*Boonen A, Webers C, Butink M, Barten B, Betteridge N, Black DC, Bremander A, Boteva B, Brzezinska O, Chauhan L, Copsey S, Guimaraes V, Gignac M, et al. 2021 EULAR points to consider to support people with rheumatic and musculoskeletal diseases to participate in healthy and sustainable paid work. Annals of the Rheumatic Diseases. 2022; [epub ahead of print].
https://doi.org/10.1136/ard-2022-222678 **[open access]**

Abstract: AIM: As part of its strategic objectives for 2023, EULAR aims to improve the work participation of people with rheumatic and musculoskeletal diseases (RMDs). One strategic initiative focused on the development of overarching points to consider (PtC) to support people with RMDs in healthy and sustainable paid work participation. METHODS: EULAR's standardised operating procedures were followed. A steering group identified six research areas on paid work participation. Three systematic literature reviews, several non-systematic reviews and two surveys were conducted. A multidisciplinary taskforce of 25 experts from 10 European countries and Canada formulated overarching principles and PtC after discussion of the results of literature reviews and surveys. Consensus was obtained through voting, with levels of agreement obtained anonymously. RESULTS: Three overarching principles and 11 PtC were formulated. The PtC recognise various stakeholders are important to improving work participation. Five PtC emphasise shared responsibilities (eg, obligation to provide active support) (PtC 1, 2, 3, 5, 6). One encourages people with RMDs to discuss work limitations when necessary at each phase of their working life (PtC 4) and two focus on the role of interventions by healthcare providers or employers (PtC 7, 8). Employers are

encouraged to create inclusive and flexible workplaces (PtC 10) and policymakers to make necessary changes in social and labour policies (PtC 9, 11). A research agenda highlights the necessity for stronger evidence aimed at personalising work-related support to the diverse needs of people with RMDs. CONCLUSION: Implementation of these EULAR PtC will improve healthy and sustainable work participation of people with RMDs

*Hayden JA, Hayden JA, Ogilvie R, Singh S, Kashif S, Hartvigsen J, Maher CG, Furlan AD, et al. Commentary: collaborative systematic review may produce and share high-quality, comparative evidence more efficiently. Journal of Clinical Epidemiology. 2022; [epub ahead of print].
https://doi.org/10.1016/j.jclinepi.2022.09.013

Abstract: Systematic reviews are necessary to synthesize available evidence and inform clinical practice and health policy decisions. There has been an explosion of evidence available in many fields; this makes it challenging to keep evidence syntheses up to date and useful. Comparative effectiveness systematic reviews are informative, however producing these often-large reviews bring intense time and resource demands. This commentary describes the implementation of a systematic review using a collaborative model of evidence synthesis. We are implementing the collaborative review model to update a large Cochrane review investigating the efficacy and comparative effectiveness of exercise treatment design, delivery, and type characteristics for people with chronic low back pain. Three key benefits of the collaborative review model for evidence synthesis are: 1. team coordination and collaboration, 2. quality control measures, and 3. advanced comparative and other analyses. This new collaborative review model is developed and implemented to produce and share high-quality, comparative evidence more efficiently while building capacity and community within a research field

Batson A, Berecki-Gisolf J, Newnam S, and Stathakis V. Pre-injury health status of truck drivers with a workers' compensation claim. BMC Public Health. 2022; 22(1):1683.
https://doi.org/10.1186/s12889-022-13885-4   [open access]

Abstract: Truck drivers are a vulnerable population due to the high number of workplace injuries and fatalities predominant in their occupation. In Australia, the road freight transportation industry has been identified as a national priority area in terms of creating preventative measures to improve the health and safety of its workers. With an environment conducive to poor nutritional food choices and unhealthy lifestyle behaviours, many barriers exist to creating a safe and healthy workforce. Thus, the current study aimed to describe the pre-injury hospital-recorded health conditions and health service use of truck drivers with a worker's injury compensation claim/s when compared to workers in other industries. Data was obtained from a compensation claims database and linked with hospital admissions data recorded five years prior to the injury claim. Health and lifestyle behaviour data for the occupational code of truck drivers was compared to other occupational drivers, as well as to all other occupations. Analysis was conducted via logistic regression. The results found that

when compared to other occupational drivers, truck drivers were significantly more likely to have a hospital-recorded diagnosis of diabetes and/or hypertension, as well as being significantly more likely to have a hospital record of tobacco use and/or alcohol misuse/abuse. The findings show that there is a need to review and revise existing health strategies to promote the health and wellbeing of truck drivers, especially given their challenging work environment

