

IWH Research Alert
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***Dobson KG, Vigod SN, Mustard C, and Smith PM. Major depressive episodes and employment earnings trajectories over the following decade among working-aged Canadian men and women. *Journal of Affective Disorders*. 2021; 285:37-46.**

<https://doi.org/10.1016/j.jad.2021.02.019>

Abstract: OBJECTIVE: Quantify the association between experiencing a major depressive episode (MDE) and employment earnings over the following decade among working-aged Canadian men and women. METHODS: Ten national Canadian Community Health Survey (CCHS 2003-2014) cycles were linked to administrative tax records (1997-2016) for individuals 18-54 years old with information on past year MDE defined by the Composite International Diagnostic Interview Short Form (n=85,155) measured at baseline. Subsequent earnings were measured annually two to ten years post-MDE. MDE cases were matched with adult controls without MDE using 1:1 greedy nearest-neighbour without replacement propensity score matching for women and men. RESULTS: Using random-effects longitudinal modelling, among women (n=6,974) in the matched cohort (average initial earnings ~\$52,119/annum, 2016 Canadian real dollars), experiencing an MDE



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was associated with average earnings of \$4,473 less in the year the MDE was reported (95%CI=-\$3,215,-\$5,731) and an additional \$363 less/year over the following decade (95%CI=-\$132,-\$594). Among men (n=3,620, average initial earnings ~\$76,110/annum), an MDE was associated with an initial reduction in earnings of \$5,023 (95%CI=-\$2,453,-\$7,593) followed by an earnings decline starting with \$730/year, increasing to ~\$1,810/year at ten years post-MDE. LIMITATIONS: Residual confounding by measures excluded from the propensity score. Only one MDE measurement limited exploring earnings trajectories of those with multiple episodes. CONCLUSIONS: Consistently lower earnings were seen for ten years after experiencing one MDE. The magnitude of earnings difference immediately after the MDE was similar for men and women. Findings reveal the critical period surrounding an MDE where effective clinical treatment and labor policy may help buffer longstanding earnings loss

***Gilbert-Ouimet M, Glazier RH, Brisson C, Mustard C, and Smith PM. Job strain, overweight, and diabetes: a 13-year prospective study among 12,896 men and women in Ontario. Psychosomatic Medicine. 2021; 83(2):187-195.**

<https://doi.org/10.1097/PSY.0000000000000898>

Abstract: OBJECTIVE: The American Diabetes Association recently called for research on social and environmental determinants of diabetes to intensify primary prevention. Recent epidemiological evidence suggests that frequent and modifiable psychosocial stressors at work might contribute to the development of diabetes, but more prospective studies are needed. We evaluated the relationship between job strain and diabetes incidence in 12,896 workers followed up over a 13-year period in Ontario, Canada. We also examined the modifying effect of body mass index in this relationship. METHODS: Data from Ontario respondents (35-74 years of age) to the 2000-2001, 2002, and 2003 cycles of the Canadian Community Health Survey were prospectively linked to the Ontario Health Insurance Plan database for physician services and the Canadian Institute for Health Information Discharge Abstract Database for hospital admissions. The sample consisted of actively employed participants with no previous diagnosis for diabetes. Cox proportional hazard regression models were performed to evaluate the relationship between job strain, obesity, and the incidence of diabetes. RESULTS:



Overall, job strain was not associated with the incidence of diabetes (hazard ratio [HR] = 1.05; 95% confidence interval [CI] = 0.83-1.34). Among women, job strain was associated with an elevated risk of diabetes, although this finding did not reach statistical significance (HR = 1.36; 95% CI = 0.94-1.96). Among men, no association was observed (HR = 0.89; 95% CI = 0.65-1.22). Also, job strain increased the risk of diabetes among women with obesity (HR = 1.88; 95% CI = 1.14-3.08), whereas these stressors reduced the risk among men with obesity (HR = 0.58; 95% CI = 0.36-0.95). **CONCLUSIONS:** The current study suggests that lowering job strain might be an effective strategy for preventing diabetes among women, especially the high-risk group comprising women with obesity

Arbin K, Frostenson M, Helin S, and Borglund T. Explaining workers' resistance against a health and safety programme: an understanding based on hierarchical and social accountability. Safety Science. 2021; 136:105131.

