cloeren M, Hardy S, Liu H, Nelson C, and Christian J. The personal physician's role in helping patients with medical conditions stay at work or return to work. Journal of Occupational and Environmental Medicine. 2017; 59(6):e125-e131.**

<http://dx.doi.org/10.1097/JOM.0000000000001055>

**Leece P, Buchman DZ, Hamilton M, Timmings C, Shantharam Y, Moore J, and Furlan AD. Improving opioid safety practices in primary care: protocol for the development and evaluation of a multifaceted, theory-informed pilot intervention for healthcare providers. BMJ Open. 2017; 7(4):e013244.**

<http://dx.doi.org/10.1136/bmjopen-2016-013244> [open access]

**Abstract:** INTRODUCTION: In North America, drug overdose deaths are reaching unprecedented levels, largely driven by increasing prescription opioid-related deaths. Despite the development of several opioid guidelines, prescribing behaviours still contribute to poor patient outcomes and societal harm. Factors at the provider and system level may hinder or facilitate the application of evidence-based guidelines; interventions designed to address such factors are needed. **METHODS AND ANALYSIS:** Using implementation science and behaviour change theory, we have planned the development and evaluation of a comprehensive Opioid Self-Assessment Package, designed to increase adherence to the Canadian Opioid Guideline among family physicians. The intervention uses practical educational and self-assessment tools to provide prescribers with feedback on their current knowledge and practices, and resources to improve their practice. The evaluation approach uses a pretest and post-test design and includes both quantitative and qualitative methods at baseline and 6 months. We will recruit a purposive sample of approximately 10 family physicians in Ontario from diverse practice settings, who currently treat

patients with long-term opioid therapy for chronic pain. Quantitative data will be analysed using basic descriptive statistics, and qualitative data will be analysed using the Framework Method. ETHICS AND DISSEMINATION: The University Health Network Research Ethics Board approved this study. Dissemination plan includes publications, conference presentations and brief stakeholder reports. This evidence-informed, theory-driven intervention has implications for national application of opioid quality improvement tools in primary care settings. We are engaging experts and end users in advisory and stakeholder roles throughout our project to increase its national relevance, application and sustainability. The performance measures could be used as the basis for health system quality improvement indicators to monitor opioid prescribing. Additionally, the methods and approach used in this study could be adapted for other opioid guidelines, or applied to other areas of preventive healthcare and clinical guideline implementation processes

**Lemke MK, Apostolopoulos Y, Hege A, Wideman L, and Sonmez S. Work organization, sleep and metabolic syndrome among long-haul truck drivers. *Occupational Medicine*. 2017; 67(4):274-281.**

<http://dx.doi.org/10.1093/occmed/kqx029>

**Abstract:** Background: The work organization of long-haul truck drivers in the USA contains factors that have been shown to degrade sleep. In combination, these factors generate elevated cardiometabolic risk by inducing components of the metabolic syndrome (MetS). However, the prevalence and severity of MetS and the degree to which such factors differentially influence MetS among these drivers are unknown. Aims: To determine the prevalence and severity of MetS among US long-haul truck drivers and to determine the predictive value of demographic, work organization and sleep variables in MetS diagnosis and severity. Methods: A non-experimental, descriptive, cross-sectional study, designed to collect survey, anthropometric and biometric data from US long-haul truck drivers. Descriptive analyses were performed for demographic, work organization, sleep and MetS measures. Logistic and linear regression analyses examined potential predictive relationships between demographic, work organization and sleep variables and MetS diagnosis and severity. Results: The study population was 262. Nearly 60% of drivers met MetS diagnosis criteria. Over 80% had a waist circumference >102 cm, 50% had triglyceride levels of  $\geq 150$  mg/dl, 66% had an high-density lipoprotein of <40 mg/dl, 28% had a blood pressure of  $\geq 135/80$  mm Hg and 17% had a fasting glucose of  $\geq 110$  mg/dl. Driving experience and work day sleep quality were associated with MetS prevalence and severity. Conclusions: The prevalence and severity of MetS among this sample of US long-haul truck drivers were high. Preventive efforts should focus on experienced drivers and work day sleep quality

**Li I, Mackey MG, Foley B, Pappas E, Edwards K, Chau JY, Engelen L, Voukelatos A, Whelan A, Bauman A, Winkler E, and Stamatakis E. Reducing office workers' sitting time at work using sit-stand protocols:**



**results from a pilot randomized controlled trial. Journal of Occupational and Environmental Medicine. 2017; 59(6):543-549.**

<http://dx.doi.org/10.1097/JOM.0000000000001018>

Abstract: OBJECTIVE: To examine the effects of different sit-stand protocols on work-time sitting and physical activity (PA) of office workers. METHODS: Participants (n = 26, 77% women, mean age 42) were randomly allocated to usual sitting (control) or one of three sit-stand protocols (intervention) facilitated by height-adjustable workstations for a 4-week period between June and August 2015. Sitting, standing, and stepping time were assessed by inclinometry (activPAL); leisure-time physical activity (LTPA) by self-report. One-way analysis of covariance (ANCOVA) and post-hoc (Bonferroni) tests explored between-group differences. RESULTS: Compared with baseline, intervention groups reduced work sitting time by 113 minutes/8-hour workday (95% confidence interval [CI] [-147,-79]) and increased work standing time by 96 minutes/8-hour workday (95% CI [67,125]) without significantly impacting LTPA/sleep time. CONCLUSIONS: Sit-stand protocols facilitated by height-adjustable workstations appear to reduce office workers' sitting time without significant adverse effects on LTPA

**Meng L, Robinson KT, and Smith ML. Factors associated with sickness absence among employees with chronic conditions. Occupational Medicine. 2017; 67(4):296-300.**

