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February 21, 2020

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***Peters CE, Bogaert L, Latifovic L, Kachuri L, Harris SA, Parent ME, et al. Exposure to crystalline silica in Canadian workplaces and the risk of kidney cancer. *Occupational and Environmental Medicine*. 2019; 76(9):668-671.**

<https://doi.org/10.1136/oemed-2019-105870>

Abstract: OBJECTIVES: The causes of kidney cancer are not well understood though occupational exposures are thought to play a role. Crystalline silica is a known human carcinogen, and despite previous links with kidney disease, there have been few studies investigating its association with kidney cancer. We addressed this research gap using a population-based case-control study of Canadian men.

METHODS: Questionnaire data were obtained from individuals with histologically confirmed kidney cancer, and population-based controls recruited from eight Canadian provinces (1994-1997). An industrial hygienist characterised participants' lifetime occupational exposure, and their confidence in the assessment (possibly, probably or definitely exposed) to silica on three dimensions (intensity, frequency and duration), and cumulative exposure was estimated. Logistic regression was used to estimate ORs and 95% CIs, adjusting for potential confounders. **RESULTS:** Nearly half of the 689 kidney cancer cases (49%) and 2369 controls (44%) had ever been

occupationally exposed to crystalline silica. In a fully adjusted model, workers ever-exposed to silica had a slightly increased risk of kidney cancer relative to those who were unexposed (OR 1.10, 95% CI 0.92 to 1.32). Odds were modestly (and generally not statistically significantly) increased for models with duration of exposure and cumulative exposure, though exposure-response relationships were not evident. **CONCLUSIONS:** Our findings do not provide evidence that occupational exposure to crystalline silica increases risk of kidney cancer in men

Awsumb JM, Balcazar F, and Keel JM. Youth with disabilities: are vocational rehabilitation services improving employment outcomes? Journal of Vocational Rehabilitation. 2020; 52(1):61-73.

<https://doi.org/10.3233/JVR-191060>

Choe S and Leite F. Transforming inherent safety risk in the construction industry: a safety risk generation and control model. Safety Science. 2020; 124:104594.

<https://doi.org/10.1016/j.ssci.2019.104594>

Connolly J, Reid G, Knoll M, Halliday W, and Windsor S. The sustainability of knowledge brokerage of the mental health improvement outcomes framework in Scotland: a follow-up analysis. Evidence & Policy. 2020; 16(1):177-195.

<https://doi.org/10.1332/174426418X15193815997735>

Gusenbauer M and Haddaway NR. Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 other resources. Research Synthesis Methods. 2020; [Epub ahead of print].

<https://doi.org/10.1002/jrsm.1378> [open access]

Abstract: Rigorous evidence identification is essential for systematic reviews and meta-analyses (evidence syntheses) because the sample selection of relevant studies determines a review's outcome, validity, and explanatory power. Yet, the search systems allowing access to this evidence provide varying levels of precision, recall, and reproducibility and also demand different levels of effort. To date, it remains unclear which search systems are most appropriate for

evidence synthesis and why. Advice on which search engines and bibliographic databases to choose for systematic searches is limited and lacking systematic, empirical performance assessments. This study investigates and compares the systematic search qualities of 28 widely used academic search systems, including Google Scholar, PubMed, and Web of Science. A novel, query-based method tests how well users are able to interact and retrieve records with each system. The study is the first to show the extent to which search systems can effectively and efficiently perform (Boolean) searches with regards to precision, recall, and reproducibility. We found substantial differences in the performance of search systems, meaning that their usability in systematic searches varies. Indeed, only half of the search systems analyzed and only a few Open Access databases can be recommended for evidence syntheses without adding substantial caveats. Particularly, our findings demonstrate why Google Scholar is inappropriate as principal search system. We call for database owners to recognize the requirements of evidence synthesis and for academic journals to reassess quality requirements for systematic reviews. Our findings aim to support researchers in conducting better searches for better evidence synthesis

Huang Z and Friedman LS. Occupational injury surveillance pyramid description and association of medical care utilization with low income among work-related injuries. American Journal of Industrial Medicine. 2020; 63(3):249-257.

