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January 22, 2021

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***Jetha A, Martin Ginis KA, Ibrahim S, and Gignac MAM. The working disadvantaged: the role of age, job tenure and disability in precarious work. BMC Public Health. 2020; 20(1):1900.**

<https://doi.org/10.1186/s12889-020-09938-1> [open access]

Abstract: Background: Precarious work is an increasingly common characteristic of industrialized labor markets that can widen health inequities, especially among disadvantaged workforce segments. Study objectives are to compare precarious employment in workers with and without disabilities, and to examine the modifying effect of disability in the relationships between age, job tenure and precarious work. Methods: Employed Canadians with (n = 901) and without disabilities (n = 901) were surveyed on exposure to precarious working conditions. Information on age and job tenure were collected from respondents along with sociodemographic, health and work context details. Multivariable logistic models examined the association between disability and precarious work. Also, multigroup probit models examined precarious work for young (18-35 yrs), middle-aged (36-50 yrs) and older adults (> 50 yrs) and job tenure and was stratified by participants with and without disabilities. Results: Almost equal proportions of young, middle-aged and older



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participants were recruited. Mean job tenure of participants was 9.5 years (SD = 9.0). Close to one-third of participants reported working precariously. At the multivariable level, a disability was not associated with working precariously. However, multigroup modelling indicated that disability was a significant effect-modifier. Older adults with a disability had a 1.88 times greater odds of reporting precarious work when compared to young adults (OR = 1.88, 95%CI 1.19, 2.98). When reporting a disability, longer job tenure was related to a 0.95 times lower odds of precarious work (OR = 0.95 95%CI 0.93, 0.98). The relationship between age and job tenure was not significant for those not reporting a disability. Discussion: Precarious work has the potential to affect workers with and without disabilities. For those with a disability, being an older adult and/or a new worker can contribute to a greater likelihood of being employed precariously. Policies and programs can be recommended to address precarious working conditions and related health inequities for people with disabilities based on life and career phase.

***Tomba E, Mofidi A, van den Heuvel S, van Bree T, Michaelsen F, Jung Y, et al. Economic burden of work injuries and diseases: a framework and application in five European Union countries. BMC Public Health. 2021; 21(1):49.**

<https://doi.org/10.1186/s12889-020-10050-7> [open access]

Abstract: Background: Estimates of the economic burden of work injuries and diseases can help policymakers prioritize occupational health and safety policies and interventions in order to best allocate scarce resources. Several attempts have been made to estimate these economic burdens at the national level, but most have not included a comprehensive list of cost components, and none have attempted to implement a standard approach across several countries. The aim of our study is to develop a framework for estimating the economic burden of work injuries and diseases and implement it for selected European Union countries. Methods: We develop an incidence cost framework using a bottom-up approach to estimate the societal burden of work injuries and diseases and implement it for five European Union countries. Three broad categories of costs are considered-direct healthcare, indirect productivity and intangible health-related quality of life costs. We begin with data on newly diagnosed work injuries and diseases from



calendar year 2015. We consider lifetime costs for cases across all categories and incurred by all stakeholders. Sensitivity analysis is undertaken for key parameters. Results: Indirect costs are the largest part of the economic burden, then direct costs and intangible costs. As a percentage of GDP, the highest overall costs are for Poland (10.4%), then Italy (6.7%), The Netherlands (3.6%), Germany (3.3%) and Finland (2.7%). The Netherlands has the highest per case costs (€75,342), then Italy (€58,411), Germany (€44,919), Finland (€43,069) and Poland (€38,918). Costs per working-age population are highest for Italy (€4956), then The Netherlands (€2930), Poland (€2793), Germany (€2527) and Finland (€2331). Conclusions: Our framework serves as a template for estimating the economic burden of work injuries and diseases across countries in the European Union and elsewhere. Results can assist policymakers with identifying health and safety priority areas based on the magnitude of components, particularly when stratified by key characteristics such as industry, injury/disease, age and sex. Case costing can serve as an input into the economic evaluation of prevention initiatives. Comparisons across countries provide insights into the relevant performance of health and safety systems.

