IWH Research Alert
January 27, 2017

*Dion S, Wong JJ, Cote P, Yu H, Sutton D, Randhawa K, Southerst D, Varatharajan S, Stern PJ, Nordin M, Chung C, D'Angelo K, Dresser J, Brown C, Menta R, Ammendolia C, Shearer HM, Stupar M, Ameis A, Mior S, Carroll LJ, Jacobs C, and Taylor-Vaisey A. Are passive physical modalities effective for the management of common soft tissue injuries of the elbow?: a systematic review by the Ontario protocol for traffic injury management (Optima) collaboration. Clinical Journal of Pain. 2017; 33(1):71-86.
http://dx.doi.org/10.1097/AJP.0000000000000368

Abstract: OBJECTIVE: To evaluate the effectiveness of passive physical modalities for the management of soft tissue injuries of the elbow. METHODS: We systematically searched MEDLINE, EMBASE, CINAHL, PsycINFO, and Cochrane Central Register of Controlled Trials from 1990 to 2015. Studies meeting our selection criteria were eligible for critical appraisal. Random pairs of independent reviewers critically appraised eligible studies using the Scottish Intercollegiate Guidelines Network criteria. We included studies with a low risk of bias in our best evidence synthesis. RESULTS: We screened 6618 articles; 21 were eligible for critical appraisal and 9 (reporting on 8 randomized controlled trials) had a low risk of bias. All randomized controlled trials with a low risk of bias focused on lateral epicondylitis. We found that adding transcutaneous electrical nerve stimulation to primary care does not improve the outcome of patients with lateral epicondylitis. We found inconclusive evidence for the effectiveness of: (1) an elbow brace for managing lateral epicondylitis of variable duration; and (2) shockwave therapy or low-level laser therapy for persistent lateral epicondylitis. DISCUSSION: Our review suggests that transcutaneous electrical nerve stimulation provides no added benefit to patients with lateral epicondylitis. The effectiveness of an elbow brace, shockwave therapy, or low-level laser therapy for the treatment of lateral epicondylitis is inconclusive. We found little evidence to inform the use of passive physical modalities for the management of elbow soft tissue injuries

*Williams CM, Penkala S, Smith P, Haines T, and Bowles KA. Exploring musculoskeletal injuries in the podiatry profession: an international cross sectional study. Journal of Foot and Ankle Research. 2017; 10:3.
http://dx.doi.org/10.1186/s13047-016-0185-y   **[open access]**

Abstract: BACKGROUND: Workplace injury is an international costly burden. Health care workers are an essential component to managing musculoskeletal disorders, however in doing this, they may increase their own susceptibility. While there is substantial evidence about work-related musculoskeletal disorders across the health workforce, understanding risk factors in specific occupational groups, such as podiatry, is limited. The primary aim of this study was to determine the prevalence and intensity of work related low back pain in podiatrists. METHODS: This was an international cross-sectional survey targeting podiatrists in Australia, New Zealand and the United Kingdom. The survey had two components; general demographic variables and variables relating to general musculoskeletal pain in general or podiatry work-related musculoskeletal pain. Multivariable regression analyses were used to identify factors associated with musculoskeletal stiffness and pain and low back pain intensity. Thematic analysis was used to group comments podiatrists made about their musculoskeletal health. RESULTS: There were 948 survey responses (5% of Australian, New Zealand and United Kingdom registered podiatrists). There were 719 (76%) podiatrists reporting musculoskeletal pain as a result of their work practices throughout their career. The majority of injuries reported were in the first five years of practice (n = 320, 45%). The body area reported as being the location of the most significant injury was the low back (203 of 705 responses, 29%). Being female ($p < 0.001$) and working in private practice ($p = 0.003$) was associated with musculoskeletal pain or stiffness in the past 12 months. There were no variables associated with pain or stiffness in the past four weeks. Being female was the only variable associated with higher pain ($p = 0.018$). There were four main themes to workplace musculoskeletal pain: 1. Organisational and procedural responses to injury, 2. Giving up work, taking time off, reducing hours, 3. Maintaining good musculoskeletal health and 4. Environmental change. CONCLUSIONS: The postures that podiatrists hold while treating patients appear to impact on musculoskeletal pain and stiffness. Recently graduated and female podiatrists are at higher risk of injury. There is a need for the profession to consider how they move and take care of their own musculoskeletal health