<https://doi.org/10.1016/j.ssci.2020.105131>

Berhan E. Prevalence of occupational accident; and injuries and their associated factors in iron, steel and metal manufacturing industries in Addis Ababa. Cogent Engineering. 2020; 7(1):1723211.

<https://doi.org/10.1080/23311916.2020.1723211> [open access]

Abstract: Abstract The purpose of the research is to investigate the prevalence of workplace accident/injuries (policymakers) and the associated factor in Iron, Steel and Metal Manufacturing Industries (ISMMI) in Addis Ababa, Ethiopia. To achieve this objective, primary data using a questionnaire was collected from 446 production workers in 89 ISMMI. The major findings of the study showed that both availability and cultures of Personal Protective Equipment (PPE) usage are found to be lower. The prevalence of workplace Aol in the metal manufacturing industries in Addis Ababa is found to be relatively very high as compared to previous studies. Employees have mostly faced Aol such as fracture, dislocation, abrasion, suffocation, burn and piercing in their workplace. Female workers are more likely to face cut Aol than their male counterparts. Moreover, employees who are working in medium and large size industries have more likely faced exhaustion, dislocation, sprain, fracture, and burn



Aol than employees who are working in small size industries. The study concluded that workplace accident in ISMMI in Addis Ababa is very high and mostly caused by the absence of and poor culture on PPE usage that requires awareness creation and interventions from policymakers to improve the working environment

Brusaca LA, Barbieri DF, Beltrame T, Milan-Mattos JC, Catai AM, and Oliveira AB. Cardiac autonomic responses to different tasks in office workers with access to a sit-stand table: a study in real work setting. Ergonomics. 2021; 64(3):354-365.

<https://doi.org/10.1080/00140139.2020.1830184>

Abstract: The aim of this study was to characterise the cardiac autonomic modulation of different office tasks performed by office workers with access to a sit-stand table. Heart rate variability (HRV) of 24 office workers was measured for two hours during three days in the last week of sit-stand table use. HRV indexes and the percentage of heart rate reserve (%HRR) were calculated during computer and non-computer work tasks while sitting or standing, non-computer tasks away from the work desk, and informal work breaks. All cardiac autonomic responses demonstrated a statistically significant interaction effect between the tasks (all $p < 0.05$) except for the logarithmically-transformed high frequency power (ln HF ms²); $p = 0.14$). Tasks performed while standing and away from the desk had higher sympathetic modulation; in addition, the observed higher %HRR demonstrated that these tasks were more physically demanding in comparison to other tasks. Practitioner Summary: Prior reports indicated benefits based on alternated body postures using sit-stand table. Nevertheless, the cardiac autonomic responses of different tasks performed by office workers are unknown. This cross-sectional study showed that different tasks stimulate the cardiac autonomic nervous system in different ways, which could bring positive effects to the cardiovascular system

Corp N, Mansell G, Stynes S, Wynne-Jones G, Morso, L, Hill JC, et al. Evidence-based treatment recommendations for neck and low back pain across Europe: a systematic review of guidelines. European Journal of Pain. 2021; 25(2):275-295.

<https://doi.org/10.1002/ejp.1679> [open access]

Abstract: BACKGROUND AND OBJECTIVE: This systematic review



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synthesized evidence from European neck and low back pain (NLBP) clinical practice guidelines (CPGs) to identify recommended treatment options for use across Europe. **DATABASES AND DATA TREATMENT:** Comprehensive searches of thirteen databases were conducted, from 1st January 2013 to 4th May 2020 to identify up-to-date evidence-based European CPGs for primary care management of NLBP, issued by professional bodies/organizations. Data extracted included; aim and target population, methods for development and implementation and treatment recommendations. The AGREE II checklist was used to critically appraise guidelines. Criteria were devised to summarize and synthesize the direction and strength of recommendations across guidelines. **RESULTS:** Seventeen CPGs (11 low back; 5 neck; 1 both) from eight European countries were identified, of which seven were high quality. For neck pain, there were consistent weak or moderate strength recommendations for: reassurance, advice and education, manual therapy, referral for exercise therapy/programme, oral analgesics and topical medications, plus psychological therapies or multidisciplinary treatment for specific subgroups. Notable recommendation differences between back and neck pain included, i) analgesics for neck pain (not for back pain); ii) options for back pain-specific subgroups-work-based interventions, return to work advice/programmes and surgical interventions (but not for neck pain) and iii) a greater strength of recommendations (generally moderate or strong) for back pain than those for neck pain. **CONCLUSIONS:** This review of European CPGs identified a range of mainly non-pharmacological recommended treatment options for NLBP that have broad consensus for use across Europe. **SIGNIFICANCE:** Consensus regarding evidence-based treatment recommendations for patients with neck and low back pain (NLBP) from recent European clinical practice guidelines identifies a wide range of predominantly non-pharmacological treatment options. This includes options potentially applicable to all patients with NLBP and those applicable to only specific patient subgroups. Future work within our Back-UP research team will transfer these evidence-based treatment options to an accessible clinician decision support tool for first contact clinicians



