

**IWH Research Alert**  
**October 5, 2018**

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**\*Dobson KG, Gilbert-Ouimet M, Mustard CA, and Smith PM. Association between dimensions of the psychosocial and physical work environment and latent smoking trajectories: a 16-year cohort study of the Canadian workforce. *Occupational and Environmental Medicine*. 2018; [epub ahead of print].**

**<https://doi.org/10.1136/oemed-2018-105138>**

**Abstract:** BACKGROUND: This study aimed to determine the number of latent smoking trajectories among Canadians employed in the workforce over a 16-year period, and if latent trajectories in dimensions of the physical and psychosocial work environment were associated with specific smoking trajectories.

**METHODS:** We studied 5461 employed adults from the longitudinal Canadian National Population Health Survey. Daily cigarette consumption was measured biannually from 1994 to 2010. Work environment factors (skill discretion, decision authority, psychological demands, job insecurity, physical exertion and workplace social support) were measured in 1994 and then from 2000 to 2010 using an abbreviated form of the Job Content Questionnaire. Smoking and work environment trajectories were derived using group-based trajectory modelling. Associations between work environment trajectory classes and smoking trajectory classes were estimated using multinomial logistic regression.

**RESULTS:** Four latent smoking trajectories were seen: non-smokers; ceasing smokers (consuming ~14 cigarettes/day in 1994 and 0 in 2008-2010); smokers (consuming ~7 cigarettes/day between 1994 and 2010); and heavy smokers (consuming ~22 cigarettes/day in 1994 and ~14 in 2010). Lower skill discretion, high psychological demands, high physical exertion and low social support trajectories were associated with membership in the heavy smoking trajectory compared with the non-smoking trajectory. Low decision authority, high

psychological demands and high physical exertion trajectories were associated with membership in the ceasing compared with the non-smoking trajectory. CONCLUSIONS: Certain physical and psychosocial work environment trajectories were associated with heavy and ceasing smoking behaviours over a 16-year period. The role of the work environment should be further considered in smoking cessation programmes

**\*Kosny A, Lifshen M, MacEachen E, Furlan A, Koehoorn M, Beaton D, Cooper J, and Neis B. What are physicians told about their role in return to work and workers' compensation systems? An analysis of Canadian resources. Policy and Practice in Health and Safety. 2018; [epub ahead of print].**  
<https://doi.org/10.1080/14773996.2018.1465264>

**Bailey MM, Collier RK, and Pollack Porter KM. A qualitative study of facilitators and barriers to implementing worksite policies that support physical activity. BMC Public Health. 2018; 18(1):1145.**

<https://doi.org/10.1186/s12889-018-6045-x> [open access]

Abstract: BACKGROUND: Physical inactivity is associated with several chronic diseases that are costly to society, employers, and individuals. Workplaces are a common location for physical activity (PA) initiatives because of the amount of time individuals who are employed full time spend at work. This research examined a statewide worksite wellness program, the Healthiest Maryland Businesses (HMB) program, to fill an important gap regarding the facilitators for and barriers to implementing workplace policies that support PA. METHODS: Individual telephone interviews were conducted in December 2015 with six HMB Coordinators and their supervisor, and from August through October 2016 with a purposeful sample of 15 businesses of various sizes from across Maryland, to learn about the role of leadership, and successes and challenges of implementing PA programs and policies. The sample of businesses was intentionally selected to capture perspectives from a range of businesses. Interviews were recorded and professionally transcribed. Descriptive coding was used to identify dominant themes that addressed the study aims and research questions. RESULTS: PA was not described as a priority for several large and small businesses. To garner more support for PA, interviewees emphasized associating PA initiatives with measures the businesses care about, such as health care costs from claims data. Small businesses also described having a need for PA programming yet reported having significant resource constraints. There was a strong interest in developing guidance for implementing PA break policies, which was mentioned as a critical support for workplace PA promotion. More commitment and investment of resources from leadership, and an engaged wellness committee with company representation at all levels and roles, were identified as vital for impactful programs. CONCLUSIONS: Most businesses are implementing PA programs with limited policy supports, which was mentioned as a barrier. Successful implementation of workplace wellness programs broadly,

and PA initiatives specifically, are achievable through leadership buy-in, employee input, and policy supports, along with highlighting the economic benefits for businesses