Biering K, Vestergaard JM, Nielsen KJ, Carstensen O, and Kargaard A. Contacts with general practitioner, sick leave and work participation after electrical injuries: a register-based, matched cohort study. Occupational and Environmental Medicine. 2021; 78(1):54-60.

<https://doi.org/10.1136/oemed-2020-106858>

Abstract: OBJECTIVE: Exposure to electrical current may cause injury with both mental and physiological consequences. This may lead to increased contacts with general practitioners (GP) and the injured person may develop reduced ability to work. We aimed to examine these outcomes in terms of work-participation, long-term sick leave and contacts with GPs. METHODS: In a matched cohort design, we identified 14112 electrical injuries in two registries and matched these with both patients with distorsion injuries or eye injuries, and with persons from the same occupation, using year of injury, sex and age for matching. We defined the outcomes based on register information regarding contacts with GPs and public transfer income. After the injury, we determined if the person had a long-term



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sick leave episode during the first 6, 12 months and 5 years. We calculated work participation during the year and 5 years and the number of GP contacts in the year of the injury, the year after and 5 years after the injury and dichotomised this at twice the mean number of contacts in the study population. The associations were analysed using conditional logistic regression. RESULTS: We found increased risk for all defined outcomes, with the highest estimates in the occupation match. The risk estimates were similar over time. Adjusting for previous work participation increased the estimates slightly, whereas adjusting for previous contacts with GPs reduced the estimates. Restricting to those with at longer hospitalisation increased the estimates. CONCLUSION: Electrical injuries increase risk of long-term sick leave, low work participation and increased contacts with GPs

Chong S, Huang Y, and Chang CD. Supporting interdependent telework employees: a moderated-mediation model linking daily COVID-19 task setbacks to next-day work withdrawal. Journal of Applied Psychology. 2020; 105(12):1408-1422.

<https://doi.org/10.1037/apl0000843>

Abstract: The COVID-19 crisis has compelled many organizations to implement full-time telework for their employees in a bid to prevent a transmission of the virus. At the same time, the volatile COVID-19 situation presents unique, unforeseen daily disruptive task setbacks that divert employees' attention from routinized work tasks and require them to respond adaptively and effortfully. Yet, little is known about how telework employees react to such complex demands and regulate their work behaviors while working from home. Drawing on Hobfoll's (1989) conservation of resources (COR) theory, we develop a multilevel, two-stage moderated-mediation model arguing that daily COVID-19 task setbacks are stressors that would trigger a resource loss process and will thus be positively related to the employee's end-of-day emotional exhaustion. The emotionally exhausted employee then enters a resource preservation mode that precipitates a positive relationship between end-of-day exhaustion and next-day work withdrawal behaviors. Based on COR, we also predict that the relation between daily COVID-19 task setbacks and exhaustion would be more positive in telework employees who have higher (vs. lower) task interdependence with coworkers, but organizations could



alleviate the positive relation between end-of-day exhaustion and next-day work withdrawal behavior by providing employees with higher (vs. lower) telework task support. We collected daily experience-sampling data over 10 workdays from 120 employees (Level 1, n = 1,022) who were teleworking full-time due to the pandemic lockdown. The results generally supported our hypotheses, and their implications for scholars and managers during and beyond the pandemic are discussed. (PsycInfo Database Record (c) 2020 APA, all rights reserved)

Els C, Jackson TD, Milen MT, Kunyk D, Wyatt G, Sowah D, et al. Random drug and alcohol testing for preventing injury in workers. Cochrane Database of Systematic Reviews. 2020; 12:CD012921.