Clemens KK, Ouedraogo AM, Le B, Voogt J, Macdonald M, Stranberg R, et al. Impact of Ontario's Harmonized Heat Warning and Information System on emergency department visits for heat-related illness in Ontario, Canada: a population-based time series analysis. Canadian Journal of Public Health. 2022; 113(5):686-697.
https://doi.org/10.17269/s41997-022-00665-1

Abstract: Intervention: Ontario's Harmonized Heat Warning and Information System (HWIS) brings harmonized, regional heat warnings and standard heat-health messaging to provincial public health units prior to periods of extreme heat. Research question: Was implementation of the harmonized HWIS in May 2016 associated with a reduction in emergency department (ED) visits for heat-related illness in urban locations across Ontario, Canada? Methods: We conducted a population-based interrupted time series analysis from April 30 to September 30, 2012-2018, using administrative health and outdoor temperature data. We used autoregressive integrated moving average models to examine whether ED rates changed following implementation of the harmonized HWIS, adjusted for maximum daily temperature. We also examined whether effects differed in heat-vulnerable groups (>=65 years or <18 years, those with comorbidities, those with a recent history of homelessness), and by heat warning region. Results: Over the study period, heat alerts became more frequent in urban areas (6 events triggered between 2013 and 2015 and 14 events between 2016 and 2018 in Toronto, for example). The mean rate of ED visits was 47.5 per 100,000 Ontarians (range 39.7-60.1) per 2-week study interval, with peaks from June to July each year. ED rates were particularly high in those with a recent history of homelessness (mean rate 337.0 per 100,000). Although rates appeared to decline following implementation of HWIS in some subpopulations, the change was not statistically significant at a population level (rate 0.04, 95% CI: -0.03 to 0.1, p=0.278). Conclusion: In urban areas across Ontario, ED encounters for heat-related illness may have declined in some subpopulations following HWIS, but the change was not statistically significant. Efforts to continually improve HWIS processes are important given our changing Canadian climate.

Eisenhauer M, Crupi L, Ray R, and Mann T. Tapping into the minds and hearts of the local public health workforce during the COVID-19 pandemic. Canadian Journal of Public Health. 2022; 113(5):678-685.
https://doi.org/10.17269/s41997-022-00664-2   [open access]

Abstract: SETTING: Ottawa Public Health (OPH) provides public health programming and services in the Ottawa region. At the onset of the COVID-19 pandemic in March 2020, the

OPH COVID-19 Case and Contact Management Team was established to help manage the spread of COVID-19 and support individuals who test positive, and their close contacts. INTERVENTION: In order to guide and support the COVID-19 Case and Contact Management Team, the COVID-19 Strategic Support Team implemented an anonymous internal communication tool called the COVID-19 Case Management Forum. Case and Contact Management employees were invited to submit their questions, concerns, and words of encouragement on the forum, and the COVID-19 Strategic Support Team routinely replied to forum submissions via team email. OUTCOMES: Qualitative analyses of employee forum submissions revealed 6 main themes and 31 unique sub-themes related to questions, concerns, and feelings that arose throughout this pandemic response. Recurrent themes emerged relating to process questions, communication challenges, solution generation, and feelings of frustration. Summative content analyses of the COVID-19 Strategic Support team's replies demonstrated 6 main answer types: explaining procedures, identifying resources, explaining rationales, human resource explanations, sharing employee feedback with relevant parties, and creating practice tools. IMPLICATIONS: The online forum tool was developed and implemented early in the pandemic response to provide key insights into OPH's public health workforce needs and well-being throughout the COVID-19 response. The forum encouraged open dialogue and provided opportunities to establish clarity in a time of rapid situational change