<http://dx.doi.org/10.1093/occmed/kqx028>

Abstract: Background: The growing prevalence of chronic conditions in the ageing workforce has been shown to have a negative impact in terms of optimal work performance and quality of life. It is therefore important to understand the factors associated with sickness absence due to health problems. Aims: To examine the socio-demographics, health status indicators, barriers to self-care and social support associated with working adults missing work because of chronic conditions. Methods: We analysed data from working adults in the USA with one or more chronic conditions who completed the National Council on Aging (NCOA) Chronic Care Survey. Analyses were performed using SPSS version 22; independent sample t-tests and chi-squared tests were used to compare sample characteristics and logistic regression was used to assess factors associated with missed work as a dichotomous outcome variable. Results: Among the 250 study subjects, employees who reported poorer general health status [odds ratio (OR) = 1.62, P < 0.05], more physician visits (OR = 1.45, P < 0.01), not having enough money for their health (OR = 3.69, P < 0.01) and a higher reliance on their co-workers (OR = 1.71, P < 0.05) were significantly more likely to report sickness absence due to their chronic conditions. Conclusions: To reduce absences among employees with chronic conditions, employers need to understand the importance of factors such as employee income, resources and knowledge of disease self-care. US employers should explore opportunities for employees to offset health care costs, apply appropriate time-flexible work

policies and encourage employees' participation in health knowledge enhancing interventions

**Park J, Esmail S, Rayani F, Norris CM, and Gross DP. Motivational interviewing for workers with disabling musculoskeletal disorders: results of a cluster randomized control trial. Journal of Occupational Rehabilitation. 2017; [Epub ahead of print].**

<http://dx.doi.org/10.1007/s10926-017-9712-3>

**Abstract:** Purpose Although functional restoration programs appear effective in assisting injured workers to return-to-work (RTW) after a work related musculoskeletal (MSK) disorder, the addition of Motivational Interviewing (MI) to these programs may result in higher RTW. Methods We conducted a cluster randomized controlled trial with claimants attending an occupational rehabilitation facility from November 17, 2014 to June 30, 2015. Six clinicians provided MI in addition to the standard functional restoration program and formed an intervention group. Six clinicians continued to provide the standard functional restoration program based on graded activity, therapeutic exercise, and workplace accommodations. Independent t tests and chi square analysis were used to compare groups. Multivariable logistic regression was used to obtain the odds ratio of claimants' confirmed RTW status at time of program discharge. Results 728 workers' compensation claimants with MSK disorders were entered into 1 of 12 therapist clusters (MI group = 367, control group = 361). Claimants were predominantly employed (72.7%), males (63.2%), with moderate levels of pain and disability (mean pain VAS = 5.0/10 and mean Pain Disability Index = 48/70). Claimants were stratified based on job attachment status. The proportion of successful RTW at program discharge was 12.1% higher for unemployed workers in the intervention group (intervention group 21.6 vs. 9.5% in control,  $p = 0.03$ ) and 3.0% higher for job attached workers compared to the control group (intervention group 97.1 vs. 94.1% in control,  $p = 0.10$ ). Adherence to MI was mixed, but RTW was significantly higher among MI-adherent clinicians. The odds ratio for unemployed claimants was 2.64 (0.69-10.14) and 2.50 (0.68-9.14) for employed claimants after adjusting for age, sex, pain intensity, perceived disability, and therapist cluster. Conclusion MI in addition to routine functional restoration is more effective than routine functional restoration program alone in improving RTW among workers with disabling MSK disorders

**Sharfstein JM. The opioid crisis from research to practice. Milbank Quarterly. 2017; 95(1):24-27.**

<http://dx.doi.org/10.1111/1468-0009.12241>

**Tansey TN, Iwanaga K, Bezyak J, and Ditchman N. Testing an integrated self-determined work motivation model for people with disabilities: a path analysis. Rehabilitation Psychology. 2017; [epub ahead of print]-**

<http://dx.doi.org/10.1037/rep0000141>

**Abstract:** OBJECTIVE: Individuals with disabilities are more likely to live in poverty, have more health issues, and be less likely to be employed than their

same-aged peers. Although these issues may be attenuated by vocational rehabilitation services, amotivation and ambivalence to employment can limit the readiness of persons with disabilities to engage in these services. Drawing on self-efficacy, self-determination, and stages of change theories, the purpose of this study was to develop and test an integrated self-determined work motivation model for people with disabilities. METHOD: Participants included 277 people with disabilities recruited through vocational rehabilitation agencies across 8 states. Path analysis was used to evaluate the contribution of functional disability, self-determination, and social efficacy variables in a hypothesized integrated self-determined work motivation model. Model estimations used maximum likelihood estimation and model-data fit was examined using several goodness-of-fit indices. RESULTS: The initial path analysis indicated a less than optimal fit between the model and the observed data. Post hoc model modifications were conducted based on examination of the critical ratios and modification indices and theoretical consideration. The respecified integrated self-determined work motivation model fit the data very well,  $\chi^2/df = 1.88$ , CFI = .99, and RMSEA = 0.056. The R<sup>2</sup> for the endogenous variables in the model ranged from .19 to .54. CONCLUSIONS: Findings from this study support the integrated self-determined work motivation model in vocational rehabilitation as a useful framework for understanding the relationship among functioning levels, self-determination and self-efficacy factors, vocational rehabilitation engagement, and readiness for employment. (PsycINFO Database Record

**Williams JAR, Sorensen G, Hashimoto D, Hopcia K, Wagner GR, and Boden LI. Impact of occupational injuries on nonworkers' compensation medical costs of patient-care workers. Journal of Occupational and Environmental Medicine. 2017; 59(6):e119-e124.**

<http://dx.doi.org/10.1097/JOM.0000000000001047>

\*IWH authored publications.