<https://doi.org/10.1002/14651858.CD012921.pub2>

Abstract: BACKGROUND: Drug- and alcohol-related impairment in the workplace has been linked to an increased risk of injury for workers. Randomly testing populations of workers for these substances has become a practice in many jurisdictions, with the intention of reducing the risk of workplace incidents and accidents. Despite the proliferation of random drug and alcohol testing (RDAT), there is currently a lack of consensus about whether it is effective at preventing workplace injury, or improving other non-injury accident outcomes in the work place. OBJECTIVES: To assess the effectiveness of workplace RDAT to prevent injuries and improve non-injury accident outcomes (unplanned events that result in damage or loss of property) in workers compared with no workplace RDAT. SEARCH METHODS: We conducted a systematic literature search to identify eligible published and unpublished studies. The date of the last search was 1 November 2020. We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, Embase, two other databases, Google Scholar, and three trials registers. We also screened the reference lists of relevant publications known to us. SELECTION CRITERIA: Study designs that were eligible for inclusion in our review included randomised controlled trials (RCTs), cluster-randomised trials (CRTs), interrupted time-series (ITS) studies, and controlled before-after (CBA) studies. Studies needed to evaluate the effectiveness of RDAT in preventing workplace injury or improving other non-injury workplace outcomes.



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We also considered unpublished data from clinical trial registries. We included employees working in all safety-sensitive occupations, except for commercial drivers, who are the subject of another Cochrane Review. **DATA COLLECTION AND ANALYSIS:** Independently, two review authors used a data collection form to extract relevant characteristics from the included study. They then analysed a line graph included in the study of the prevalence rate of alcohol violations per year. Independently, the review authors completed a GRADE assessment, as a means of rating the quality of the evidence. **MAIN RESULTS:** Although our searching originally identified 4198 unique hits, only one study was eligible for inclusion in this review. This was an ITS study that measured the effect of random alcohol testing (RAT) on the test positivity rate of employees of major airlines in the USA from 1995 to 2002. The study included data from 511,745 random alcohol tests, and reported no information about testing for other substances. The rate of positive results was the only outcome of interest reported by the study. The average rate of positive results found by RAT increased from 0.07% to 0.11% when the minimum percentage of workers who underwent RAT annually was reduced from 25% to 10%. Our analyses found this change to be a statistically significant increase (estimated change in level, where the level reflects the average percentage points of positive tests = 0.040, 95% confidence interval 0.005 to 0.075; $P = 0.031$). Our GRADE assessment, for the observed effect of lower minimum testing percentages associating with a higher rate of positive test results, found the quality of the evidence to be 'very low' across the five GRADE domains. The one included study did not address the following outcomes of interest: fatal injuries; non-fatal injuries; non-injury accidents; absenteeism; and adverse effects associated with RDAT. **AUTHORS' CONCLUSIONS:** In the aviation industry in the USA, the only setting for which the eligible study reported data, there was a statistically significant increase in the rate of positive RAT results following a reduction in the percentage of workers tested, which we deem to be clinically relevant. This result suggests an inverse relationship between the proportion of positive test results and the rate of testing, which is consistent with a deterrent effect for testing. No data were reported on adverse effects related to RDAT. We could not draw definitive conclusions regarding the effectiveness of RDAT for employees in safety-sensitive occupations



(not including commercial driving), or with safety-sensitive job functions. We identified only one eligible study that reflected one industry in one country, was of non-randomised design, and tested only for alcohol, not for drugs or other substances. Our GRADE assessment resulted in a 'very low' rating for the quality of the evidence on the only outcome reported. The paucity of eligible research was a major limitation in our review, and additional studies evaluating the effect of RDAT on safety outcomes are needed

Fernandez-Esquer ME, Aguerre CF, Ojeda M, Brown LD, Atkinson JS, Rhoton JM, et al. Documenting and understanding workplace injuries among Latino day laborers. Journal of Health Care for the Poor and Underserved. 2020; 31(2):791-809.

<https://doi.org/10.1353/hpu.2020.0061>

Abstract: BACKGROUND: Latino day laborers face substantial injuries at work. We present a comprehensive assessment of their injury experience and explore the predictors of self-reported injuries. METHODS: Worker and injury characteristics were collected from 331 day laborers using an innovative injury assessment tool. The odds of injury were estimated using a logistic regression. RESULTS: Participants were foreign-born, Spanish monolingual, and employed in construction. Sixty-seven individuals reported 88 past-year injuries, mostly involving the upper or lower extremities. Injuries were caused by moving heavy objects, falling, or being struck an object. Of the documented injuries, 24% were not reported at work due to fear of being fired; 64.4% resulted in missed workdays, 54.0% in temporary incapacitation, and 34.5% in permanent incapacitation. Being married significantly reduced the odds of reporting an injury. DISCUSSION: Better documentation can inform the development of better policy protections that ameliorate injuries experienced by Latino day laborers at the workplace

Furuya-Kanamori L, Xu C, Hasan SS, and Doi SA. Quality versus Risk-of-Bias assessment in clinical research. Journal of Clinical Epidemiology. 2021; 129:172-175.

