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Journal articles marked with an asterisk indicate an IWH scientist or adjunct scientist is included in the list of authors.

Adamopoulos I, Syrou N, Lamnisis D, and Boustras G. Cross-sectional nationwide study in occupational safety & health: inspection of job risks context, burn out syndrome and job satisfaction of public health Inspectors in the period of the COVID-19 pandemic in Greece. *Safety Science*. 2023; 158:105960.

<https://doi.org/10.1016/j.ssci.2022.105960>

Beach J, Galarneau JM, and Cherry N. Flour exposure, sensitization and respiratory health among Alberta trainee bakers. *Occupational Medicine*. 2022; 72(8):559-565.

<https://doi.org/10.1093/occmed/kqac101>

Abstract: BACKGROUND: Sensitization to allergens encountered in baking, and allergic disease including asthma and rhinitis, is recognized. Attempts to reduce this risk have been instituted in some workplaces, but awareness remains low. This study aimed to quantify the current risk among Alberta bakers. AIMS: To estimate the onset of sensitization to bakery allergens and allergic disease among trainee bakers at the outset of their career. METHODS: Trainees attending one of the two bakery programmes were recruited between 2015 and 2018. At entry, an interview was held and spirometry and skin prick tests were performed. Participants were contacted every 6 months by telephone or online interview for 3 years to update work and health information. An exit interview was completed between 2018 and 2019 for all who could be contacted. Exposure was estimated using collected work history and a job exposure matrix was prepared for this study. RESULTS: A total of 220 individuals participated in the entry interview, 204 completed one or more periodic interviews and 113

completed the exit interview. Six who completed exit testing developed new sensitization to bakery antigens, an incidence of 2.49/100 person-years. Positive skin prick tests for bakery antigens were associated with bread making. Rhinitis symptoms were associated with total flour dust and new-onset rhinitis to months in trade. New-onset asthma was related to cumulative exposure to flour improvers. CONCLUSIONS: Trainee bakers in Alberta remain at risk of sensitization and occupational respiratory disease

Bauerle TJ, Sammarco JJ, Dugdale ZJ, and Dawson D. The human factors of mineworker fatigue: an overview on prevalence, mitigation, and what's next. American Journal of Industrial Medicine. 2022; 65(11):832-839.

<https://doi.org/10.1002/ajim.23301> [open access]

Abstract: BACKGROUND: Though mining remains a vital shiftwork industry for U.S. commerce, problems of continued prevalence of mineworker fatigue and its mitigation persist. Publications and reports on fatigue in mining appear to be rich and diverse, yet variable and remote, much like the industry itself. METHODS: The authors engaged in a brief nonexhaustive overview of the literature on sleep and fatigue among mineworking populations. RESULTS: This overview covers: potential sources of fatigue unique to mine work (e.g., monotonous and disengaging Work Tasks, underground environments and light exposure, remote work operations); evaluation of mitigation strategies for mineworker fatigue or working hours (e.g., shift-scheduling and training); and areas for future research and practice (e.g., fatigue risk management systems in mining, mineworker sleep and fatigue surveillance, lighting interventions, and automation). CONCLUSIONS: Fatigue continues to be a critical challenge for the mining industry. While research on the problems and solutions of mineworker fatigue has been limited to date, the future of fatigue research in mining can expand these findings by exploring the origins, nature, and outcomes of fatigue using advancements in lighting, automation, and fatigue risk management

Related Articles

Elliott KC, Lincoln JM, Flynn MA, Levin JL, Smidt M, Dzugan J, et al. Working hours, sleep, and fatigue in the agriculture, forestry, and fishing sector: a scoping review. American Journal of Industrial Medicine. 2022; 65(11):898-912.

