

IWH Research Alert
May 25, 2018

Missed an issue? Catch up on previous *Research Alerts* available on the IWH website <https://www.iwh.on.ca/journal-articles/research-alerts>

Research Alert is a service provided to you by the Institute for Work & Health (IWH) to help you keep abreast of recent literature in the areas of occupational health and safety, epidemiology, public health and others within the IWH mandate. Please note that these articles have not been reviewed by Institute scientists to assess the quality of the studies. *Research Alerts* should not be considered an endorsement of the findings. Readers are cautioned not to act on the results of single studies, but rather to seek bodies of evidence. It should also be noted that the Institute for Work & Health cannot provide full-text of articles listed in *Research Alerts* to individuals outside of the organization, as this violates copyright legislation.

***Russell E and Kosny A. Communication and collaboration among return-to-work stakeholders. *Disability & Rehabilitation*. 2018; [epub ahead of print].**

<http://dx.doi.org/10.1080/09638288.2018.1472815>

Abstract: PURPOSE: Workers who are injured or become ill on the job are best able to return-to-work when stakeholders involved in their case collaborate and communicate. This study examined health care providers' and case managers' engagement in rehabilitation and return-to-work following workplace injury or illness. METHOD: In-depth interviews were conducted with 97 health care providers and 34 case managers in four Canadian provinces about their experiences facilitating rehabilitation and return-to-work, and interacting with system stakeholders. RESULTS: A qualitative thematic content analysis demonstrated two key findings. Firstly, stakeholders were challenged to collaborate as a result of: barriers to interdisciplinary and cross-professional communication; philosophical differences about the timing and appropriateness of return-to-work; and confusion among health care providers about the workers' compensation system. Secondly, these challenges adversely affected the co-ordination of patient care, and consequentially, injured workers often became information conduits, and effective and timely treatment and return-to-work was sometimes negatively impacted. CONCLUSIONS: Communication challenges between health care providers and case managers may negatively impact patient care and alienate treating health care providers. Discussion about role clarification, the appropriateness of early return-to-work, how paperwork shapes health care providers' role expectations, and strengthened inter-professional communication are considered. Implications for Rehabilitation Administrative and conceptual barriers in workers' compensation systems challenge collaboration

and communication between health care providers and case managers. Injured workers may become conduits of incorrect information, resulting in adversarial relationships, overturned health care providers' recommendations, and their disengagement from rehabilitation and return-to-work. Stakeholders should clarify the role of health care providers during rehabilitation and return-to-work and the appropriateness of early return-to-work to mitigate recurring challenges. Communication procedures between health care specialists may disrupt these challenges, increasing the likelihood of timely and effective rehabilitation and return-to-work

***Tait CA, L'Abbe MR, Smith PM, and Rosella LC. The association between food insecurity and incident type 2 diabetes in Canada: A population-based cohort study. PLoS ONE. 2018; 13(5):e0195962.**

<http://dx.doi.org/10.1371/journal.pone.0195962> [open access]

Abstract: BACKGROUND: A pervasive and persistent finding is the health disadvantage experienced by those in food insecure households. While clear associations have been identified between food insecurity and diabetes risk factors, less is known about the relationship between food insecurity and incident type 2 diabetes. The objective of this study is to investigate the association between household food insecurity and the future development of type 2 diabetes. METHODS: We used data from Ontario adult respondents to the 2004 Canadian Community Health Survey, linked to health administrative data (n = 4,739). Food insecurity was assessed with the Household Food Security Survey Module and incident type 2 diabetes cases were identified by the Ontario Diabetes Database. Multivariable adjusted Cox proportional hazards models were used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for type 2 diabetes as a function of food insecurity. RESULTS: Canadians in food insecure households had more than 2 times the risk of developing type 2 diabetes compared to those in food secure households [HR = 2.40, 95% CI = 1.17-4.94]. Additional adjustment for BMI attenuated the association between food insecurity and type 2 diabetes [HR = 2.08, 95% CI = 0.99, 4.36]. CONCLUSIONS: Our findings indicate that food insecurity is independently associated with increased diabetes risk, even after adjustment for a broad set of measured confounders. Examining diabetes risk from a broader perspective, including a comprehensive understanding of socioeconomic and biological pathways is paramount for informing policies and interventions aimed at mitigating the future burden of type 2 diabetes