<https://doi.org/10.1002/ajim.23075>

Abstract: BACKGROUND: A more comprehensive characterization of total work-related injury burden would ideally include all levels of medical care. Additionally, studies have suggested differential utilization of medical care among various socioeconomic groups, and it is unclear how this translates to work-related injuries. METHODS: The 2004-2016 National Health Interview Survey data were used to estimate all levels of care utilized by the individual for each injury episode. A multivariable logistic regression model based on 2004-2014 data was developed to investigate the relationship of low income and level of medical care used by the injured worker. RESULTS: Around 53.1% of occupational injury were exclusively treated outside of a hospital setting and never captured by

hospital/emergency department data systems, which comprises 40% (3.0 million) of total missed days of work and 44% (\$452 million) of total cost of lost productivity among full-time workers. Patients with work-related injuries are less likely to stay overnight in hospital compared with those with nonwork-related injuries (adjusted odds ratio [aOR]: 0.6, 95% confidence interval [CI]: 0.5-0.7), however among work-related injuries, low-income patients are more likely to use medical care in a hospital setting compared with patients with income higher than poverty threshold (hospitalization: aOR: 1.9, 95% CI: 1.1-3.3; emergency room: aOR: 1.5, 95% CI: 1.1-2.0).

CONCLUSIONS: These "minor work-related injuries" exclusively treated outside hospital tend to be ignored when defining national injury prevention priorities, but this analysis indicates that such an approach fails to capture a large portion of injuries significant enough to result in missed days of work and cost of lost productivity

Hunefeld L, Gerstenberg S, and Huffmeier J. Job satisfaction and mental health of temporary agency workers in Europe: a systematic review and research agenda. *Work and Stress*. 2020; 34(1):82-110.

<https://doi.org/10.1080/02678373.2019.1567619> [open access]

Mather L, Ropponen A, Mittendorfer-Rutz E, Narusyte J, and Svedberg P. Health, work and demographic factors associated with a lower risk of work disability and unemployment in employees with lower back, neck and shoulder pain. *BMC Musculoskeletal Disorders*. 2019; 20(1):622.

<https://doi.org/10.1186/s12891-019-2999-9> [open access]

Abstract: **BACKGROUND:** Chronic musculoskeletal pain affects over 20% of the adult population and is one of the most common reasons for sick leave in Sweden. The aim of this study was to investigate which demographic, health and psychosocial work environment factors are of importance for a lower risk of future work disability and unemployment among workers with low back pain (LBP) and/or neck shoulder pain (NSP), and if familial factors influence these associations. **METHODS:** All 5556 persons that reported having LBP and/or NSP in a web-based questionnaire study in 2004-2006 were included. They were followed up for work disability (sick leave > 90 days or disability pension), and unemployment (> 180 days in a year)

until 31 December 2013. Hazard ratios (HR) with 95% confidence intervals were calculated using cox proportional hazard models of the whole sample, adjusting for covariates. In addition, co-twin analyses of outcome discordant twin pairs were conducted to assess the impact of familial confounding on the associations. RESULTS: Being male, 19-28 years old, having higher education, only NSP, no history of depression or anxiety, good self-rated health, low job demands and high job control were associated with a lower risk of work disability (adjusted HR ranging between 0.29-0.85). No history of anxiety and depression and high job control was associated with a lower risk of unemployment (adjusted HR ranging from 0.53 and 0.67). Familial factors were found to affect the association between education and work disability, but none of the other associations investigated. CONCLUSIONS: Among those with LBP or NSP, good health in terms of mental- and self-rated health, few pain sites, as well as good psychosocial working conditions seem to indicate a lower risk for work disability

van der Molen HF, Marsili C, Vitali A, and Colosio C. Trends in occupational diseases in the Italian agricultural sector, 2004-2017. Occupational and Environmental Medicine. 2020; [Epub ahead of print].