Frank JW. Controlling the obesity pandemic: Geoffrey Rose revisited. Canadian Journal of Public Health. 2022; 113(5):736-742.
https://doi.org/10.17269/s41997-022-00636-6   [open access]
Abstract: The ongoing obesity pandemic threatens the health of hundreds of millions globally. However, to date, no country has had much success in limiting its growth, let alone reversing it. This commentary demonstrates the relevance to the obesity pandemic of the public health conceptual framework of epidemiologist Geoffrey Rose, first published as "Sick Individuals and Sick Populations" in 1985. That framework provides a useful way to analyze the pandemic's prevention and control options, based on the notions of primordial, primary, secondary and tertiary prevention-the full spectrum of "more upstream and more downstream" approaches, each with its pros and cons. Based on an analysis of key studies to date, this commentary argues strongly that only the primordial prevention approach is likely to be successful against the obesity pandemic-but its onerous requirements for society-wide behavioural and cultural change may make that public health struggle a long one

Fyffe DC, Lequerica AH, Ward-Sutton C, Williams NF, Sundar V, and O'Neill J. Understanding persons with disabilities' reasons for not seeking employment. Rehabilitation Counseling Bulletin. 2022; 66(1):3-12.
https://doi.org/10.1177/00343552211006773

Jordan de Urries FB, Sanchez B, and Verdugo MA. Assessment of work ability decline in workers with intellectual and developmental disabilities. Journal of Vocational Rehabilitation. 2022; 57(2):187-195.
https://doi.org/10.3233/JVR-221209

Khairuddin MZF, Hasikin K, Abd Razak NA, Lai KW, Osman MZ, Aslan MF, et al. Predicting occupational injury causal factors using text-based analytics: a systematic review. Frontiers in Public Health. 2022; 10:984099.
https://doi.org/10.3389/fpubh.2022.984099   [open access]

Abstract: Workplace accidents can cause a catastrophic loss to the company including human injuries and fatalities. Occupational injury reports may provide a detailed description of how the incidents occurred. Thus, the narrative is a useful information to extract, classify and analyze occupational injury. This study provides a systematic review of text mining and Natural Language Processing (NLP) applications to extract text narratives from occupational injury reports. A systematic search was conducted through multiple databases including Scopus, PubMed, and Science Direct. Only original studies that examined the application of machine and deep learning-based Natural Language Processing models for occupational injury analysis were incorporated in this study. A total of 27, out of 210 articles were reviewed in this study by adopting the Preferred Reporting Items for Systematic Review (PRISMA). This review highlighted that various machine and deep learning-based NLP models such as K-means, Naive Bayes, Support Vector Machine, Decision Tree, and K-Nearest Neighbors were applied to predict occupational injury. On top of these models, deep neural networks are also included in classifying the type of accidents and identifying the causal factors. However, there is a paucity in using the deep learning models in extracting the occupational injury reports. This is due to these techniques are pretty much very recent and making inroads into decision-making in occupational safety and health as a whole. Despite that, this paper believed that there is a huge and promising potential to explore the application of NLP and text-based analytics in this occupational injury research field. Therefore, the improvement of data balancing techniques and the development of an automated decision-making support system for occupational injury by applying the deep learning-based NLP models are the recommendations given for future research

Laberge M, Lefrancois M, Chadoin M, Probst I, Riel J, Casse C, et al. Gender and work in ergonomics: recent trends. Ergonomics. 2022; [epub ahead of print].
https://doi.org/10.1080/00140139.2022.2129806
Abstract: Since the establishment of the Gender and Work Technical Committee (TC) of the International Ergonomics Association (IEA) in 2006, many researchers have addressed the role of sex and gender in ergonomics, producing a great deal of new information. This special issue aims to present new ways of viewing women's work and gender differences in work-related injury risks in an era of rapidly changing labour market configurations. It offers innovative methods for integrating sex and gender into ergonomic analysis and for designing

work environments. It shares reflections on the intersection of vulnerabilities according to certain identity markers. Finally, it contributes to establishing milestones standards of practice so that the consideration of sex and gender can be more systematically modelled in ergonomics research and interventions, for example in training ergonomists or in knowledge transfer initiatives