Bajwa U, Knorr L, Di Ruggiero E, Gastaldo D, and Zendel A. Towards an understanding of workers' experiences in the global gig economy. 2018; Toronto, University of Toronto.

https://www.glomhi.org/uploads/7/4/4/8/74483301/workers_in_the_global_gig_economy.pdf

Cho SS, Ju YS, Paek D, Kim H, and Jung-Choi K. The combined effect of long working hours and low job control on self-rated health: an interaction analysis. Journal of Occupational & Environmental Medicine. 2018; 60(5):475-480.

<http://dx.doi.org/10.1097/JOM.0000000000001241> [open access]

Abstract: OBJECTIVES: The aim of this study was to investigate the combined effects of long working hours and low job control on self-rated health. METHODS: We analyzed employees' data obtained from the third Korean Working Conditions Survey (KWCS). Multiple survey logistic analysis and postestimation commands were employed to estimate the relative excess risk due to interaction (RERI). RESULTS: The odds ratio (OR) for poor self-rated health was 1.24 [95% confidence interval (95% CI): 1.13 to 1.35] for long working hours, 1.04 (95% CI: 0.97 to 1.13) for low job control, and 1.47 (95% CI: 1.33 to 1.62) for both long working hours and low job control. The RERI was 0.18 (95% CI: 0.02 to 0.34). CONCLUSION: These results imply that low job control may increase the negative influence of long working hours on self-rated health

Coenen P, Huysmans MA, Holtermann A, Krause N, van MW, Straker LM, and van der Beek AJ. Do highly physically active workers die early? A systematic review with meta-analysis of data from 193 696 participants. British Journal of Sports Medicine. 2018; [epub ahead of print].

<http://bism.bmj.com/content/early/2018/04/17/bjsports-2017-098540>

Abstract: OBJECTIVE: Recent evidence suggests the existence of a physical activity paradox, with beneficial health outcomes associated with leisure time physical activity, but detrimental health outcomes for those engaging in high level occupational physical activity. This is the first quantitative systematic review of evidence regarding the association between occupational physical activity and all-cause mortality. DESIGN: Systematic review with meta-analysis. DATA SOURCE: A literature search was performed in electronic databases PubMed, Embase, CINAHL, PsycINFO and Cochrane. ELIGIBILITY CRITERIA FOR SELECTING STUDIES: We screened for peer reviewed articles from prospective studies assessing the association of occupational physical activity with all-cause mortality. A meta-analysis assessed the association of high (compared with low) level occupational physical activity with all-cause mortality, estimating pooled hazard ratios (HR) (with 95% CI). RESULTS: 2490 unique articles were screened and 33 (from 26 studies) were included. Data from 17 studies (with 193 696 participants) were used in a meta-analysis, showing that men with high level occupational physical activity had an 18% increased risk of early mortality compared with those engaging in low level occupational physical activity (HR 1.18, 95% CI 1.05 to 1.34). No such association was observed among women, for whom instead a tendency for an inverse association was found (HR 0.90, 95% CI 0.80 to 1.01). CONCLUSIONS: The results of this review indicate detrimental health consequences associated with high level occupational physical activity in men, even when adjusting for relevant factors (such as leisure

time physical activity). These findings suggest that research and physical activity guidelines may differentiate between occupational and leisure time physical activity

Gibbs BB, Hergenroeder AL, Perdomo SJ, Kowalsky RJ, Delitto A, and Jakicic JM. Reducing sedentary behaviour to decrease chronic low back pain: the stand back randomised trial. Occupational & Environmental Medicine. 2018; 75(5):321-327.