<https://doi.org/10.1016/j.jclinepi.2020.09.044>

Abstract: Assessment of internal validity safeguards implemented by researchers has been used to examine the potential reliability of evidence generated within a study. These safeguards protect against



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systematic error, and such an assessment has traditionally been called a quality assessment. When the results of a quality assessment are translated through some empirical construct to the potential risk of bias, this has been termed a risk of bias assessment. The latter has gained popularity and is commonly used interchangeably with the term quality assessment. This key concept paper clarifies the differences between these assessments and how they may be used and interpreted when assessing clinical evidence for internal validity

Gkiouleka A and Huijts T. Intersectional migration-related health inequalities in Europe: exploring the role of migrant generation, occupational status & gender. *Social Science & Medicine*. 2020; 267:113218.

<https://doi.org/10.1016/j.socscimed.2020.113218>

Abstract: Integrating intersectionality theory and employing a quantitative design, the current study explores how migration-related health inequalities in Europe interact with migrant generation, occupational status and gender. Multilevel logistic regression analyses are conducted using pooled data from six waves of the European Social Survey (2004-2014), from 27 countries for two subjective health measures (general self-reported health and hampering conditions). The results reveal multiple relationships of health inequality that operate simultaneously and the complexity through which the combination of social privilege and disadvantage can have a particularly negative impact on individual health. The 'healthy migrant effect' seems to apply particularly for first-generation immigrants working as manual employees, and within occupational categories, in certain cases non-migrant women are more susceptible to poor health than migrant men. This evidence highlights how the health impact of migration is subject to additional dimensions of social positioning as well as the importance of an intersectional perspective for the monitoring of health inequalities in Europe

Hamel C, Michaud A, Thuku M, Skidmore B, Stevens A, Nussbaumer-Streit B, et al. Defining rapid reviews: a systematic scoping review and thematic analysis of definitions and defining characteristics of rapid reviews. *Journal of Clinical Epidemiology*. 2021; 129:74-85.



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<https://doi.org/10.1016/j.jclinepi.2020.09.041>

Abstract: BACKGROUND AND OBJECTIVE: Rapid reviews were first mentioned in the literature in 1997, when Best et al. described the rapid health technology assessment program in the south and west regions of England but did not provide a formal definition. More recently, the only consensus around a rapid review definition is that a formal definition does not exist. The primary aim of this work is to create a repository of existing definitions and to identify key themes, which may help the knowledge synthesis community in defining rapid review products. **METHODS:** A systematic scoping review was performed to identify definitions used in journal-published rapid reviews written in English between 2017 and January 2019. We searched Medline, Embase Classic+ Embase, PsycINFO, ERIC, Cochrane Library, CINAHL, and Web of Science on December 21, 2018. Two reviewers performed study selection and data extraction using a priori-defined methods published in a protocol. Definitions from rapid review methods articles (published from 1997 onward) identified in another scoping review were added to the results, and all definitions were thematically analyzed using NVivo. A quantitative analysis was also performed around studies cited. **RESULTS:** Definitions from 216 rapid reviews and 90 rapid review methods articles were included in the thematic analysis. Eight key themes were identified: accelerated/rapid process or approach, variation in methods shortcuts, focus/depth/breadth of scope, compare and contrast to a full traditional systematic review, stakeholder rationale, resource efficiency rationale, systematic approach, bias/limitations. Secondary referencing was a common occurrence. **CONCLUSION:** Thematic analysis performed in this systematic scoping review has allowed for the creation of a suggested definition for rapid reviews that can be used to inform the systematic review community

Harpur P and Blanck P. Gig workers with disabilities: opportunities, challenges, and regulatory response. Journal of Occupational Rehabilitation. 2020; 30(4):511-520.