**Besen E, Young A, Gaines B, and Pransky G. Lag times in the work disability process: differences across diagnoses in the length of disability following work-related injury. *Work*. 2018; 60(4):635-648. <https://doi.org/10.3233/WOR-182771>**

Abstract: BACKGROUND: The amount of time between key points in the work disability and workers' compensation process, referred to as lag times, has been shown to relate to work disability outcomes but little research has examined how this finding may differ based on the diagnosis associated with the cause of work disability. OBJECTIVE: To examine whether relationships between lag times in the work disability process and disability duration vary by diagnosis in a sample of workers' compensation claims. METHODS: Using workers' compensation claims, Analysis of Covariance was used to estimate differences in disability duration across three lag times (days from the date of injury to: reporting the injury, seeking medical care, and starting lost work time paid by the workers' compensation insurer) and injury diagnosis groups (Work-related Musculoskeletal Disorders (WRMSD) and fractures). RESULTS: WRMSD tended to have longer lag times than fractures, whereas disability duration tended to be longer for fractures than WRMSD. Overall, shorter lag times were associated with shorter disability duration, but the relationships varied across diagnosis groups, and greater variation in disability duration was observed for WRMSD compared to fractures. CONCLUSIONS: The findings suggest the importance of responding to work-related injuries by reporting the injury, receiving medical care, and taking time off of work if necessary, in a timely fashion

**Boersema HJ, Cornelius B, de Boer WEL, van der Klink JJJ, and Brouwer S. The assessment of work endurance in disability evaluations across European countries. *PLoS ONE*. 2018; 13(9):e0202012. <https://doi.org/10.1371/journal.pone.0202012> [open access]**

Abstract: PURPOSE: Chronic disease is often associated with a reduced energy level, which limits the capacity to work full-time. This study aims to investigate whether the construct work endurance is part of disability assessment in European countries and what assessment procedures are used. We defined work endurance as the ability to sustain working activities for a number of hours per day and per week. MATERIALS AND METHODS: We conducted a survey using two self-constructed questionnaires. We addressed 35 experts from 19 countries through the European Union of Medicine in Assurance and Social Security (EUMASS). We gathered descriptive data on various aspects of (the assessment of) work endurance. RESULTS: Experts from 16 countries responded. In most countries work endurance is assessed. We found few professional guidelines specific for the assessment of work endurance. Both somatic and mental diseases may cause limited work endurance. Methods to

assess work endurance vary, objective methods rating as most suitable. Almost half of the countries report controversies on the assessment of work endurance. CONCLUSIONS: Work endurance is recognised and assessed as an aspect of work disability assessment in Europe. However, controversies exist and evidence based guidelines, including reliable and valid methods to assess work endurance, are lacking

**Glambek M, Skogstad A, and Einarsen S. Workplace bullying, the development of job insecurity and the role of laissez-faire leadership: a two-wave moderated mediation study. *Work and Stress*. 2018; 32(3):297-312.**

<https://doi.org/10.1080/02678373.2018.1427815>

**Hampshaw S, Cooke J, and Mott L. What is a research derived actionable tool, and what factors should be considered in their development? A Delphi study. *BMC Health Services Research*. 2018; 18(1):740.**

<https://doi.org/10.1186/s12913-018-3551-6> [open access]