<https://doi.org/10.1136/oemed-2019-106168> [open access]

Abstract: OBJECTIVE: To estimate the incidence of, trends in and effect of change in reporting rules on occupational diseases (ODs) in the Italian agricultural sector. METHODS: Over a 14-year period (2004-2017), ODs among Italian agricultural workers were diagnosed by physicians and reported to the National Institute for Insurance against Workplace Accidents and Occupational Diseases. OD was defined as a disease with a specific clinical diagnosis (International Classification of Diseases) and was predominantly caused by work-related factors. Trends in incidence and effects of changed eligibility criteria for reporting occupational musculoskeletal disorders (MSDs) and noise-induced hearing loss (NIHL) were estimated using a Poisson regression model. RESULTS: In 2017, the incidence of all ODs was 1295 per 100 000 agricultural workers. MSDs (961 per 100 000 workers) were the most frequently occurring ODs. MSDs and NIHL showed statistically significant increasing time trends, 26% and 7% annual increase, respectively, during the 2004-2017 period.

There was no statistically significant change in the incidence of occupational respiratory, skin and cancer diseases during the 14-year period. After changes in reporting rules, the incidence of MSDs showed an immediate increased effect, with an incidence rate ratio (IRR) of 2.9 (95% CI 2.65 to 3.14) and a significant annual decreasing trend of -9% (95% CI -6% to -12%) over the years after the changed reporting rules (from 2008 to 2017), and an immediate effect on NIHL with an IRR of 1.3 (95% CI 1.13 to 1.53).

CONCLUSION: In total, 1.3% of the Italian agricultural workers were diagnosed in 2017 as having an OD. Over a 14-year period, the annual incidence of ODs showed a considerable increasing trend consistent with changed eligibility reporting criteria for occupational MSDs and to a lesser extent for NIHL

Mols F, Bell J, and Head B. Bridging the research-policy gap: the importance of effective identity leadership and shared commitment. Evidence & Policy. 2020; 16(1):145-163.

<https://doi.org/10.1332/174426418X15378681300533>

Monteiro GP, Hopkins A, and Frutuoso e Melo PF. How do organizational structures impact operational safety? Part 1: understanding the dangers of decentralization. Safety Science. 2020; 123:104568.

<https://doi.org/10.1016/j.ssci.2019.104568>

Related Article

Monteiro GP, Hopkins A, and Frutuoso e Melo PF. How do organizational structures impact operational safety? Part 2: designing structures that strengthen safety. Safety Science. 2020; 123:104534.

<https://doi.org/10.1016/j.ssci.2019.104534>

Nielsen MB, Christensen JO, Finne LB, and Knardahl S. Workplace bullying, mental distress, and sickness absence: the protective role of social support. International Archives of Occupational & Environmental Health. 2020; 93(1):43-53.

<https://doi.org/10.1007/s00420-019-01463-y>

Abstract: PURPOSE: This study examined the protective effects of supervisor, colleague, and non-work-related social support on the

associations between workplace bullying, mental distress, and medically certified sickness absence. We hypothesized that social support moderated the direct association between workplace bullying and mental distress as well as the indirect association between bullying and sickness absence through mental distress. We also hypothesized that the protective effects of social support were stronger among women than among men. **METHODS:** A sample of 10,627 employees was recruited from 96 Norwegian organizations. Workplace bullying, mental distress, and social support were assessed through a questionnaire survey and responses were linked to official registry data on medically certified sickness absence for the year following the survey assessment. **RESULTS:** The results showed that all three investigated sources of social support moderated the direct association between workplace bullying and mental distress. Supervisor support moderated the indirect association between workplace bullying and sickness absence through mental distress among both male and female respondents, whereas colleague support moderated this indirect association among women only. Non-work-related support had no protective effect on the indirect association. **CONCLUSIONS:** The findings suggest that social support, and especially supervisor support, is beneficial with regard to reducing the negative impact of workplace bullying on health and work ability of those exposed. Organizations should, therefore, include social support in interventions targeting bullying