Ebrahimi K, Tajik R, Karami T, Rahimnejad S, and Arghavani F. Evaluation of occupational noise exposure and general health of workers in industrial sites: a case study. *Work*. 2021; 68(1):115-121.

<https://doi.org/10.3233/WOR-203362>

Abstract: **BACKGROUND:** Occupational noise exposure in workplaces is the most common detrimental factor that has the greatest impact on the health of people working there. **OBJECTIVE:** The aim of this study was to evaluate occupational noise exposure and its relation to the general health status in industrial workers in Sanandaj, Iran. **METHODS:** This cross-sectional study was conducted on the general health of 500 male workers in Sanandaj using the General Health Questionnaire (GHQ-28). Likewise, occupational noise exposure was measured based on sound pressure level (SPL) and dosimetry in the work and rest conditions of workers. **RESULTS:** The results showed poor general health status of workers, exceeded the daily working hours and also the standard range of sound. A significant correlation was found between general health and its dimensions with indicators of workplace sound pressure levels ($P < 0.05$). This means that with the increase in sound pressure level is worse general health status. **CONCLUSION:** It seems that the health of workers in these industries is an inappropriate process due to exposure to occupational noise exposure and poor conditions of the workplace. A high percentage of them will lose their health in case of non-implementation of prevention programs and health in the workplace in the future

Galea S and Vaughan R. Preparing the public health workforce for the post-COVID-19 era. *American Journal of Public Health*. 2021; 111(3):350-352.

<https://doi.org/10.2105/AJPH.2020.306110>

Hardonk S and Halldórsdóttir S. Work inclusion through supported employment? Perspectives of job counsellors in Iceland. *Scandinavian Journal of Disability Research*. 2021; 23(1):39-49.

<https://doi.org/10.16993/sjdr.767> [open access]

Abstract: Supported employment (SE) programmes are generally considered an effective measure to support disabled people in the



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labour market. While research about SE has mostly focused on quantitative measures, such as successful placement, scholars have argued for scrutinising the meaning behind programme implementation. To understand how SE contributes to work inclusion of disabled people, we studied how job counsellors view their support and how they give meaning to their own roles and the roles of clients and employers. Qualitative interviews were conducted with 10 job counsellors within the SE programme of the Icelandic public employment service. Analysis of interview data shows that while participants attached general importance to inclusion, their day-to-day approach to client-centred support, relations with employers, and follow-up support reflected a social integration rather than an inclusion perspective. The policy context in which job counsellors implement the programme appeared to play an important role in shaping their approach to support.

Heaton K, Mumbower R, and Childs G. Sleep and safety decision-making among truck drivers. *Workplace Health & Safety*. 2021; 69(3):134-140.

<https://doi.org/10.1177/2165079920950255>

Abstract: BACKGROUND: Restorative sleep is essential for the level of cognitive performance required of truckers to drive safely. The purpose of this qualitative descriptive study was to describe and explore sleep-related and safety decision-making among truck drivers. METHODS: Flyers and snowball sampling were used to recruit truck drivers into the study. Semi-structured interviews were conducted to determine personal and professional influences on sleep and safety decision-making and preferences for receiving health information. Thematic analysis was conducted to generate descriptions of participants' experiences. FINDINGS: The sample consisted of 10 White males with a mean of 22 years of truck-driving experience. Weather conditions and drowsiness were the most commonly described conditions that required sleep decision-making by the participants. Four themes impacting sleep- and safety-related decision-making emerged including sentinel events, evolving driver characteristics, relationships, and company-level factors. CONCLUSION/APPLICATION TO PRACTICE: Findings from this study suggest that there are both internal and external factors influencing sleep and safety decision-making among truck drivers.