<https://doi.org/10.1002/ajim.23418>

Abstract: INTRODUCTION: Agriculture, forestry, and fishing industry (AgFF) workers often work extremely long hours during peak production seasons, resulting in sleep deprivation and fatigue. The National Occupational Research Agenda has classified fatigue as a "significant safety issue" and area of concern for many industry sectors, including AgFF. This review explores current research and practice in AgFF and proposes next steps. METHODS: We conducted a scoping literature review to examine the extent and nature of research in this area. Article inclusion criteria included peer-reviewed journal articles written in English; published after 1989; covering AgFF

workers in high-income countries; with data on working hours/schedules and sleep related to safety and health. RESULTS: Limited research has addressed long hours and sleep deprivation among AgFF workers. We identified 8350 articles for title and abstract review. Among those, 407 underwent full-text review and 96 met all inclusion criteria (67% agriculture, 25% fishing/seafood processing, 8% forestry). The literature provided some evidence fatigue contributes to fatalities, injuries, and illnesses in AgFF. Older, new, young, foreign-born, and female workers, as well as those who work in small organizations or longer hours (40+) may be at higher risk for fatigue-related injury and illness. Few studies have developed or evaluated interventions to control risks. DISCUSSION: Given that fatigue is a factor in injury and illness for this sector, future AgFF surveillance and research should increase efforts to capture fatigue and sleep data, directly investigate the role of long hours and nonstandard work schedules in the sector, and most importantly, create practical interventions to manage fatigue

Hagan-Haynes K, Pratt S, Lerman S, Wong I, Baker A, Flower D, et al. US research needs related to fatigue, sleep, and working hours among oil and gas extraction workers. American Journal of Industrial Medicine. 2022; 65(11):840-856.

<https://doi.org/10.1002/ajim.23310>

Abstract: BACKGROUND: During 2003-2013, 1189 US oil and gas extraction (OGE) workers died while working, resulting in an average annual workplace fatality rate seven times that for all US workers. OGE work commonly involves long hours, shiftwork, irregular schedules, and long commutes, but effects of these factors on fatigue, occupational injury, and illness in OGE are largely unknown. METHODS: A scoping review of relevant OGE research during 2000-2019 was completed and supplemented by input from a NIOSH-sponsored Forum. RESULTS: Seventy-eight papers were identified; 76% reported only offshore research. Five themes for research needs emerged: build knowledge about the impacts of fatigue; explore interactions between on- and off-the-job risk factors; identify and evaluate interventions; assess effectiveness of technology; and increase the diffusion of fatigue risk management information. CONCLUSIONS: Further collaboration between researchers and OGE operators and contractors can lead to action-oriented recommendations to mitigate the effects of fatigue, inadequate sleep, and shiftwork

Sieber WK, Chen GX, Krueger GP, Lincoln JE, Menendez CC, and O'Connor MB. Research gaps and needs for preventing worker fatigue in the transportation and utilities industries. American Journal of Industrial Medicine. 2022; 65(11):857-866.

<https://doi.org/10.1002/ajim.23346>

Abstract: BACKGROUND: The transportation and utilities industries include establishments engaged in the movement of passengers and freight, or the provision of public power, water, and other services. Along with the warehousing industry, they

make up the US National Occupational Research Agenda's Transportation, Warehousing and Utilities (TWU) industry sector. In 2018 the sector composed 5% of the US workforce, with approximately 8 million workers. TWU workers experienced 19% of all fatalities among U.S. workers in 2018 and 7% of total occupational injuries and illnesses. METHODS: Around-the-clock operations, heavy workloads, long and irregular shifts, complicated schedules, and time pressures characterize work across the US TWU sector. However, there are considerable differences in worker priorities and concerns between TWU industries. Major areas of concern within the sector include disparities in work schedules; required training for employee fatigue awareness and prevention; physical and mental job demands; and safety culture. RESULTS: Strategies for fatigue mitigation are critical to reduce the prevalence of injuries, safety-critical events, and crashes in TWU workers. Further research on the incidence and characterization of fatigue among TWU workers will guide the development of effective mitigation strategies. The influence of work scheduling on missed sleep opportunities and disrupted circadian rhythms should be determined. Evaluation of fatigue mitigation strategies can lead to the adoption of the most effective ones for each TWU industry. CONCLUSION: Implementation of effective strategies is critical for the health, safety, wellbeing, and productivity of workers in the TWU sector

Wong I and Swanson N. Approaches to managing work-related fatigue to meet the needs of American workers and employers. American Journal of Industrial Medicine. 2022; 65(11):827-831.