Luqman A and Zhang Q. Explore the mechanism for seafarers to reconnect with work after post-pandemic psychological distress (PAPIST(19)): the moderating role of health-supporting climate. Ocean and Coastal Management. 2022; 223:106153.
https://doi.org/10.1016/j.ocecoaman.2022.106153   **[open access]**

Abstract: Covid-19 has disrupted the lives of employees all over the world. After experiencing a prolonged yet ongoing destructive event (i.e. Covid-19), finding an effective and non-invasive way to get employees back and engage in work is a huge challenge for scholars. Few studies have focused on returning to work after a traumatic event (limited time), but the post-pandemic psychological stress caused by the Covid-19 (PAPIST(19)) has not received much attention. Current research addresses this gap and uses a comprehensive model drawn from the transactional model of stress and the Kahn psychological framework to advance the work of predicting PAPIST(19). Specifically, the current research investigates how PAPIST(19) is related to job engagement, and emotional exhaustion and how job reattachment mediates the relationship. In addition, we use health support climate (HSC) as a boundary condition in our model, which can weaken the impact of PAPIST(19) and enhance the effectiveness of job reattachment in reducing emotional exhaustion and increasing job engagement. To test our model, we collected data in multiple waves from Chinese seaports, where seafarers came to work after the restrictions were lifted in China. The current research is one of the earliest scholarly contributions. It paved the way for the research to solve the problem of workers returning to work after large-scale destructive events, and discussed important implications

Ma K, Liang L, Chutiyami M, Nicoll S, Khaerudin T, and Ha XV. COVID-19 pandemic-related anxiety, stress, and depression among teachers: a systematic review and meta-analysis. Work. 2022; 73(1):3-27.
https://doi.org/10.3233/WOR-220062

Abstract: BACKGROUND: As millions of teachers have been forced to rely upon remote teaching due to the closure of schools during the COVID-19 pandemic. It is particularly important to understand the extent to which teacher's psychological wellbeing has been affected by this global health crisis. OBJECTIVE: The aim of this comprehensive systematic review and meta-analysis was twofold: 1) ascertain the prevalence of stress, anxiety, depression among teachers during the COVID-19 outbreak; 2) identify the associated factors of these psychological wellbeing domains of the teachers. METHODS: Academic Search Premier, Eric, PsycInfo, Scopus, and Web of Science were searched for articles published from December 2019 and July 2021, using search terms including "COVID-19" "anxiety" "depression" "stress", and "teachers". RESULTS: This study included 54 studies synthesising

data from 256,896 teachers across 22 countries. The meta-analysis showed higher prevalence of stress (62.6%, 95% Confidence Interval [CI]: 46.1-76.6), compared to anxiety (36.3%, 95% CI: 28.5-44.9) and depression (59.9%, 95% CI: 43.4-74.4) among teachers. Teachers' experiences of these psychological issues were associated with various socio-demographic and institutional factors, including gender, nature of online teaching, job satisfaction, teaching experience, and the volume of workload. Additionally, several protective factors, such as regular exercises and provision of technical support for online teaching, reduced teachers' negative psychological experiences. CONCLUSION: There is a need for authorities to formulate educational policies to improve teachers' wellbeing at the time of global crisis. Special attention should be paid to assist female teachers in overcoming physical and mental stressors

Mohammadfam I, Mahdinia M, Aliabadi MM, and Soltanian AR. Effect of safety climate on safety behavior and occupational injuries: a systematic review study. Safety Science. 2022; 156:105917.
https://doi.org/10.1016/j.ssci.2022.105917