Barth J, de Boer WE, Busse JW, Hoving JL, Kedzia S, Couban R, Fischer K, von Allmen DY, Spanjer J, and Kunz R. Inter-rater agreement in evaluation of disability: systematic review of reproducibility studies. British Medical Journal. 2017; 356:j14.
http://dx.doi.org/10.1136/bmj.j14   **[open access]**

Abstract: OBJECTIVES: To explore agreement among healthcare professionals assessing eligibility for work disability benefits. DESIGN: Systematic review and narrative synthesis of reproducibility studies. DATA SOURCES: Medline,

Embase, and PsycINFO searched up to 16 March 2016, without language restrictions, and review of bibliographies of included studies. ELIGIBILITY CRITERIA: Observational studies investigating reproducibility among healthcare professionals performing disability evaluations using a global rating of working capacity and reporting inter-rater reliability by a statistical measure or descriptively. Studies could be conducted in insurance settings, where decisions on ability to work include normative judgments based on legal considerations, or in research settings, where decisions on ability to work disregard normative considerations. : Teams of paired reviewers identified eligible studies, appraised their methodological quality and generalisability, and abstracted results with pretested forms. As heterogeneity of research designs and findings impeded a quantitative analysis, a descriptive synthesis stratified by setting (insurance or research) was performed. RESULTS: From 4562 references, 101 full text articles were reviewed. Of these, 16 studies conducted in an insurance setting and seven in a research setting, performed in 12 countries, met the inclusion criteria. Studies in the insurance setting were conducted with medical experts assessing claimants who were actual disability claimants or played by actors, hypothetical cases, or short written scenarios. Conditions were mental (n=6, 38%), musculoskeletal (n=4, 25%), or mixed (n=6, 38%). Applicability of findings from studies conducted in an insurance setting to real life evaluations ranged from generalisable (n=7, 44%) and probably generalisable (n=3, 19%) to probably not generalisable (n=6, 37%). Median inter-rater reliability among experts was 0.45 (range intraclass correlation coefficient 0.86 to kappa-0.10). Inter-rater reliability was poor in six studies (37%) and excellent in only two (13%). This contrasts with studies conducted in the research setting, where the median inter-rater reliability was 0.76 (range 0.91-0.53), and 71% (5/7) studies achieved excellent inter-rater reliability. Reliability between assessing professionals was higher when the evaluation was guided by a standardised instrument (23 studies, P=0.006). No such association was detected for subjective or chronic health conditions or the studies' generalisability to real world evaluation of disability (P=0.46, 0.45, and 0.65, respectively). CONCLUSIONS: Despite their common use and far reaching consequences for workers claiming disabling injury or illness, research on the reliability of medical evaluations of disability for work is limited and indicates high variation in judgments among assessing professionals. Standardising the evaluation process could improve reliability. Development and testing of instruments and structured approaches to improve reliability in evaluation of disability are urgently needed

Corin L and Bjork L. Job demands and job resources in human service managerial work an external assessment through work content analysis. Nordic Journal of Working Life Studies. 2017; 6(4):3-28.
http://dx.doi.org/10.19154/njwls.v6i4.5610

Feleus A, Miedema HS, Bierma-Zeinstra SM, Hoekstra T, Koes BW, and Burdorf A. Sick leave in workers with arm, neck and/or shoulder

complaints; defining occurrence and discriminative trajectories over a 2-year time period. Occupational and Environmental Medicine. 2017; 74(2):114-122.
http://dx.doi.org/10.1136/oemed-2016-103624