Abstract: BACKGROUND: Research findings should be disseminated appropriately to generate maximum impact. The development of research derived 'actionable' tools (RDAT) as research outputs may contribute to impact in health services and health systems research. However there is little agreement on what is meant by actionable tool or what can make them useful. We set out to develop a consensus definition of what is meant by a RDAT and to identify characteristics of a RDAT that would support its use across the research-practice boundary. METHODS: A modified Delphi method was used with a panel of 33 experts comprising of researchers, research funders, policy makers and practitioners. Three rounds were administered including an initial workshop, followed by two online surveys comprising of Likert scales supplemented with open-ended questions. Consensus was defined at 75% agreement. RESULTS: Consensus was reached for the definition and characteristics of RDATs, and on considerations that might maximize their use. The panel also agreed how RDATs could become integral to primary research methods, conduct and reporting. A typology of RDATs did not reach consensus. CONCLUSIONS: A group of experts agreed a definition and characteristics of RDATs that are complementary to peer reviewed publications. The importance of end users shaping such tools was seen as of paramount importance. The findings have implications for research funders to resource such outputs in funding calls. The research community might consider developing and applying skills to coproduce RDATs with end users as part of the research process. Further research is needed on tracking the impact of RDATs, and defining a typology with a range of end-users

**Jay K, Thorsen SV, Sundstrup E, Aiguade R, Casana J, Calatayud J, and Andersen LL. Fear avoidance beliefs and risk of long-term sickness absence: prospective cohort study among workers with musculoskeletal pain. *Pain Research and Treatment*. 2018; 2018:8347120.**

<https://doi.org/10.1155/2018/8347120> [open access]

**Abstract: Background and Objective:** Musculoskeletal pain is common in the population. Negative beliefs about musculoskeletal pain and physical activity may lead to avoidance behavior resulting in absence from work. The present study investigates the influence of fear avoidance beliefs on long-term sickness absence. **Methods:** Workers of the general working population with musculoskeletal pain (low back, neck/shoulder, and/or arm/hand pain; n = 8319) from the Danish Work Environment Cohort Study were included. Long-term sickness absence data were obtained from the Danish Register for Evaluation and Marginalization (DREAM). Time-to-event analyses (cox regression) controlled for various confounders estimated the association between fear avoidance beliefs (very low, low, moderate [reference category], high, and very high) at baseline and long-term sickness absence (LTSA;  $\geq 6$  consecutive weeks) during a 2-year follow-up. **Results:** During the 2-year follow-up, 10.2% of the workers experienced long-term sickness absence. In the fully adjusted model, very high-level fear avoidance increased the risk of LTSA with hazard ratio (HR) of 1.48 (95% CI 1.15-1.90). Similar results were seen analyses stratified for occupational physical activity, i.e., sedentary workers (HR 1.72 (95% CI 1.04-2.83)) and physically active workers (HR 1.48 (95% CI 1.10-2.01)). **Conclusion:** A very high level of fear avoidance is a risk factor for long-term sickness absence among workers with musculoskeletal pain regardless of the level of occupational physical activity. Future interventions should target fear avoidance beliefs through information and campaigns about the benefits of staying active when having musculoskeletal pain

**LaMontagne AD, Shann C, and Martin A. Developing an integrated approach to workplace mental health: a hypothetical conversation with a small business owner. *Annals of Work Exposures and Health*. 2018; 62(suppl\_1):S93-S100.**

**<https://doi.org/10.1093/annweh/wxy039>**

**Abstract:** An integrated approach to workplace mental health encompasses three main areas of activity: (i) protecting mental health by reducing work-related and other risk factors for mental health problems, (ii) promoting mental health by developing the positive aspects of work as well as worker strengths and positive capacities, and (iii) responding to mental health problems as they manifest at work regardless of cause (work-related or otherwise). This represents an effort to distil what is a complex issue warranting a correspondingly complex set of responses into information for action that is accessible and engaging to workplace stakeholders, and that enables workplaces to begin from varying starting points to build over time towards mature multicomponent workplace mental health programs. This article, based on a plenary presentation at the Understanding Small Enterprises 2017 international conference (25-27 October 2017, Denver), is presented in two parts. Part I is a concise summary of our integrated approach to workplace mental health. Part II presents a hypothetical conversation with a small business owner/operator who has yet to implement workplace mental health programs, but is considering doing so. In this

Conversation, representing an effort in knowledge translation, we attempt to convince the small business owner/operator to begin taking action