<https://doi.org/10.1002/ajim.23402>

Abstract: On September 13-14, 2019, the National Institute for Occupational Safety and Health (NIOSH) hosted a national forum entitled "Working hours, sleep and fatigue: Meeting the needs of American workers and employers." The purpose of this inaugural meeting was to discuss current evidence about the broad-based risks and effective countermeasures related to working hours, sleep, and fatigue, with further considerations to tailor solutions for specific industries and worker populations. We aimed to identify the knowledge gaps and needs in this area and future directions for research. We also sought to identify similarities across industries with the goal of sharing lessons learned and successful mitigation strategies across sectors. Participants included an international representation of academics, scientists, government representatives, policymakers, industry leaders, occupational health and safety professionals, and labor representatives. A total of eight manuscripts were developed following stakeholder comments and forum discussions. Six focused on sector-specific approaches (i.e., Agriculture, Forestry & Fishing; Healthcare & Social Assistance; Mining; Oil and Gas Extraction; Public Safety; Transportation, Warehousing & Utilities) to identify unique factors for fatigue-risk and effective countermeasures. Two additional manuscripts addressed topic areas that cut across

all industries (disproportionate risks, and economic evaluation). Findings from the Forum highlight that the identification of common risk factors across sectors allows for transfer of information, such as evidence for effective mitigation strategies, from sectors where fatigue risk has been more widely studied to those sectors where it has been less so. Further considerations should be made to improve knowledge translation activities by incorporating different languages and modes of dissemination such that information is accessible for all workers. Additionally, while economic evaluation can be an important decision-making tool for organizational- and policy-level activities, multi-disciplinary approaches combining epidemiology and economics are needed to provide a more balanced approach to economic evaluation with considerations for societal impacts. Although fatigue risk management must be tailored to fit industries, organizations, and individuals, knowledge gained in this forum can be leveraged, modified, and adapted to address these variabilities. Our hope is to continue sharing lessons learned to encourage future innovative, multi-disciplinary, cross-industry collaborations that will meet the needs of workers and employers to mitigate the risks and losses related to workplace fatigue.

Degeneffe CE, Tucker M, Ross M, and Umucu E. The influence of state-level contextual factors on state/federal system vocational rehabilitation employment outcomes for persons with traumatic brain injury. *Rehabilitation Counseling Bulletin*. 2023; 66(2):83-99. <https://doi.org/10.1177/00343552211067576>

Fritz H, Jones R, and Cutchin MP. Health management occupations during COVID-19: experiences of older African Americans with multimorbidity. *OTJR: Occupation, Participation and Health*. 2023; 43(1):90-97. <https://doi.org/10.1177/15394492211068214>

Abstract: Older African Americans with multimorbidity are at an especially high risk of adverse outcomes due to synergistic risks conferred by age, chronic disease burden and social determinants of health. Chronic condition self-management is one way older African Americans can use health management occupations and exercise agency to reduce their risk of becoming severely ill, and during the ongoing pandemic, of COVID-19 infection. The objective of this study was to understand how the COVID-19 pandemic shaped health management occupations of older African Americans. In-depth qualitative interviews were conducted with 30 African Americans aged 65 and older who reported having two or more chronic conditions. Data were analyzed using thematic analysis. Data suggest how key health management occupations (accessing care; managing medications, nutrition, and physical activity; and social and emotional health promotion and maintenance) were utilized and also shaped by the pandemic. Another key finding was perceived benefits of the pandemic on health and well-being

Galarneau JM, Beach J, and Cherry N. Urinary metals as a marker of exposure in men and women in the welding and electrical trades: a Canadian cohort study. *Annals of Work Exposures and Health*. 2022; 66(9):1111-1121.