<https://doi.org/10.1007/s10926-020-09937-4> [open access]

Abstract: Purpose This article examines gig work-typified by technologically-based, on-demand, independent contractor arrangements-for people with disabilities. Methods To do so, it draws upon prior and current research to describe the nature of gig work for



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people with disabilities, as well as the challenges and new prospects that such work presents. It also discusses recent regulatory reforms and proposes improvements, particularly in light of the current pandemic. Results Participation in the traditional employment market for people with disabilities who can and wish to work remains limited, even when workplace accommodations and individualized adjustments are possible. Increasingly, though, self-directed or independently contracted work is a way for people with disabilities to participate in the mainstream economy. The "gig economy," in particular, has provided additional opportunities for self-directed work, although the novel coronavirus pandemic has required existing approaches to be reconceived. Conclusions The gig economy provides new prospects, as well as challenges, for people with disabilities to engage in meaningful work. It also requires innovative regulatory responses to the gig work relationship, especially during the pandemic era

Huo Yung Kai S, Ferrieres J, Carles C, Turpin M, Lapebie FX, Dutheil F, et al. Lower limb venous and arterial peripheral diseases and work conditions: systematic review. Occupational and Environmental Medicine. 2021; 78(1):4-14.

<https://doi.org/10.1136/oemed-2019-106375>

Abstract: OBJECTIVES: The individual peripheral vascular disease risk factors are well documented, but the role of work conditions remains equivocal. This systematic review aims to assess relationships between lower limb peripheral venous diseases (lower limb varicose veins (LLVV), venous thromboembolism (VTE) comprising deep vein thrombosis and pulmonary embolism), peripheral arterial disease (intermittent claudication, aortic dissection, aortic aneurysm) and occupational constraints among working adults. METHODS: Several databases were systematically searched until February 2019 for observational studies and clinical trials. Preferred Reporting Items for Systematic Reviews and Meta-Analyses method was used for article selection. Quality assessment and risk of bias were evaluated using Strengthening the Reporting of Observational Studies in Epidemiology and Newcastle-Ottawa scales. RESULTS: Among the 720 screened articles, 37 remained after full-text evaluation. Among the 21 studies on LLVV, prolonged standing was significantly associated to a higher risk of varicose veins with a



threshold probably around >3 to 4 hours/day but exposure duration in years was not sufficiently considered. Seated immobility was often observed in workers, with no sufficient evidence to prove that prolonged sitting at work is related to VTE. Carrying heavy loads, stress at work and exposure to high temperatures have emerged more recently notably in relation to varicose veins but need to be better explored. Only three studies discussed the potential role of work on peripheral arterial disease development. **CONCLUSIONS:** Although some observational studies showed that prolonged standing can be related to varicose veins and that seated immobility at work could be linked to VTE, very little is known about peripheral arterial disease and occupational constraints. Clinical trials to determine preventive strategies at work are needed. **PROSPERO REGISTRATION NUMBER: CRD42019127652**

Lane TJ, Sheehan L, Gray S, and Collie A. Regional differences in time off work after injury: a comparison of Australian states and territories within a single workers' compensation system. Journal of Occupational Rehabilitation. 2021; [epub ahead of print].

<https://doi.org/10.1007/s10926-020-09947-2>

Abstract: Purpose Time off work after workplace injury varies by compensation system. While often attributed to features of the compensation system, unaccounted regional factors may drive much of the effect. In this study, we compare disability durations by state and territory of residence within a single national workers' compensation system. Large differences would indicate that factors other than compensation system settings are responsible for system effects observed in previous studies. **Methods** We applied crude and adjusted Cox proportional hazards models to compare disability durations by state and territory of residence. Confounders included factors known to influence disability duration. Durations were left-censored at two weeks and right-censored at 104 weeks. **Results** We analysed N=31,641 claims. In both crude and adjusted models, three of the seven states and territories significantly differed from the reference group, New South Wales. However, two of the three were different between crude and adjusted models. Regional effects were relatively small compared to other factors including insurer type, age, and type of injury. **Conclusions** Regional factors influence disability



duration, which persist with adjustment for demographic, work, insurer type, and injury confounders. However, the effects are inconsistently significant and fairly small, especially when compared to the effect of confounders and system effects found in previous studies. Regional factors likely only account for a small share of the difference in disability duration between compensation systems

Lebrasseur A, Fortin-Bedard N, Lettre J, Bussieres EL, Best K, Boucher N, et al. Impact of COVID-19 on people with physical disabilities: a rapid review. Disability and Health Journal. 2021; 14(1):101014.