Oestergaard LG, Christensen FB, Bungner CE, Sogaard R, Holm R, Helmig P, et al. Does adding case management to standard rehabilitation affect functional ability, pain, or the rate of return to work after lumbar spinal fusion? A randomized controlled trial with two-year follow-up. *Clinical Rehabilitation*. 2020; 34(3):357-368.

<https://doi.org/10.1177/0269215519897106>

Abstract: **OBJECTIVE:** To examine the effect of a case manager-assisted rehabilitation programme as an add-on to usual physical rehabilitation in patients undergoing lumbar spinal fusion. **DESIGN:** A randomized controlled trial with a two-year follow-up. **SETTINGS:** Outpatient clinics of a university hospital and a general hospital. **SUBJECTS:** In total, 82 patients undergoing lumbar spinal fusion.

INTERVENTIONS: The patients were randomized one-to-one to case manager-assisted rehabilitation (case manager group) or no case manager-assisted rehabilitation (control group). Both groups received usual physical rehabilitation. The case manager-assisted rehabilitation programme included a preoperative meeting with a case manager to determine a rehabilitation plan, postsurgical meetings, phone meetings, and voluntary workplace visits or roundtable meetings. **MAIN MEASURES:** Primary outcome was the Oswestry Disability Index. Secondary outcomes were back pain, leg pain, and return to work. **RESULTS:** Of the 41 patients in the case manager group, 49% were men, with the mean age of 46.1 (+/-8.7 years). In the control group, 51% were male, with the mean age of 47.4 (+/-8.9 years). No statistically significant between-group differences were found regarding any outcomes. An overall group effect of 4.1 points (95% confidence interval (CI): -1.8; 9.9) was found on the Oswestry Disability Index, favouring the control group. After two years, the relative risk of return to work was 1.18 (95% CI: 0.8; 1.7), favouring the case manager group. **CONCLUSION:** The case manager-assisted rehabilitation programme had no effect on the patients' functional disability or back and leg pain compared to usual physical rehabilitation. The study lacked power to evaluate the impact on return to work

Petitta L and Jiang L. How emotional contagion relates to burnout: a moderated mediation model of job insecurity and group member prototypicality. International Journal of Stress Management. 2020; 27(1):12-22.

<https://doi.org/10.1037/str0000134>

Renaud LR, Jelsma JGM, Huysmans MA, van Nassau F, Lakerveld J, Spekle EM, et al. Effectiveness of the multi-component dynamic work intervention to reduce sitting time in office workers: results from a pragmatic cluster randomised controlled trial. Applied Ergonomics. 2020; 84:103027.

<https://doi.org/10.1016/j.apergo.2019.103027>

Abstract: **OBJECTIVE:** Prolonged sitting, which is highly prevalent in office workers, has been associated with several health risks. The aim of this study was to evaluate the Dynamic Work intervention by determining its effect on total sitting time at the 8-month follow-up in