<https://doi.org/10.1093/annweh/wxac005> [open access]

Abstract: Objectives: Men and women working in the welding trades undergo the same apprenticeship training but it is unknown whether, once in the trade, their exposures differ. Comparison of urinary metal concentrations, having adjusted for estimated airborne exposure, may provide an answer. Methods: Men and women were recruited to a cohort study of workers in the welding and electrical trades (the Workers Health in Apprenticeship Trades-Metal working and Electrical [WHAT-ME study]). They completed a recruitment questionnaire and further questionnaires every 6 months for up to 5 years. At each follow-up, they gave details on employment and, if welding, answered trade-specific questionnaires. Urine samples were collected by mail. Welding exposure matrices were developed to estimate metal exposures from welding process, base metal, and consumables. Urinary metal concentrations, determined by ICP-MS, were compared by trade (welding or electrical). Within welding, the relation of urinary concentrations to estimated airborne exposure was examined, with adjustment for potential confounders including sex, use of respiratory protective equipment (RPE), and time spent outdoors. Natural logarithms were taken of exposure estimates and urinary concentrations, to reduce skew. All regression analyses included creatinine concentration. Results: Urinary metal concentrations were analysed for 12 metals in 794 samples. Antimony, arsenic, lead, and mercury had a high proportion of samples with no metal detected and were not considered further. The urinary concentrations of aluminum, cadmium, chromium, cobalt, copper, manganese, nickel, and zinc were compared for welders (434 samples) and electrical workers (360). After adjustment for potential confounders, welders had higher urinary concentrations for aluminum ($\beta = 0.13$ 95%CI 0.03-0.24) and chromium ($\beta = 0.66$ 95%CI 0.55-0.77). Of 434 welder urines, 334 could be matched securely to detailed information about the most recent day welding. For these, an estimate of airborne exposure was made for aluminum, chromium, manganese, and nickel. Male welders were estimated to have higher airborne exposure to chromium and nickel than women welders. No difference was seen in the estimated exposures for aluminum or manganese (or total dust). Regression analyses of the relation of urinary metals to estimated exposure showed a good concordance for aluminum ($\beta = 0.09$ 95%CI 0.04-0.15 ($P < 0.001$)) and chromium ($\beta = 0.11$ 95%CI 0.05-0.17 $P < 0.001$). The concordance for manganese and nickel was positive, but much weaker. Urinary concentrations of aluminum and nickel were somewhat lower with increasing time wearing RPE and, for chromium and nickel, with time working outdoors. Having adjusted for estimated exposure, creatinine and other confounders, male welders had lower urine concentrations of aluminum ($\beta = -0.35$ 95%CI -0.51 to -0.19 $P < 0.001$) chromium ($\beta = -0.38$ 95%CI -0.57 to -0.19 $P < 0.001$) and manganese ($\beta = -0.36$ 95%CI -0.49 to -0.23 $P < 0.001$) than female welders. Conclusion: Welders had higher urinary concentrations of aluminum and chromium than electrical workers. Exposure estimates of aluminum and chromium for welders were a valid

representation of the airborne exposures to these metals. Although male welders were estimated to have higher exposures of chrome and nickel than female welders, the higher urinary metal concentrations in women welders is of concern, particularly for women who may conceive while in the trade.

Gronlund A and Oun I. A more equal deal? Employer-employee flexibility, gender and parents' work-family tensions in Sweden. *Work*. 2022; 73(3):843-856.

<https://doi.org/10.3233/WOR-210668> [open access]

Abstract: Background: The potential of flexible scheduling to alleviate work-family tensions and replace female part-time work has not been thoroughly explored. Specifically, research has not acknowledged that employees' schedule control may be conditioned by organizational demands for availability and commitment. Objective: We examine the links between flexibility and gendered patterns of work-family reconciliation by considering how work arrangements balance employer demands and employee control and how they relate to work-family tensions. Methods: Using mixed-methods, we combine a survey of Swedish parents (n = 2320) with interviews of survey respondents (n = 40). First, we identify clusters of flexible work arrangements and explore differences between mothers and fathers. Second, we analyze the relationship between flexible work arrangements and work-family tensions. Finally, the qualitative data are used to explore how flexibility/lack of flexibility enter into parents' work-family tensions and negotiations. Results: Three types of flexible work arrangements are found. Boundaryless jobs, which combine high levels of control with high requirements for organizational flexibility, are more common among fathers and highly educated. Confined jobs have low levels of both employee- and employer-oriented flexibility, but high demands, and are common among mothers and in female-dominated workplaces. Despite higher levels of control, boundaryless jobs are not associated with less work-family conflict. In malleable jobs, control is relatively high and demands low and work-family tensions are less noticeable. Conclusions: Employer- and employee-oriented flexibility go hand in hand, but work arrangements differ radically between groups. High flexibility does not alleviate work-family tensions, and part-time work remains an important work-family strategy for mothers.