Abstract: OBJECTIVES: Impediments due to complaints of non-traumatic arm, neck and/or shoulder (CANS) during work often leads to consultation in primary care. This study examines the occurrence of sick leave among workers with new CANS, and evaluates sick leave trajectories and their characteristics. METHODS: This prospective 2-year cohort study included workers with a new CANS presenting in general practice. Participants filled out postal questionnaires on sick leave at 6-monthly intervals. Latent class growth mixture modelling was used to identify distinct trajectories of sick leave. Multinomial regression analyses identified characteristics of the subgroups. RESULTS: During follow-up, of the 533 participants 190 reported at least one episode of sick leave due to CANS. Three sick leave trajectories were distinguished: (1) 'low-risk' trajectory (n=366), with a constant low probability over time; (2) 'intermediate risk' trajectory, with a high probability at first consultation followed by a steep decrease in probability of sick leave (n=122); (3) 'high-risk' trajectory (n=45), with a constant high probability of sick leave. Compared to the 'low-risk' trajectory, the other trajectories were characterised by more functional limitations, less specific diagnoses, more work-related symptoms and low coworker support. Specific for the 'high-risk' subgroup were more recurrent symptoms, more musculoskeletal comorbidity, high score on somatisation and low score on job demands. CONCLUSIONS: Three trajectories of sick leave were distinguished, graded from favourable to unfavourable. Several complaint-related and work-related factors and somatisation contributed modestly to identify an unfavourable trajectory of sick leave when presenting in primary care with CANS

Freitas AC and Silva SA. Exploring OHS trainers' role in the transfer of training. Safety Science. 2017; 91:310-319.
http://dx.doi.org/10.1016/j.ssci.2016.08.007

Gnoni MG and Saleh JH. Near-miss management systems and observability-in-depth: handling safety incidents and accident precursors in light of safety principles. Safety Science. 2017; 91:154-167.
http://dx.doi.org/10.1016/j.ssci.2016.08.012

Goldberg M, Carton M, Descatha A, Leclerc A, Roquelaure Y, Santin G, Zins M, and the CONSTANCES team. CONSTANCES: a general prospective population-based cohort for occupational and environmental epidemiology: cohort profile. Occupational and Environmental Medicine. 2017; 74(1):66-71.
http://dx.doi.org/10.1136/oemed-2016-103678   [open access]
Abstract
Why the cohort was set up?CONSTANCES is a general-purpose cohort with a focus on occupational and environmental factors.

Cohort participants CONSTANCES was designed as a randomly selected sample of French adults aged 18–69 years at inception; 200 000 participants will be included.

Data collection phases At enrolment, the participants are invited to complete questionnaires and to attend a health screening centre (HSC) for a health examination. A biobank will be set up. The follow-up includes an yearly self-administered questionnaire, a periodic visit to an HSC and linkage to social and national health administrative databases.

Main types of data collected Data collected for participants include social and demographic characteristics, socioeconomic status, life events and behaviours. Regarding occupational and environmental factors, a wealth of data on organisational, chemical, biological, biomechanical and psychosocial lifelong exposure, as well as residential characteristics, are collected at enrolment and during follow-up. The health data cover a wide spectrum: self-reported health scales, reported prevalent and incident diseases, long-term chronic diseases and hospitalisations, sick-leaves, handicaps, limitations, disabilities and injuries, healthcare usage and services provided, and causes of death.

Control of selection effects To take into account non-participation and attrition, a random cohort of non-participants was set up and will be followed through the same national databases as participants.

Data access Inclusions begun at the end of 2012 and more than 110 000 participants were already included by September 2016. Several projects on occupational and environmental risks already applied to a public call for nested research projects.

Hall AL, Smit AN, Mistlberger RE, Landry GJ, and Koehoorn M. Organisational characteristics associated with shift work practices and potential opportunities for intervention: findings from a Canadian study. Occupational and Environmental Medicine. 2017; 74(1):6-13.
http://dx.doi.org/10.1136/oemed-2016-103664