<http://dx.doi.org/10.1136/oemed-2017-104732>

Abstract: OBJECTIVE: The Stand Back study evaluated the feasibility and effects of a multicomponent intervention targeting reduced prolonged sitting and pain self-management in desk workers with chronic low back pain (LBP). METHODS: This randomised controlled trial recruited 27 individuals with chronic LBP, Oswestry Disability Index (ODI) >10% and desk jobs (sitting \geq 20 hours/week). Participants were randomised within strata of ODI (>10%-<20%, \geq 20%) to receive bimonthly behavioural counselling (in-person and telephone), a sit-stand desk attachment, a wrist-worn activity-prompting device and cognitive behavioural therapy for LBP self-management or control. Self-reported work sitting time, visual analogue scales (VAS) for LBP and the ODI were assessed by monthly, online questionnaires and compared across intervention groups using linear mixed models. RESULTS: Baseline mean (SD) age was 52 (11) years, 78% were women, and ODI was 24.1 (10.5)%. Across the 6-month follow-up in models adjusted for baseline value, work sitting time was 1.5 hour/day ($P<0.001$) lower comparing intervention to controls. Also across follow-up, ODI was on average 8 points lower in intervention versus control ($P=0.001$). At 6 months, the relative decrease in ODI from baseline was 50% in intervention and 14% in control ($P=0.042$). LBP from VAS was not significantly reduced in intervention versus control, though small-to-moderate effect sizes favouring the intervention were observed (Cohen's d ranged from 0.22 to 0.42). CONCLUSION: An intervention coupling behavioural counselling targeting reduced sedentary behaviour and pain self-management is a translatable treatment strategy that shows promise for treating chronic LBP in desk-bound employees. TRIAL REGISTRATION NUMBER: NCT0224687; Pre-results

Hanson H, Hart RI, Thompson B, McDonagh JE, Tattersall R, Jordan A, and Foster HE. Experiences of employment among young people with juvenile idiopathic arthritis: a qualitative study. Disability & Rehabilitation. 2018; 40(16):1921-1928.

<http://dx.doi.org/10.1080/0968288.2017.1323018>

Abstract: PURPOSE: This study explored expectations and experiences of employment among young people with juvenile idiopathic arthritis and the role of health professionals in promoting positive employment outcomes. METHODS: Semistructured interviews ($n = 13$) and three focus groups ($n = 9$, $n = 4$, $n = 3$) were conducted with young people (16-25 y) and adults (26-31 y) with juvenile



Institute
for Work &
Health

Research Excellence
Advancing Employee
Health

idiopathic arthritis and semistructured interviews (n = 9) were conducted with health professionals. Transcripts were analyzed thematically. **RESULTS:** Young people with juvenile idiopathic arthritis have concerns about employers' attitudes toward employees with long-term health conditions and lack knowledge of antidiscrimination legislation. Young people not in education, employment or training identify arthritis as a key barrier. Challenges associated with arthritis (e.g., pain, psychological distress) may not be visible to employers. Decisions about disclosing arthritis are challenging and cause anxiety. Young people associate good disease management and access to flexible and convenient care with their capacity to succeed in employment. Psychosocial and vocational interventions have benefited some young people but are not routinely available. **CONCLUSIONS:** Low expectations of employers may affect young people's decisions about disclosure and seeking appropriate support in the work place. Health professionals can equip young people with knowledge and skills to negotiate appropriate support, through signposting to antidiscrimination information and offering practice of transferable skills such as disclosure in consultations. Implications for rehabilitation Young people with juvenile idiopathic arthritis encounter challenges with regard to employment; many lack the knowledge and skills to negotiate appropriate support from employers. Rehabilitation professionals could play a more substantial role in equipping them with relevant knowledge and skills by signposting to antidiscrimination information and nurturing transferable skills, such as disclosure, in consultations. Potentially helpful interventions, such as group activities or assessment by a psychologist, have benefited some but need more evaluative scrutiny with respect to employment outcomes

Jacobson L and Long A. The health and social dimensions of adult skills in Canada: findings from the Programme for the International Assessment of Adult Competencies (PIAAC). 2018; Toronto: Council of Ministers of Education, Canada / Ottawa: Public Health Agency of Canada.
<https://www.cmec.ca/Publications/Lists/Publications/Attachments/378/PIAA-C-2012-Health-and-Social-Dimensions-Canada-EN.pdf>

Landstad BJ and Ahrberg Y. Conceptualizing the driving forces for successful rehabilitation back to work. Disability & Rehabilitation. 2018; 40(15):1781-1790.