Khalil H and Tricco AC. Differentiating between mapping reviews and scoping reviews in the evidence synthesis ecosystem. *Journal of Clinical Epidemiology*. 2022; 149:175-182.

<https://doi.org/10.1016/j.jclinepi.2022.05.012>

Abstract: BACKGROUND AND OBJECTIVES: Scoping reviews, mapping reviews, and evidence map methodologies are increasingly used by researchers. The objective of this article is to outline the main difference between these types of evidence synthesis to improve their conduct. METHODS: This article summarizes the key issues facing reviewers, who conduct scoping reviews, mapping reviews, and evidence maps and those who use the results and may engage in consultations during their development. RESULTS: Several differences exist between the methodologies, and these are in their protocol development, scope, inclusion

criteria, data extraction, reporting, and use. Mapping reviews are mainly driven by questions of effectiveness of a particular intervention and hence they use the Participant Intervention Comparator Outcome Study type format similar to systematic reviews of effectiveness. Scoping reviews mostly use the Participant, context, concept (PCC) format, where they map a concept of interest relevant to a particular population in a specific setting and context. Data extraction is limited by only coding of studies and intervention characteristics in evidence maps. The results of the mapping reviews can be used to inform research priorities and research funding, whereas, scoping reviews result may be used to inform policy development by clarifying key concepts and methods, and further research. **CONCLUSION:** We recommend authors who are planning to undertake scoping reviews confirm that their research question can be appropriately answered using a scoping review methodology, however, for broader research questions without the need for an in-depth analysis of the information, we recommend authors to consider mapping reviews

Kumaresan A, Sebastian N, Suganthirababu P, Srinivasan V, Vishnuram S, Kumar P, et al. Efficacy of physiotherapy management on burnout syndrome amongst IT professionals during the COVID-19 pandemic. *Work*. 2022; 73(3):769-775.

<https://doi.org/10.3233/WOR-220051>

Abstract: **BACKGROUND:** Burnout is a state of emotional, physical, and mental exhaustion caused by excessive stress. Burnout weakens the energy of an individual which reduces productivity and leaves this individual helpless, hopeless, cynical, and resentful. Thus, an early diagnosis of this syndrome has to be done and ways to prevent the level of progression and complication of burnout syndrome has to be planned. **OBJECTIVE:** To determine the efficacy of self-supervised Jacobson's relaxation technique along with Bhastrika Pranayama in reducing the level of burnout among the work-from-home IT professionals during the COVID-19 pandemic. **METHOD:** Thirty participants with burnout syndrome were randomly divided into two groups (15 participants in each group) using random allocation. The experimental group received Jacobson's relaxation technique along with Bhastrika Pranayama, whereas the control group received diaphragmatic breathing exercises and chest expansion exercises. Pre-test and post-test values using Maslach Burnout Inventory were used to interpret the results. **RESULTS:** Data collected were analyzed statistically by the Wilcoxon Signed Rank Test. It shows that there is a significant reduction in the level of burnout in the experimental group when compared to the control group at a p-value of 0.001. **CONCLUSION:** From the results, it is concluded that Jacobson's relaxation technique along with diaphragmatic breathing exercises showed significant improvement in the reduction of burnout levels

MacLeod D. The default is simplicity: a model for the workplace ergonomics problem-solving process. *IIE Transactions on Occupational Ergonomics and Human Factors*. 2022; 10(3):135-141.