Abstract: INTRODUCTION: Shift work is a common working arrangement with wide-ranging implications for worker health. Organisational determinants of shift work practices are not well characterised; such information could be used to guide evidence-based research and best practices to mitigate shift work's negative effects. This exploratory study aimed to describe and assess organisational-level determinants of shift work practices thought to affect health, across a range of industry sectors. METHODS: Data on organisational characteristics, shift work scheduling, provision of shift work education materials/training to employees and night-time lighting policies in the workplace were collected during phone interviews with organisations across the Canadian province of British Columbia. Relationships between organisational characteristics and shift work practices were assessed using multivariable logistic regression models. RESULTS: The study sample included 88 participating organisations, representing 30 700 shift workers. Long-duration shifts, provision of shift work education materials/training to employees and night-time lighting

policies were reported by approximately one-third of participating organisations. Odds of long-duration shifts increased in larger workplaces and by industry. Odds of providing shift work education materials/training increased in larger workplaces, in organisations reporting concern for shift worker health and in organisations without seasonal changes in shift work. Odds of night-time lighting policies in the workplace increased in organisations reporting previous workplace accidents or incidents that occurred during non-daytime hours, site maintenance needs and client service or care needs. CONCLUSIONS: This study points to organisational determinants of shift work practices that could be useful for targeting research and workplace interventions. Results should be interpreted as preliminary in an emerging body of literature on shift work and health

Harvey SB, Modini M, Joyce S, Milligan-Saville JS, Tan L, Mykletun A, Bryant RA, Christensen H, and Mitchell PB. Can work make you mentally ill? A systematic meta-review of work-related risk factors for common mental health problems. Occupational and Environmental Medicine. 2017; [Epub ahead of print].
http://dx.doi.org/10.1136/oemed-2016-104015

Abstract: It has been suggested that certain types of work may increase the risk of common mental disorders, but the exact nature of the relationship has been contentious. The aim of this paper is to conduct the first comprehensive systematic meta-review of the evidence linking work to the development of common mental health problems, specifically depression, anxiety and/or work-related stress and to consider how the risk factors identified may relate to each other. MEDLINE, PsychInfo, Embase, the Cochrane Collaboration and grey literature databases were systematically searched for review articles that examined work-based risk factors for common mental health problems. All included reviews were subjected to a quality appraisal. 37 review studies were identified, of which 7 were at least moderate quality. 3 broad categories of work-related factors were identified to explain how work may contribute to the development of depression and/or anxiety: imbalanced job design, occupational uncertainty and lack of value and respect in the workplace. Within these broad categories, there was moderate level evidence from multiple prospective studies that high job demands, low job control, high effort-reward imbalance, low relational justice, low procedural justice, role stress, bullying and low social support in the workplace are associated with a greater risk of developing common mental health problems. While methodological limitations continue to preclude more definitive statements on causation between work and mental disorders, there is now a range of promising targets for individual and organisational-level interventions aimed at minimising mental health problems in the workplace

Larrieta-Rubin de Celis I, Fernandez de Bobadilla-Gumez S, del Mar Alonso-Almeida M, and Velasco-Balmaseda E. Women's occupational health and safety management: an issue for corporate social responsibility. Safety

Science. 2017; 91:61-70.
http://dx.doi.org/10.1016/j.ssci.2016.07.019

Leach LS, Poyser C, and Butterworth P. Workplace bullying and the association with suicidal ideation/thoughts and behaviour: a systematic review. Occupational and Environmental Medicine. 2017; 74(1):72-79.
http://dx.doi.org/10.1136/oemed-2016-103726
Abstract: The established links between workplace bullying and poor mental health provide a prima facie reason to expect that workplace bullying increases the risk of suicidal ideation (thoughts) and behaviours. Until now, there has been no systematic summary of the available evidence. This systematic review summarises published studies reporting data on workplace bullying and suicidal ideation, or behaviour. The review sought to ascertain the nature of this association and highlight future research directions. 5 electronic databases were searched. 2 reviewers independently selected the articles for inclusion, and extracted information about study characteristics (sample, recruitment method, assessment and measures) and data reporting the association of workplace bullying with suicidal ideation and behaviour. 12 studies were included in the final review-8 reported estimates of a positive association between workplace bullying and suicidal ideation, and a further 4 provided descriptive information about the prevalence of suicidal ideation in targets of bullying. Only 1 non-representative cross-sectional study examined the association between workplace bullying and suicidal behaviour. The results show an absence of high-quality epidemiological studies (eg, prospective cohort studies, which controlled for workplace characteristics and baseline psychiatric morbidity). While the available literature (predominantly cross-sectional) suggests that there is a positive association between workplace bullying and suicidal ideation, the low quality of studies prevents ruling out alternative explanations. Further longitudinal, population-based research, adjusting for potential covariates (within and outside the workplace), is needed to determine the level of risk that workplace bullying independently contributes to suicidal ideation and behaviour