<http://dx.doi.org/10.1080/09638288.2017.1312569>

Abstract: **BACKGROUND:** An earlier study states that the terms of desire, longing, and vanity carry with them ideas, emotions, and values that influence how individuals perceive themselves and their rehabilitation process. Our aim was (1) to use concept analysis to explore the meaning of the terms desire, longing, and vanity and (2) to investigate the potential role of these concepts in successful rehabilitation back to work. **METHODS:** To achieve these two objectives, we used a model of concept analysis. The final step in the model is to

define empirical references, for example, articles within the scientific literature, to determine the existence of a concept in a given situation. RESULTS: The concept analysis resulted in 15 new searchable terms. All of these were accepted in the thesaurus system for the databases we used. We identified 59 scientific articles that were deemed relevant to the purposes of the study. Of these, only 20 was about emotions as driving forces in a rehabilitation process back to work. CONCLUSION: The conclusion of the study is that the concepts of desire, longing, and vanity encompassed ideas, emotions, and values that influence how individuals perceived themselves and their situations. How individuals talk about and understand rehabilitation will undoubtedly play a role in how they respond to interventions, and thus, the success of the rehabilitation process back to work. Implications for rehabilitation Emotional energy often drives behavior and can provide significant motivation that potentially can mobilize vocational rehabilitation. The concepts of desire, longing and vanity encompass ideas, emotions, and values that influence individuals' self-perception and their view of their situation. To engage people in discussions on what they long for and desire could be a new way to connect with a person in a rehabilitation situation. It can be less provoking to talk about what a person desires or longs for than to ask them what they want or are motivated for. Feelings of meaningfulness are a basic driving force and a contributing factor in how health is experienced. By affirming the desire to do activities that are liked, this in turn generates motivation to be engaged in other activities. Individual confidence is generated through the experience of mastering a skill and this in turn can underpin a desire to return to work after long-term sick leave. Earlier experience of success can be an inspiration and create expectations for a forthcoming working-role. Emotions relating to work such as pride can generate motivation in a rehabilitation process. Vanity and the possibility of being "ashamed" in a certain situation can be an emotional driving force to re-establish one's self

Nielsen K, Yarker J, Munir F, and Bultmann U. IGLOO: an integrated framework for sustainable return to work in workers with common mental disorders. *Work and Stress*. 2018; [epub ahead of print].

<http://dx.doi.org/10.1080/02678373.2018.1438536> [open access]

Abstract: Current research on return to work (RTW) for employees with common mental disorders suffers from two limitations. First, research mostly focuses on the influence of resources during the absence period ignoring the resources which may facilitate sustainable RTW, i.e. employees continuing to work and thrive at work post-return. Second, research tends to view the work and non-work domains separately and fails to consider the interaction of resources at the individual, group, leader and organisational levels, once back at work. In the present position paper, we present an integrated framework and a preliminary definition of sustainable RTW. Based on current occupational health psychology theory and existing research on RTW, we develop ten propositions for the

resources in and outside work, which may promote sustainable RTW. In addition to the individual, group, leader, and organisational levels, we also argue for the importance of the overarching context, i.e. the societal context and the culture and legislation that may promote sustainable RTW. Our framework raises new questions that need to be addressed to enhance our understanding of how key stakeholders can support employees with common mental health disorders staying and thriving at work.

Pensa MA, Galusha DH, and Cantley LF. Patterns of opioid prescribing and predictors of chronic opioid use in an industrial cohort, 2003 to 2013.

Journal of Occupational & Environmental Medicine. 2018; 60(5):457-461.