**Ma CC, Gu JK, Charles LE, Andrew ME, Dong RG, and Burchfiel CM. Work-related upper extremity musculoskeletal disorders in the United States: 2006, 2009, and 2014 National Health Interview Survey. Work. 2018; 60(4):623-634.**

**<https://doi.org/10.3233/WOR-182770>**

**Abstract:** BACKGROUND: The annual incidence rate of work-related upper extremity musculoskeletal disorders (WUEMSDs) is increasing in US workers according to the United States Bureau of Labor Statistics (BLS). However, the prevalence of WUEMSDs among US total workers has not been estimated. OBJECTIVE: We aimed to estimate the prevalence of WUEMSDs among US total workers and among each of major occupations and industries. METHODS: We analyzed data from the National Health Interview Survey Arthritis supplements (2006, 2009, and 2014) among 50,218 current workers (age  $\geq 18$  years) to estimate the 30-day prevalence of WUEMSDs and of WUEMSDs affecting work using the SAS-callable SUDAAN software. RESULTS: About 11.2 million workers reported WUEMSDs based on three surveys (2006, 2009, and 2014). The 30-day prevalence of WUEMSDs was 8.23% the prevalence of WUEMSDs affecting work was 1.24%. The Construction occupation and industry had the highest age- and sex-adjusted 30-day prevalence of WUEMSDs (10.98% for Construction occupation; 9.94% for Construction industry) and WUEMSDs affecting work (3.32% for Construction occupation; 2.31% Construction industry). CONCLUSIONS: Our results show that construction workers had the highest prevalence of both WUEMSDs and WUEMSDs affecting work. They may be a priority group for interventions to reduce upper extremity musculoskeletal disorders

**McAllister A and Leeder SR. Distrusting doctors' evidence: a qualitative study of disability income support policy makers in Australia and Ontario, Canada. Australian Health Review. 2018; 42(4):475-480.**

**<https://doi.org/10.1071/AH16092>**

**Phillips BN, Reyes A, Kriofske Mainella AM, Kesselmayr RF, and Jacobson JD. A needs driven model of workplace social effectiveness in adults with disabilities. Rehabilitation Counseling Bulletin. 2018; 62(1):30-42.**

**<https://doi.org/10.1177/0034355217747690>**

**Powell D and Seabury S. Medical care spending and labor market outcomes: evidence from workers' compensation reforms. American Economic Review. 2018; 108(10):2995-3027.**

**<https://doi.org/10.1257/aer.20150912> [open access]**

**Abstract:** Medical care represents an important component of workers' compensation benefits with the potential to improve health and post-injury labor

outcomes, but little is known about the relationship between medical care spending and the labor outcomes of injured workers. We exploit the 2003--2004 California workers' compensation reforms which reduced medical spending disproportionately for workers incurring low back injuries. We link administrative claims data to earnings records for injured workers and their uninjured coworkers. We find that workers with low back injuries experienced a 7.6 percent post-reform decline in medical care, and an 8.1 percent drop in post-injury earnings relative to other injured workers

**Sharwood LN, Mueller H, Ivers RQ, Vaikuntam B, Driscoll T, and Middleton JW. The epidemiology, cost, and occupational context of spinal injuries sustained while 'working for income' in NSW: a record-linkage study. International Journal of Environmental Research and Public Health. 2018; 15(10):E2121.**