Personal relationships with important others, such as family members, and professional relationships with company dispatchers were important influences among participants. During encounters with truck drivers, occupational health nurses should assess sleep quality and quantity and review healthy sleep hygiene strategies with them and their family members, if they are available. Future larger studies are necessary to inform the development of interventions and company policies to promote healthy sleep among truck drivers

Milner A, Scovelle AJ, King T, Marck C, McAllister A, Kavanagh A, et al. Gendered working environments as a determinant of mental health inequalities: a systematic review of 27 studies. Occupational and Environmental Medicine. 2021; 78:147-152. <https://doi.org/10.1136/oemed-2019-106281>

Abstract: BACKGROUND: 'Gendered working environments' describes the ways in which (1) differential selection into work, (2) variations in employment arrangements and working hours, (3) differences in psychosocial exposures and (4) differential selection out of work may produce varied mental health outcomes for men and women. The aim of this study was to conduct a systematic review to understand gender differences in mental health outcomes in relation to the components of gendered working environments. METHODS: The review followed a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) search approach and focused on studies published in 2008-2018. The protocol for the review was prospectively registered with PROSPERO (CRD42019124066). FINDINGS: Across the 27 cohort studies included in the review, we found that (1) there was inconclusive evidence on the effect of occupational gender composition on the mental health of men and women, (2) women's mental health was more likely to be affected by long working hours than men's; however, precarious employment was more likely to be negatively associated with men's mental health, (3) exposure to traditional constructs of psychosocial job stressors negatively affected the mental health of both women and men, and (4) unemployment and retirement are associated with poorer mental health in both genders. INTERPRETATION: The findings from this review indicate that gendered working environments may affect the mental health of both men and women, but the association is dependent on the specific exposure examined. There is still much to



be understood about gendered working environments, and future research into work and health should be considered with a gender lens

Ostergaard L, Mortensen RN, Kragholm K, Dalager-Pedersen M, Koch K, Kober L, et al. Work exposure and associated risk of hospitalisation with pneumonia and influenza: a nationwide study. *Scandinavian Journal of Public Health*. 2021; 49(1):57-63. <https://doi.org/10.1177/1403494820964974> [open access]

Abstract: BACKGROUND: Pneumonia and influenza are major health concerns and constitute a high economic burden. However, few data are available on the associated risk of pneumonia and influenza and work exposure on a large population scale. AIM: This study aimed to examine the associated risk of pneumonia and influenza by type of work exposure. METHODS: By cross-linking administrative Danish registries, we classified people in 10 different profession types. The main outcome was hospitalisation with pneumonia or influenza. A multivariable Poisson regression analysis was used to assess the associated incidence rate ratio (IRR) of being hospitalised with pneumonia or influenza by type of profession. RESULTS: A total of 1,327,606 people added risk time to the analyses. In a multivariable model, work in day care, public transportation, sewers and nursing home care was associated with an increased risk of hospitalisation with pneumonia compared to work within public administration: IRR=1.20 (95% confidence interval (CI) 1.12-1.28), IRR=1.21 (95% CI 1.09-1.34), IRR=1.61 (95% CI 1.19-2.19) and IRR=1.10 (95% CI 1.03-1.18), respectively. In a multivariable analysis, people working within public transportation were associated with an increased risk of hospitalisation with influenza compared to people working within public administration: IRR=2.54 (95% CI 1.79-3.58). CONCLUSIONS: Working in day care, public transportation, sewers and nursing home care increased the associated risk of hospitalisation with pneumonia, and working within public transportation increased the associated risk of being hospitalised with influenza compared to working within public administration

Sen A, Sanjog J, and Karmakar S. A comprehensive review of work-related musculoskeletal disorders in the mining sector and scope for ergonomics design interventions. *IIE Transactions*



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on Occupational Ergonomics and Human Factors. 2020; 8(3):113-131.