<http://dx.doi.org/10.1097/JOM.0000000000001231>

Abstract: OBJECTIVE: To appreciate the impact of the opioid epidemic in workers, we described opioid prescription patterns in a US industrial cohort over a 10-year period and assessed predictors of chronic prescription. METHODS: A multiyear (2003 to 2013) cross-sectional analysis of employer-sponsored health care claims for enrolled workers (N: 21,357 to 44,769) was performed.

RESULTS: The proportion of workers prescribed opioids nearly doubled in the 10-year period. The strongest predictor of chronic opioid prescribing was year, with an increase in prescriptions each year from 2003 to 2013 (odds ratio = 2.90, 95% confidence interval: 2.41 to 3.48). Additional predictors included older age, white race, hourly wage, low back pain, and osteoarthritis. CONCLUSIONS: Opioid prescribing for industrial workers substantially increased from 2003 to 2013. Occupational health professionals should be aware of the potential for chronic opioid use among workers to assess job safety and appropriate treatment of work-related injuries

Sjobbema C, van der Mei S, Cornelius B, van der Klink J, and Brouwer S. Exploring participatory behaviour of disability benefit claimants from an insurance physician's perspective. Disability & Rehabilitation. 2018; 40(16):1943-1952.

<http://dx.doi.org/10.1080/09638288.2017.1323024>

Abstract: PURPOSE: In the Dutch social security system, insurance physicians (IPs) assess participatory behaviour as part of the overall disability claim assessment. This study aims to explore the views and opinions of IPs regarding participatory behaviour as well as factors related to inadequate participatory behaviour, and to incorporate these factors in the International Classification of Functioning, Disability and Health (ICF) biopsychosocial framework. METHOD: This qualitative study collected data by means of open-ended questions in 10 meetings of local peer review groups (PRGs) which included a total of 78 IPs of the Dutch Social Security Institute. In addition, a concluding discussion meeting with 8 IPs was organized. RESULTS: After qualitative data analyses, four major themes emerged: (1) participation as an outcome, (2) efforts of disability benefit claimants in the process of participatory behaviour, (3) beliefs of disability benefit

claimants concerning participation, and (4) recovery behaviour. Identified factors of inadequate participatory behaviour covered all ICF domains, including activities, environmental, and personal factors, next to factors related to health condition and body functions or structures. Outcomes of the discussion meeting indicated the impossibility of formulating general applicable criteria for quantifying and qualifying participatory behaviour. CONCLUSIONS: Views of IPs on disability benefit claimants' (in)adequate participatory behaviour reflect a broad biopsychosocial perspective. IPs adopt a nuanced tailor-made approach during assessment of individual disability benefit claimants' participatory behaviour and related expected activities aimed at recovery of health and RTW. Implications for Rehabilitation Within a biopsychosocial perspective, it is not possible to formulate general criteria for the assessment of participatory behaviour for each unique case. Individual disability benefit claimant characteristics and circumstances are taken into account. To optimize the return-to-work (RTW) process, insurance physicians (IPs) assess participatory behaviour according to the International Classification of Functioning, Disability and Health, including medical, personal, and environmental factors. Some aspects within the concept of participatory behaviour extend beyond the boundaries of the domain where IPs operate because opinions in society on personal and societal responsibility influence participatory behaviour

Sorensen G, Sparer E, Williams JAR, Gundersen D, Boden LI, Dennerlein JT, Hashimoto D, Katz JN, McLellan DL, Okechukwu CA, Pronk NP, Revette A, and Wagner GR. Measuring best practices for workplace safety, health, and well-being: the workplace integrated safety and health assessment. Journal of Occupational & Environmental Medicine. 2018; 60(5):430-439. <http://dx.doi.org/10.1097/JOM.0000000000001286>

Abstract: OBJECTIVE: To present a measure of effective workplace organizational policies, programs, and practices that focuses on working conditions and organizational facilitators of worker safety, health and well-being: the workplace integrated safety and health (WISH) assessment. METHODS: Development of this assessment used an iterative process involving a modified Delphi method, extensive literature reviews, and systematic cognitive testing. RESULTS: The assessment measures six core constructs identified as central to best practices for protecting and promoting worker safety, health and well-being: leadership commitment; participation; policies, programs, and practices that foster supportive working conditions; comprehensive and collaborative strategies; adherence to federal and state regulations and ethical norms; and data-driven change. CONCLUSIONS: The WISH Assessment holds promise as a tool that may inform organizational priority setting and guide research around causal pathways influencing implementation and outcomes related to these approaches