<https://doi.org/10.1080/24725838.2022.2109077>

Abstract: **OCCUPATIONAL APPLICATIONS** This paper provides a decision-making model for

workplace ergonomics problem-solving to help clarify the situations in which simple, non-quantitative approaches are suitable, in contrast to those conditions where more formal, quantitative methods are needed. The perspective is that of an individual or workplace team focused on a specific problem. The value of this model is that it: (1) avoids unnecessary activities, in particular quantitative assessments when not needed; (2) emphasizes qualitative problem-solving methods; (3) enables non-technical personnel to be involved; and (4) helps expand the use of ergonomics toward reducing production barriers. The context is "continual improvement" rather than "compliance." Students may profit by learning practical steps useful in the workplace. Practitioners may benefit from reviewing the framework (and indeed improving it). Researchers might gain a better appreciation of simple methods used in the workplace and perhaps test certain premises of the model more rigorously

Makikangas A, Juutinen S, Makiniemi JP, Sjoblom K, and Oksanen A. Work engagement and its antecedents in remote work: a person-centered view. *Work and Stress*. 2022; 36(4):392-416.

<https://doi.org/10.1080/02678373.2022.2080777>

Proctor T, Zimmermann S, Seide S, and Kieser M. A comparison of methods for enriching network meta-analyses in the absence of individual patient data. *Research Synthesis Methods*. 2022; 13(6):745-759.

<https://doi.org/10.1002/jrsm.1568>

Abstract: During drug development, a biomarker is sometimes identified as separating a patient population into those with more and those with less benefit from evaluated treatments. Consequently, later studies might be targeted, while earlier ones are performed in mixed patient populations. This poses a challenge in evidence synthesis, especially if only aggregated data are available. Starting from this scenario, we investigate three commonly used network meta-analytic estimation methods, the naive estimation approach, the stand-alone analysis, and the network meta-regression. Additionally, we adapt and modify two methods, which are used in evidence synthesis to combine randomized controlled trials with observational studies, the enrichment-through-weighting approach, and the informative prior estimation. We evaluate all five methods in a simulation study with 32 scenarios using bias, root-mean-squared-error, coverage, precision, and power. Additionally, we revisit a clinical data set to exemplify and discuss the application. In the simulation study, none of the methods was observed to be clearly favorable over all investigated scenarios. However, the stand-alone analysis and the naive estimation performed comparably or worse than the other methods in all evaluated performance measures and simulation scenarios and are therefore not recommended. While substantial between-trial heterogeneity is challenging for all estimation approaches, the performance of the network meta-regression, the enriching-through weighting approach and the informative prior approach was dependent on the simulation scenario and the performance measure of interest. Furthermore, as these estimation methods are drawing slightly different assumptions, some of which require the

presence of additional information for estimation, we recommend sensitivity-analyses wherever possible

Ravn RL. Which employers have refugee employees, and which do not? Employer typologies developed through hierarchical cluster analyses. *Social Policy & Administration*. 2023; 57(1):67-86.

<https://doi.org/10.1111/spol.12873> [open access]

Abstract: Employers can be regarded as gatekeepers of jobs. They decide how to post vacancies, whom to recruit and whom to dismiss. In recent years, a growing body of research has highlighted the crucial role of employers in relation to labour market participation of disadvantaged groups. This article contributes to this research by exploring which types of employers have refugee employees—and which do not. We develop the typologies through hierarchical cluster analyses using a nationally representative survey of Danish workplaces. We find that the employers who have experiences with having refugee employees can be grouped into three based on their attitudes and preconceptions; knights, knaves and squires. Likewise, employers who have never had refugee employees can also be divided into three groups; aspiring knights, knights of fortune, and commoners. The groups differ in their attitudes and motivations for (not) having refugee employees. Our main contribution to the literature is the development of new nuanced employer typologies, and the finding that employers differ in their motivations for having, or not having, refugee employees.

Shiri R, Turunen J, Karhula K, Koskinen A, Sallinen M, Ropponen A, et al. The association between the use of shift schedule evaluation tool with ergonomics recommendations and occupational injuries: a 4-year prospective cohort study among healthcare workers. *Scandinavian Journal of Work, Environment & Health*. 2022; [epub ahead of print].