<https://doi.org/10.1016/j.dhjo.2020.101014> [open access]

Abstract: BACKGROUND: The COVID-19 pandemic caused drastic changes in the lives of the general population. People with physical disabilities, who commonly encounter daily challenges such as barriers to community mobility, reduced access to healthcare services and higher risk of suffering from depression, may face additional challenges in the context of the pandemic. OBJECTIVE: This study aims to review the impact of the COVID-19 pandemic, and associated isolation and protective measures, among people with physical disabilities. METHODS: A rapid review of the published literature was conducted on August 10, 2020 through a search in six online databases to synthesize results from original studies regarding the impact of the COVID-19 pandemic on people with physical disabilities. The International Classification of Functioning, Disability and Health was used to describe the population and the personal and environmental factors with a unified and standard health language. RESULTS: Eleven records were extracted from 1621 individual papers retrieved from the search strategy. Various impacts on daily functioning such as a decrease in access to healthcare have been noted during the pandemic. Changes in social and lifestyle habits, mood changes and decreased levels of physical activity were also noted. CONCLUSIONS: Our results highlighted the lack of early research about the impacts of COVID-19 experienced by people with physical disabilities. Future studies should focus on specific consequences and needs of this vulnerable population to ensure their inclusion in public health recommendations and consideration by policy makers



McHugh M, French DD, Kwasny MM, Maechling CR, and Holl JL. The impact of shift work and long work hours on employers' health care costs. Journal of Occupational & Environmental Medicine. 2020; 62(12):1006-1010.

<https://doi.org/10.1097/JOM.0000000000001994> [open access]

Abstract: OBJECTIVE: To estimate the additional health care costs incurred by two U.S. manufacturing companies due to their policies related to shift work and long work hours. METHODS: We applied risk ratios from the published literature to data on 2647 workers from Company A and 1346 workers from Company B to estimate the excess cases of several chronic conditions in the worker population due to shift work and long work hours. We estimated the annual health care costs incurred by the companies by applying Medicare cost data. RESULTS: Excess annual health care costs related to shift work totaled \$1,394,365 and \$300,297 for Companies A and B, respectively. Excess annual costs related to long work hours totaled \$231,293 and \$107,902 for Companies A and B, respectively. CONCLUSIONS: Excess health care costs related to shift work and long work hours is substantial, but may not be large enough to compel companies to alter their work scheduling policies

Rezai R, SantaBarbara N, Almirol E, Shedd K, Terry E, Park M, et al. Efficacy and costs of a workplace wellness programme. Occupational Medicine. 2020; 70(9):649-655.

<https://doi.org/10.1093/occmed/kqaa189>

Abstract: BACKGROUND: Research investigating the efficacy of workplace wellness programmes to promote exercise, and by extension, reduce obesity and increase productivity has proliferated in recent years. Although preliminary work is encouraging, more work is needed. AIMS: To evaluate the effects and overall cost of a workplace exercise programme on multiple physical outcomes, including body mass index, aerobic fitness and muscular fitness. METHODS: Data from the Bruin Health Improvement Programme .5 (BHIP) between August 2013 and July 2018 were analysed. BHIP is a 12-week workplace wellness programme that assesses multiple areas of physical and mental health. For this study, changes in weight, waist-to-hip ratio, aerobic fitness and muscular endurance were analysed using paired samples t-tests and chi-squared tests. Using results from a prior analysis of Medical Expenditure Panel