comparison to the control. **METHODS:** This two-arm pragmatic cluster randomised controlled trial included 244 office workers from 14 different departments of a large, Dutch insurance company. The Dynamic Work intervention was a real-life, worksite intervention that included environmental components (i.e. sit-stand workstations), organisational components (i.e. group sessions), and individual components (e.g. activity/sitting trackers). Outcomes were assessed at baseline, 4-month follow-up, and 8-month follow-up. The primary outcome was total sitting time per day, objectively assessed using the activPAL activity monitor at 8-month follow-up. Secondary outcomes included other total and occupational movement behaviour outcomes, health-related outcomes, and work-related outcomes. Data analyses were performed using linear and logistic mixed models. **RESULTS:** Total sitting time did not differ between the intervention and control group at the 8-month follow-up. Secondary outcomes also showed no difference between the intervention and control group at either the 4-month or at 8-month follow-up, with the exception of number of occupational steps, which showed a statistically significant effect at 4-month follow-up (but not at 8-month follow-up) of 913 (95% CI = 381-1445) steps/8-h working day. **CONCLUSIONS:** This study evaluated the effectiveness of a real-life worksite intervention to reduce sitting time and showed little to no effect. This may be due to the relatively low intensity of the intervention, i.e. that it only involved the replacement of 25% of sitting workstations with sit-stand workstations. Future research should focus on the evaluation of more intensive real-life worksite interventions that are still feasible for implementation in daily practice. **CLINICALTRIALS. GOV, REGISTRATION NUMBER: NCT03115645**

Sato K, Kuroda S, and Owan H. Mental health effects of long work hours, night and weekend work, and short rest periods. *Social Science & Medicine*. 2020; 246:112774.

<https://doi.org/10.1016/j.socscimed.2019.112774> [open access]

Abstract: Although the prior literature has examined the relationship between work schedule characteristics and worker mental health, establishing the causal effect of work schedule characteristics is challenging because of endogeneity issues. This paper investigates how various work schedule characteristics affect workers' mental health using employee surveys and actual working hours recorded

over seventeen months in a Japanese manufacturing company. Our sample includes 1334 white-collar workers and 786 blue-collar workers observed from 2015 to 2016. Our major findings are as follows: long working hours cause the mental health of white-collar workers to deteriorate even after controlling for individual fixed effects. Furthermore, working on weekends is associated with mental ill health-the negative effect of an hour increase in weekend work is one and a half to two times larger than that of weekday overtime work for white-collar workers. On the other hand, short rest periods are not associated with mental health for them. Our results indicate that taking a relatively long rest period on weekends is more important for keeping white-collar workers healthy than ensuring a sufficient daily rest period. Regarding blue-collar workers, our analysis reveals that working after midnight is associated with mental ill health, whereas short rest periods are not associated with their mental health. This suggests that the strain of night work is a more important determinant of mental health for blue-collar workers. The differences in the relationship between work schedule characteristics and workers' mental health for white-collar and blue-collar workers can be explained in terms of different work styles, different expectations, and different degrees of selection. We conclude that working for long hours or irregular hours deteriorates the mental health of workers but its impact is likely to differ significantly across job types

Vinstrup J, Jakobsen MD, and Andersen LL. Poor sleep is a risk factor for low-back pain among healthcare workers: prospective cohort study. *International Journal of Environmental Research and Public Health*. 2020; 17(3):E996.

<https://doi.org/10.3390/ijerph17030996> [open access]

Abstract: This study aimed to investigate the association between poor sleep and risk of low-back pain (LBP) in healthcare workers. Using a prospective cohort design with 1-year follow-up, a total of 1955 healthcare workers (60% nurses) from 389 departments at 19 hospitals responded to questionnaires containing items related to lifestyle, health, and working environment. Associations between sleep scores (0-100) at baseline and LBP intensity (0-10) at follow-up were modelled using cumulative logistic regression accounting for clustering at the department level and adjusted for lifestyle and psychosocial confounders. In the full population of healthcare

workers, 43.9% and 24.4% experienced moderate and poor sleep, respectively. In the fully adjusted model with good sleep as reference, moderate, and poor sleep increased the risk of LBP at follow-up, with odds ratios (OR's) of 1.66 (95% confidence interval (CI) 1.35-2.04) and 2.05 (95% CI 1.57-2.69), respectively. Three sensitivity analyses including healthcare workers free from LBP, nurses, and nurses free from LBP at baseline, respectively, yielded similar results. In conclusion, poor sleep constitutes a potent risk factor for LBP among healthcare workers. The presented results provide strong incentives to evaluate and weigh current prevention policies against an updated biopsychosocial framework

*IWH authored publication.