Ottaviani Aalmo G, Spinelli R, Magagnotti N, and Visser R. Quantitative and qualitative workload assessment in steep terrain forest operations: fostering a safer work environment through yarder automation. Ergonomics. 2022; [epub ahead of print].
https://doi.org/10.1080/00140139.2022.2123562
Abstract: Many forestry roles have changed from being manual tasks with a high physical workload to being a machine operator task with a high mental workload. Automation can support a decrease in mental fatigue by removing tasks that are repetitive and monotonous for the operators. Cable yarding presents an ideal opportunity for early adoption of automation technology; specifically the carriage movement along a defined corridor. A Valentini V-850 cable yarder was used in an Italian harvesting setting, in order to gauge the ergonomic benefit of carriage control automation. The study showed that automating yarder carriage movements improved the ergonomic situation of the workers directly involved in the related primary tasks. However, the caveat is that improving one work task may negatively affect the other work tasks, and therefore introducing automation to a worksite must be done after considering all impacts on the whole system. Practitioner summary: Automation decreased the winch operator's mental workload while improving overall productivity. At the same time, the mental and physiological workload of the operator tasked with bucking were slightly increased. Ideally, winch automation should be coupled with bucking mechanisation to balance the intervention and boost both operator well-being and productivity

Saad-Hussein A, Shahy EM, Ibrahim KS, Mahdy-Abdallah H, Taha MM, Abdel-Shafy EA, et al. Influence of GSTM1, T1 genes polymorphisms on oxidative stress and liver enzymes in rural and urban pesticides-exposed workers. Archives of Environmental & Occupational Health. 2022; 77(10):800-808.

Abstract: Several studies discussed the relationship between the toxicity of organophosphates (OPs) and carbamates pesticides and oxidative stress which affects human health. This study aimed to evaluate the effects of pesticides on the induction of oxidative stress and hepatotoxicity. It was also focused on glutathione-S-transferase gene polymorphism in the modulation of these effects. In addition, the role of the educational level of exposed workers was studied. Acetylcholinesterase (AChE), butyrylcholinesterase (BuChE), liver enzymes, malondialdehyde (MDA), reduced glutathione (GSH), superoxide dismutase (SOD), and glutathione S transferase (GST) were estimated at 100 pesticide-exposed workers (50 urban researchers (UE) and 50 rural sprayers (RE)), and 100 matched controls (50 urban controls (UC)and 50 rural controls (RC)). AChE and BuChE were decreased in RE and UE compared to RC. Aspartate aminotransferase (AST) and alkaline phosphatase (ALP) activity were elevated in UE and UC compared to the RE and RC. Alanine aminotransferase (ALT) was elevated in UE compared to RE. MDA in RE and UE showed elevation compared to RC. There was a significant reduction in the levels of GSH, GST, and GPx in UE compared to RE and RC. The most sensitive pesticide-induced hepatotoxicity group were exposed workers with the GSTT1 genotype. Within these workers, ALT and ALP were significantly correlated with MDA and inversely correlated with AChE and BuChE, while AST was inversely correlated with AChE and BuChE only in UE. Conclusion: GST gene polymorphisms appeared to have a significant role in workers' susceptibility to hepatotoxic effects due to occupational exposure to pesticides; GSTT1 was the most sensitive genotype

Singh V, Young JQ, Malhotra P, McCann-Pineo M, Rasul R, Corley SS, et al. Evaluating burnout during the COVID-19 pandemic among physicians in a large health system in New York. Archives of Environmental & Occupational Health. 2022; 77(10):819-827.

Abstract: PURPOSE: The COVID-19 pandemic has generated significant psychological distress among health care workers worldwide. New York State, particularly New York City and surrounding counties, were especially affected, and experienced over 430,000 COVID-19 cases and 25,000 deaths by mid-August 2020. We hypothesized that physicians and trainees (residents/fellows) who were redeployed outside of their specialty to treat COVID-19 inpatients would have higher burnout. METHODS: We conducted a cross-sectional survey to assess burnout among attending and trainee physicians who provided patient care during the COVID-19 pandemic between March-May 2020 across a diverse health care system in New York. Separate multivariable logistic regressions were performed to determine the association between redeployment and measures of burnout: Emotional Exhaustion (EE) and Depersonalization. Burnout measures were also compared by physician vs trainee status. The differential association between redeployment and outcomes with respect to trainee status was also evaluated. RESULTS: Redeployment was significantly associated with increased odds of EE {OR =1.53, 95% CI: 1.01-2.31} after adjusting for gender and Epidemic-Pandemic Impacts Inventory (EPII) score. Similarly, being a trainee, especially a junior level trainee, was