Survey, the estimated medical expenditure savings associated with weight loss were also analysed. RESULTS: A total of 518 participants (84% female) took part in the BHIP programme (mean age = 41 years, SD = 1.17). There were significant decreases in all anthropometric indices and significant increases in all fitness outcomes ($P < 0.01$) from baseline to follow-up. Estimated programme cost per participant, per session was \$473 US Dollars (USD), and weight loss is estimated to reduce annual medical care costs by ~\$2200 USD. CONCLUSIONS: Results showed significant improvements in all physical outcomes of interest. Additionally, there appears to be an inverse relationship between improvements in employee health and employer healthcare costs. Strengths, limitations and future directions are discussed

Sundstrup E, Seeberg KGV, Bengtsen E, and Andersen LL. A systematic review of workplace interventions to rehabilitate musculoskeletal disorders among employees with physical demanding work. Journal of Occupational Rehabilitation. 2020; 30(4):588-612.

<https://doi.org/10.1007/s10926-020-09879-x> [open access]

Abstract: Purpose This systematic review investigates the effectiveness of workplace interventions to rehabilitate musculoskeletal disorders (MSDs) among employees with physically demanding work. Methods A systematic search was conducted in bibliographic databases including PubMed and Web of Science Core Collection for English articles published from 1998 to 2018. The PICO strategy guided the assessment of study relevance and the bibliographical search for randomized controlled trials (RCTs) and non-RCTs in which (1) participants were adult workers with physically demanding work and MSD (including specific and non-specific MSD and musculoskeletal pain, symptoms, and discomfort), (2) interventions were initiated and/or carried out at the workplace, (3) a comparison group was included, and (4) a measure of MSD was reported (including musculoskeletal pain, symptoms, prevalence or discomfort). The quality assessment and evidence synthesis adhered to the guidelines developed by the Institute for Work & Health (Toronto, Canada) focusing on developing practical recommendations for stakeholders. Relevant stakeholders were engaged in the review process. Results Level of evidence from 54



high and medium quality studies showed moderate evidence of a positive effect of physical exercise. Within this domain, there was strong evidence of a positive effect of workplace strength training. There was limited evidence for ergonomics and strong evidence for no benefit of participatory ergonomics, multifaceted interventions, and stress management. No intervention domains were associated with "negative effects". Conclusions The evidence synthesis recommends that implementing strength training at the workplace can reduce MSD among workers with physically demanding work. In regard to workplace ergonomics, there was not enough evidence from the scientific literature to guide current practices. Based on the scientific literature, participatory ergonomics and multifaceted workplace interventions seem to have no beneficial effect on reducing MSD among this group of workers. As these interventional domains were very heterogeneous, it should also be recognized that general conclusions about their effectiveness should be done with care. Systematic review registration PROSPERO CRD42018116752 (https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=116752)

Sweeney K, Mackey M, Spurway J, Clarke J, and Ginn K. The effectiveness of ergonomics interventions in reducing upper limb work-related musculoskeletal pain and dysfunction in sonographers, surgeons and dentists: a systematic review. *Ergonomics*. 2021; 64(1):1-38.

<https://doi.org/10.1080/00140139.2020.1811401>

Abstract: The aim of this systematic review was to summarise the effects of ergonomics interventions on work-related upper limb musculoskeletal pain and dysfunction, and on productivity in sonographers, surgeons and dentists. A total of 31 studies were included. All studies reported effects on upper limb pain. Nine studies reported effects on dysfunction and only two studies reported effects on productivity. Moderately strong evidence in reducing upper limb pain was found for instigation of microbreaks into long duration surgical procedures, and the use of wider, lighter handles in dental instruments. Moderate evidence was also found for use of prismatic glasses and favourable positioning in reducing upper limb pain. Weak, inconsistent or no evidence was found for all other ergonomics interventions in reducing upper limb pain and dysfunction and



increasing productivity. The lack of high quality research, particularly in sonographers and in the outcome of productivity, should be addressed. Practitioner summary: This systematic review investigates the effectiveness of ergonomics interventions on upper limb pain, dysfunction and productivity in sonographers, dentists and surgeons. Instigation of microbreaks during long duration procedures and the use of wider, lighter instrument handles were most effective in reducing upper limb work-related pain. Abbreviations: ANOVA: analysis of variance; CLS: conventional laparoscopic surgery; DMAIC: define, measure, analyze, improve and control; GRADE: grading of recommendations, assessment, development and evaluations; HD: high definition; PRISMA: preferred reporting items for systematic reviews and meta-analyses; PROSPERO: The International Prospective Register of Systematic Reviews; RCT: randomised control trial; SILS: single incision laparoscopic surgery; VITOM: video telescopic operative microscope; WNSWLHD: Western New South Wales Local Health District; WMSD: work related musculoskeletal disorder