**<https://doi.org/10.3390/ijerph15102121>**

Abstract: This study aimed to describe the epidemiological characteristics, the occupational context, and the cost of hospitalised work-related traumatic spinal injuries, across New South Wales, Australia. A record-linkage study of hospitalised cases of work-related spinal injury (ICD10-AM code U73.0 or workers compensation) was conducted. Study period 2013(-)2016. Eight hundred and twenty-four individuals sustained work-related spinal injuries; 86.2% of whom were males and had a mean age of 46.6 years. Falls led to 50% of the injuries; predominantly falls from building/structures, ladders or between levels. Falls occurred predominantly in the construction industry (78%). Transport crashes caused 31% of injuries and 24% in heavy vehicles. Half of all the transport injuries occurred 'off road'. The external cause was coded as 'non-specific work activity' in 44.5% of cases; missing in 11.5%. Acute care bed days numbered at 13,302; total cost \$19,500,000. High numbers of work-related spinal injuries occurred in the construction industry; particularly falling from a height. Off-road transport-related injuries were significant and likely unaddressed by 'on-road' prevention policies. Medical record documentation was insufficient in injury mechanism and context specificity. Workers in the construction industry or those using vehicles off-road were at high risk of spinal injury, suggesting inefficient systems approaches or ineffective prevention policies. Reducing the use of non-specific external cause codes in patients' medical records would improve the measurement of policy effectiveness

**Tuckey MR, Sonnentag S, and Bryan J. Are state mindfulness and state work engagement related during the workday? Work and Stress. 2018; 32(1):33-48.**

**<https://doi.org/10.1080/02678373.2017.1420707>**

**D'Urzo KA, Man KE, Bassett-Gunter RL, Latimer-Cheung AE, and Tomasone JR. Identifying "real-world" initiatives for knowledge translation tools: a case study of community-based physical activity programs for persons with physical disability in Canada. Translational Behavioral**

**Medicine. 2018; [epub ahead of print].**

**<https://doi.org/10.1093/tbm/iby088>**

Abstract: "Real-world" initiatives represent an important source of information for evidence-based practice; however, accessing information about initiatives is often challenging. Casebooks are an innovative knowledge translation (KT) tool for researchers, practitioners, and end-users to address "research-to-implementation gaps" through sharing "real-world" experiences. Several casebooks have been published; yet, they remain inconsistent in their methodological approach for identifying "real-world" initiatives. The purpose of this project is to describe and apply systematic scoping study methods for the identification of "real-world" initiatives relevant for the development of KT tools. Specifically, systematic scoping study methods were developed to identify community-based physical activity (PA) programs for persons with physical disabilities across Canada. To identify PA programs, a search strategy was developed and included five distinct search approaches: (i) peer-reviewed literature databases, (ii) grey literature databases, (iii) customized Google search engines, (iv) targeted websites, and (v) consultation with content experts. Title screening and hand searching identified 478 potentially relevant PA programs. Full record review identified 72 PA programs that met KT tool criteria. The most comprehensive search approach was targeted websites, which identified 25 (35%) unique PA programs, followed by content experts (n = 12; 17%). Only four (5.6%) unique PA programs were identified via custom Google searching. No PA programs were uniquely identified through peer- or grey literature database searches. This study describes and applies a systematic scoping study methodology that serves as a basis for identifying and selecting "real-world" initiatives that are central to the development of evidence-based KT tools

**Zajacova A and Montez JK. Explaining the increasing disability prevalence among mid-life US adults, 2002 to 2016. Social Science & Medicine. 2018; 211:1-8.**

**<https://doi.org/10.1016/j.socscimed.2018.05.041>**

Abstract: Several recent studies have documented an alarming upward trend in disability and functional limitations among US adults. In this study, we draw on the sociomedical Disablement Process framework to produce up-to-date estimates of the trends and identify key social and medical precursors of the trends. Using data on US adults aged 45-64 in the 2002-2016 National Health Interview Surveys, we estimate parametric and semiparametric models of disability and functional limitations as a function of interview time. We also determine the impact of socioeconomic resources, health behaviors, and health conditions on the trends. Our results show increasing prevalence of disability and functional limitations. These trends reflect the net result of complex countervailing forces, some associated with increases in functioning problems (unfavorable trends in economic well-being, especially income, and psychological distress) while other factors have suppressed the growth of functioning problems (favorable trends in educational attainment and some health behaviors, such as



smoking and alcohol use). The results underscore that disability prevention must expand beyond medical interventions to include fundamental social factors and be focused on preventing or delaying the onset of chronic health problems and functional limitations

\*IWH authored publications.