associated with increased odds of EE {OR = 1.59, 95% CI: 1.01-2.51} after adjusting for gender and EPII scores. However, neither redeployment nor trainee status were significantly associated with Depersonalization. Interactions between redeployment and trainee status were not significant for any of the outcomes (p>.05). CONCLUSION: Physicians who were redeployed to treat COVID-19 patients had higher reported measures of EE. Trainees, irrespective of redeployment status, had higher EE as compared with attendings. Additional research is needed to understand the long-term impact of redeployment on burnout among redeployed physicians. Programs to identify and address potential burnout among physicians, particularly trainees, during pandemics may be beneficial

Tham SW, Murray CB, Law EF, Slack KE, and Palermo TM. The impact of the COVID-19 pandemic on pain and psychological functioning in young adults with chronic pain. Pain. 2022; 163(10):e1095-e1101.
https://doi.org/10.1097/j.pain.0000000000002618

Abstract: Data are equivocal on the consequences of COVID-19 pandemic on pain and well-being for individuals with chronic pain. Furthermore, little is known regarding its impact on the health of young adults with chronic pain. We conducted a longitudinal study to compare pain, psychological functioning, and substance use before and during the pandemic of 196 young adults with chronic pain. Participants aged 18 to 24 years (M = 21.1 years; 79.6% females) reported on pain, anxiety, depression, and substance use before (October 2018-August 2019) and during the pandemic (October 2020-November 2020), in addition to the assessment of COVID-19 exposure and its impact. Before the pandemic, young adults experienced mild-to-moderate pain intensity (M = 3.75, SD = 2.33) and pain interference (M = 3.44, SD = 2.69). Findings were that pain intensity, pain interference, and depression symptoms remained stable during the pandemic. In contrast, anxiety symptoms increased significantly (M = 8.21, SD = 5.84 vs M = 8.89, SD = 5.95, P = 0.04). Tobacco, alcohol, and cannabis use were unchanged. Mixed linear models revealed that COVID-19 exposure and impact were not associated with changes in pain intensity or interference, with female sex associated with increased pain intensity (β = 0.86, P = 0.02) and pain interference (β = 0.87, P = 0.02). Our findings indicated relative stability of pain symptoms experienced by young adults with chronic pain. However, the increases in anxiety highlight the need to facilitate treatment access for mental health services to mitigate downstream impact

Van Zon SKR, Ots P, Robroek SJW, Burdorf A, Oude Hengel KM, and Brouwer S. Do chronic diseases moderate the association between psychosocial working conditions and work exit? Longitudinal results from 55 950 Dutch workers. Journal of Epidemiology & Community Health. 2022; 76:847-852.
https://doi.org/10.1136/jech-2021-218432

Abstract: BACKGROUND: This study aims to examine whether the presence of chronic diseases or multimorbidity moderates the associations between psychosocial working conditions and work exit through unemployment, work disability or early retirement.

METHODS: Data from Lifelines (n=55 950), a prospective population-based cohort study, were enriched with monthly information on employment status from Statistics Netherlands. Working conditions were measured with the Copenhagen Psychosocial Questionnaire. Work exit was defined as unemployment, work disability and early retirement. Participants were classified as having no chronic disease, one chronic disease or multimorbidity. Cause-specific Cox proportional hazard regression models, adjusted for age, gender, education and partnership status, were used to analyse associations between working conditions and work exit. Interaction terms were used to examine moderation by chronic disease status. RESULTS: Higher social support decreased the risk for unemployment, work disability and early retirement. Higher meaning of work decreased the risk of unemployment, and more possibilities for development decreased the risk for work disability. Chronic disease status did generally not moderate associations between working conditions and work exit. Only among workers without a chronic disease, more possibilities for development was associated with a lower risk for unemployment (HR: 0.89; 95% CI: 0.85 to 0.94). CONCLUSION: While efforts to retain workers with chronic diseases in the labour market should continue, favourable psychosocial working conditions are important for all workers

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