Tang R, Kapellusch JM, Hegmann KT, Thiese MS, Wang I, and Merryweather AS. Evaluating different measures of low back pain among U.S. manual materials handling workers: comparisons of demographic, psychosocial, and job physical exposure. Human Factors. 2020; [epub ahead of print].

<https://doi.org/10.1177/0018720820971101>

Abstract: OBJECTIVE: To examine differences in demographic, psychosocial, and job physical exposure risk factors between multiple low back pain (LBP) outcomes in a prospective cohort of industrial workers. BACKGROUND: LBP remains a leading cause of lost industrial productivity. Different case definitions involving pain (general LBP), medication use (M-LBP), seeking healthcare (H-LBP), and lost time (L-LBP) are often used to study LBP outcomes. However, the relationship between these outcomes remains unclear. METHOD: Demographic, health status, psychosocial, and job physical exposure risk factors were quantified for 635 incident-eligible industrial workers. Incident cases of LBP outcomes and pain symptoms were quantified and compared across the four outcomes. RESULTS: Differences in age, gender, medical history, and LBP history were found between the four outcomes. Most incident-eligible



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workers (67%) suffered an LBP outcome during follow-up. Cases decreased from 420 for LBP (25.4 cases/100 person-years) to 303 for M-LBP (22.0 cases/100 person-years), to 151 for H-LBP (15.6 cases/100 person-years), and finally to 56 for L-LBP (8.7 cases/100 person-years). Conversely, pain intensity and duration increased from LBP to H-LBP. However, pain duration was relatively lower for L-LBP than for H-LBP. CONCLUSION: Patterns of cases, pain intensity, and pain duration suggest the influence of the four outcomes. However, few differences in apparent risk factors were observed between the outcomes. Further research is needed to establish consistent case definitions. APPLICATION: Knowledge of patterns between different LBP outcomes can improve interpretation of research and guide future research and intervention studies in industry

Tornroos M, Salin D, and Magnusson Hanson L. High-involvement work practices and conflict management procedures as moderators of the workplace bullying-wellbeing relationship. *Work and Stress*. 2020; 34(4):386-405.

<https://doi.org/10.1080/02678373.2020.1801887>

Yuan Z, Ye Z, and Zhong M. Plug back into work, safely: job reattachment, leader safety commitment, and job engagement in the COVID-19 pandemic. *Journal of Applied Psychology*. 2021; 106(1):62-70.

<https://doi.org/10.1037/apl0000860>

Abstract: With many employees returning to work after lockdowns and quarantines in the current COVID-19 pandemic, research that seeks to identify effective ways to help them regain focus at work is warranted. However, the small body of applied psychology literature on large-scale disruptive events has paid insufficient attention to this important topic. Further, different from acute events (e.g., disasters), the ongoing pandemic poses an additional challenge for organizations as they seek to effectively protect employees' job engagement from health and safety threats in the workplace. To address these gaps, we drew from job reattachment research and investigated it as an important antecedent of job engagement for employees returning to work. Moreover, we incorporated leader safety commitment as a moderator that can strengthen the effectiveness of job reattachment in enhancing job engagement. We



further linked engagement to work withdrawal, use of personal protective equipment (e.g., wearing a mask), and task performance to underscore the downstream implications of job reattachment. To test our research model, we collected multiwave, multisource data from the original epicenter of the COVID-19 pandemic-Wuhan, China-where many employees were returning to work. The results provide strong support for our model. In addition to extending research on large-scale disruptive events, the current study has important implications for organizations and employees in the COVID-19 pandemic. (PsycInfo Database Record (c) 2021 APA, all rights reserved)

*IWH Authored publications.