Jennifer S, Purewal BP, Macpherson A, and Pike I. Metrics to assess injury prevention programs for young workers in high-risk occupations: a

scoping review of the literature. Health Promotion and Chronic Disease Prevention in Canada. 2018; 38(5):191-199.

<http://dx.doi.org/10.24095/hpcdp.38.5.01>

Abstract: INTRODUCTION: Despite legal protections for young workers in Canada, youth aged 15-24 are at high risk of traumatic occupational injury. While many injury prevention initiatives targeting young workers exist, the challenge faced by youth advocates and employers is deciding what aspect(s) of prevention will be the most effective focus for their efforts. A review of the academic and grey literatures was undertaken to compile the metrics-both the indicators being evaluated and the methods of measurement-commonly used to assess injury prevention programs for young workers. Metrics are standards of measurement through which efficiency, performance, progress, or quality of a plan, process, or product can be assessed. METHODS: A PICO framework was used to develop search terms. Medline, PubMed, OVID, EMBASE, CCOHS, PsychINFO, CINAHL, NIOSHTIC, Google Scholar and the grey literature were searched for articles in English, published between 1975-2015. Two independent reviewers screened the resulting list and categorized the metrics in three domains of injury prevention: Education, Environment and Enforcement. RESULTS: Of 174 acquired articles meeting the inclusion criteria, 21 both described and assessed an intervention. Half were educational in nature (N=11). Commonly assessed metrics included: knowledge, perceptions, self-reported behaviours or intentions, hazardous exposures, injury claims, and injury counts. One study outlined a method for developing metrics to predict injury rates. CONCLUSION: Metrics specific to the evaluation of young worker injury prevention programs are needed, as current metrics are insufficient to predict reduced injuries following program implementation. One study, which the review brought to light, could be an appropriate model for future research to develop valid leading metrics specific to young workers, and then apply these metrics to injury prevention programs for youth

Walasa WM, Carey RN, Si S, Fritschi L, Heyworth JS, Fernandez RC, and Boyle T. Association between shiftwork and the risk of colorectal cancer in females: a population-based case-control study. Occupational & Environmental Medicine. 2018; 75(5):344-350.

<http://dx.doi.org/10.1136/oemed-2017-104657>

Abstract: OBJECTIVE: Research indicates that shiftwork may be associated with increased risks of adverse health outcomes, including some cancers. However, the evidence of an association between shiftwork and colorectal cancer risk is limited and inconclusive. Further, while several possible pathways through which shiftwork might result in cancer have been proposed, few studies have taken these factors into account. We investigated the association between two types of shiftwork (graveyard shiftwork and early-morning shiftwork) and six mechanistic shiftwork variables (including light at night and phase shift) and the risk of colorectal cancer among females in an Australian population-based case-control

study. Graveyard shiftwork was the primary exposure of interest. **METHODS:** Participants (350 cases and 410 controls) completed a lifetime occupational history, and exposure to each of the eight shiftwork variables was assigned to participants through a job exposure matrix. We used logistic regression to calculate odds ratios (OR) and corresponding 95% confidence intervals (CI) for the association between different shiftwork variables and the risk of colorectal cancer, adjusting for potential demographic, lifestyle and medical confounders. **RESULTS:** Working in an occupation involving long-term exposure (>7.5 years) to graveyard shiftwork was not associated with colorectal cancer risk (adjusted OR 0.95, 95% CI 0.57 to 1.58). Similarly, no increased risks of colorectal cancer were seen for any of the other seven shiftwork variables examined. **CONCLUSIONS:** No evidence of an increased risk of colorectal cancer among females who had worked in occupations involving shiftwork was observed in this study.

* IWH-authored publications