Mullen J, Kelloway EK, and Teed M. Employer safety obligations, transformational leadership and their interactive effects on employee safety performance. Safety Science. 2017; 91:405-412.
http://dx.doi.org/10.1016/j.ssci.2016.09.007

Pinion C, Brewer S, Douphrate D, Whitehead L, DelliFraine J, Taylor WC, and Klyza J. The impact of job control on employee perception of management commitment to safety. Safety Science. 2017; 93:70-75.
http://dx.doi.org/10.1016/j.ssci.2016.11.015

Schwatka NV, Atherly A, Dally MJ, Fang H, vS Brockbank C, Tenney L, Goetzel RZ, Jinnett K, Witter R, Reynolds S, McMillen J, and Newman LS. Health risk factors as predictors of workers' compensation claim occurrence and cost. Occupational and Environmental Medicine. 2017;

Abstract: OBJECTIVE: The objective of this study was to examine the predictive relationships between employee health risk factors (HRFs) and workers' compensation (WC) claim occurrence and costs. METHODS: Logistic regression and generalised linear models were used to estimate the predictive association between HRFs and claim occurrence and cost among a cohort of 16 926 employees from 314 large, medium and small businesses across multiple industries. First, unadjusted (HRFs only) models were estimated, and second, adjusted (HRFs plus demographic and work organisation variables) were estimated. RESULTS: Unadjusted models demonstrated that several HRFs were predictive of WC claim occurrence and cost. After adjusting for demographic and work organisation differences between employees, many of the relationships previously established did not achieve statistical significance. Stress was the only HRF to display a consistent relationship with claim occurrence, though the type of stress mattered. Stress at work was marginally predictive of a higher odds of incurring a WC claim (p<0.10). Stress at home and stress over finances were predictive of higher and lower costs of claims, respectively (p<0.05). CONCLUSIONS: The unadjusted model results indicate that HRFs are predictive of future WC claims. However, the disparate findings between unadjusted and adjusted models indicate that future research is needed to examine the multilevel relationship between employee demographics, organisational factors, HRFs and WC claims

Abstract: OBJECTIVE: To estimate the prevalence of a comprehensive set of self-reported sleep problems by job characteristics, including shiftwork status, among a representative sample of US workers. METHODS: Data for 6338 workers aged >/=18 years were obtained from the National Health and Nutrition Examination Survey. Short sleep duration was defined as <7 hours per weekday/workday. Sleep quality was categorised as good, moderate and poor based on the frequency of 6 sleep-related symptoms. A sleep-related activities of daily living (ADL) score >/=2 was defined as impaired. Insomnia was defined as having poor sleep quality and impaired ADL. Shiftwork status was categorised as daytime, night, evening, rotating or another schedule. Prevalence rates were calculated and multivariate logistic regression analyses were used. RESULTS: The prevalence of short sleep duration (37.6% overall) was highest among night shift workers (61.8%; p<0.001). The prevalence of poor sleep quality was 19.2% among all workers, with the highest prevalence among night shift workers (30.7%, p=0.004). The prevalence of impaired ADL score (24.8% overall) and insomnia (8.8% overall) was also highest for night shift workers (36.2%, p=0.001 and 18.5%, p=0.013, respectively). In multivariate analysis, night shift workers

had the highest likelihood of these sleep problems. CONCLUSIONS: Self-reported short sleep duration, poor sleep quality, impaired ADL score and insomnia are common among US workers especially among night shift workers. Although these findings should be confirmed with objective sleep measures, they support the need for intervention programmes to improve sleep quantity and quality among night shift workers

Zwetsloot GIJM, Kines P, Wybo JL, Ruotsala R, Drupsteen L, and Bezemer RA. Zero Accident Vision based strategies in organisations: Innovative perspectives. Safety Science. 2017; 91:260-268.
http://dx.doi.org/10.1016/j.ssci.2016.08.016

*IWH authored publications.