<https://doi.org/10.1080/24725838.2020.1843564>

Abstract: OCCUPATIONAL APPLICATIONS Work-related Musculoskeletal Disorders (WMSDs) are prevalent in many industries worldwide, including the large and labor-intensive mining sector. A systematic review was carried out to understand problems in the mining sector issues from three broad perspectives: 1) the prevalence of WMSDs among miners; 2) the association of occupational, psychosocial, environmental, and other risk factors with WMSDs causation; and 3) ergonomics interventions already proposed or implemented, and scope for design interventions. Our review revealed that automation, job aids, and displays are methods suitable for ergonomic design interventions. Ergonomic intervention strategies at various hierarchical levels, and the successive way forward as proposed in our review, could act as a catalyst in formulating problem-specific solution strategies by the participation of diverse stakeholders to implement a more human-centric workplace

Sheppard-Jones K, Goldstein P, Leslie M, Singleton P, Gooden C, Rumrill P, et al. Reframing workplace inclusion through the lens of universal design: considerations for vocational rehabilitation professionals in the wake of COVID-19. Journal of Vocational Rehabilitation. 2021; 54(1):71-79.

<https://doi.org/10.3233/JVR-201119>

Skagseth M, Fimland MS, Rise MB, Nilsen TIL, and Aasdahl L. Return-to-work self-efficacy after occupational rehabilitation for musculoskeletal and common mental health disorders: secondary outcomes of a randomized clinical trial. Journal of Rehabilitation Medicine. 2021; 53(1):jrm00146.

<https://doi.org/10.2340/16501977-2787> [open access]

Abstract: OBJECTIVE: To assess the effects of adding a workplace intervention to inpatient occupational rehabilitation on return-to-work self-efficacy, and whether changes in return-to-work self-efficacy were associated with future work outcomes. DESIGN: Randomized clinical trial. SUBJECTS: Individuals aged 18-60 years, sick-listed 212 months were randomized to multimodal inpatient rehabilitation with (n=?88) or without (n=?87) a workplace intervention. METHODS:



Between-group differences for 4 months follow-up were assessed using linear mixed models. Associations between self-efficacy scores and future sickness absence days during 12 months of follow-up were assessed by linear regression. RESULTS: There were no statistically significant between-group differences in self-efficacy during follow-up. Participants with high or medium self-efficacy scores at the end of rehabilitation had fewer sickness absence days during follow-up compared with participants with low scores. Participants with consistently high scores or an increasing score throughout the programme showed fewer sickness absence days than those with reduced or consistently low scores. CONCLUSION: Receiving an added workplace intervention did not increase return-to-work self-efficacy more than standard inpatient occupational rehabilitation alone. High scores and a positive development in return-to-work self-efficacy were associated with higher work participation. This suggests that return-to-work self-efficacy could be an important factor to consider in the return-to-work process

Soeker MS, Heyns M, Kaapitirapi P, Shoko S, and Modise W. Worker roles in the open labor market: the challenges faced by people with intellectual disabilities in the Western Cape, South Africa. Work. 2021; 68(1):255-266.

<https://doi.org/10.3233/WOR-203372>

Abstract: BACKGROUND: Work holds great meaning and benefits beyond just monetary gain for people with intellectual disabilities. It gives these individuals the opportunity to engage in meaningful occupation. OBJECTIVE: The purpose of the study was to explore challenges that people with intellectual disabilities (PWID) experience when adapting to their worker roles in the open labor market. METHODS: The study used grounded theory as the research design. Five male participants and two key informants participated in the study. Two semi structured interviews were conducted with each one of the seven participants (five PWID and two key informants). RESULTS: Three core concepts emerged: 1) Unforeseen challenges of change; 2) A well-planned work preparation program enables success and 3) Crossing the bridge into the workplace: "Do I belong here?" CONCLUSIONS: This indicated that with sufficient external support, PWID are able to gain a sense of social belonging and develop the necessary skills to cope with challenges that arise in the



workplace when PWID transition from protective/sheltered workshops to the open labor market. The findings of the study also indicated that work preparation programs and supportive employment approaches helped PWID transition to the open labor market

Vignoli M, Nielsen K, Guglielmi D, Mariani MG, Patras L, and Peiro JM. Design of a safety training package for migrant workers in the construction industry. Safety Science. 2021; 136:105124.

<https://doi.org/10.1016/j.ssci.2020.105124>

***IWH Authored publications.**



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