<https://doi.org/10.5271/sjweh.4068> [open access]

Abstract: OBJECTIVE: This study aimed to find out whether utilizing a shift schedule evaluation tool with ergonomics recommendations for working hours has favorable effects on the incidence of occupational injuries. METHODS: This 4-year prospective cohort study (2015-2018) consisted of a dynamic cohort of healthcare shift workers (N=29 237) from ten hospital districts and six cities in Finland. Working hour characteristics and occupational injuries were measured with daily registry data. Multilevel generalized linear model was used for the analyses, and the estimates were controlled for hierarchical structure of the data and confounders. RESULTS: Ward heads of the cities used the shift schedule evaluation tool 3.2 times more often than ward heads of the hospital districts. Overall incidence of workplace and commuting injuries did not differ between users and non-users of the evaluation tool. The incidence of dislocations, sprains, and strains was lower in the users than non-users [adjusted odds ratio (OR) 0.88, 95% confidence interval (CI) 0.78-0.99]. Approximately 13% of this association was mediated by increase in realized shift wishes and 10% by increase in single days off. In subgroup analyses, the incidence of workplace injury (OR 0.83, 95% CI 0.69-0.99), and among types of injuries, the incidence of dislocations, sprains, and strains (OR

0.69, 95% CI 0.55-0.85) and falling, slipping, tripping, or overturning (OR 0.75, 95% CI 0.58-0.99) were lower in users than non-users among employees of the cities, but no association was found among employees of the hospital districts. CONCLUSION: The use of ergonomics recommendations for working hours is associated with a reduced risk of occupational injuries

da Silva RL, da Silva LB, and Silva ANA. Relation between mental workload and hospital infection in the ICU. *Work*. 2022; 73(3):915-925.

<https://doi.org/10.3233/WOR-205266>

Abstract: Background: Nursing is among the most stressful professions. Studies that examine possible factors that influence the mental workload (MWL) of nurses are of fundamental importance, because through these results, efforts can be concentrated on improving their working conditions more efficiently. Objective: To investigate the influence of hospital infection on the MWL of nurses in an intensive care unit (ICU). Method: Cross-sectional and descriptive study, with a quantitative approach. Three research instruments were used: a sociodemographic questionnaire, the NASA Task Load Index (NASA-TLX) and the Nursing Work Index-Revised Brazilian version (B-NWI-R). The sample consisted of 30 nurses from the ICU of a public hospital in João Pessoa city, Brazil, during the daytime period, and the Spearman correlation test ($\alpha = 0,05$) was applied to verify associations. Results: There was a high MWL among nurses, with a NASA-TLX weighted average of 66.38 (SD \pm 15.0). Correlations were found between the levels of hospital infection in the ICU and the MWL of the nurses ($r = 0.654$, $p < 0.01$); in the nurses' care of patients with urinary tract infection, the correlation is 0.546, $p < 0.01$; if care is provided to patients with lung problems, the correlation is 0.563, $p < 0.01$. The ICU presented a favorable environment to nursing practices, with means lower than 2.5, according to the B-NWI-R. Conclusion: The MWL of the nurses was associated with the hospital infection levels of the intensive care sector studied. It was found that the MWL of nurses in relation to hospital infection in the ICU increased by 42.8%. This MWL is impacted by 29.8% when nurses' care is linked to patients with urinary infection. But if care is provided to patients with lung problems, this percentage rises to 31.7.

Visona SD, Crespi E, Belluso E, Capella S, De Matteis S, Filippi F, et al. Reconstructing historical exposure to asbestos: the validation of 'educated guesses'. *Occupational Medicine*. 2022; 72(8):534-540.

<https://doi.org/10.1093/occmed/kqac084>

Abstract: BACKGROUND: In both the epidemiological and legal context, the causal attribution of asbestos-related lung diseases requires retrospective exposure assessment (REA). AIMS: To assess the correlation between the retrospective assessment of occupational and anthropogenic environmental exposure to asbestos and its content in the lung tissue. METHODS: Based on the available exposure information, a team of occupational physicians retrospectively assessed cumulative exposure to asbestos in 24 subjects who died of asbestos-related diseases. The asbestos lung content was analysed using analytical scanning electron microscope (SEM-EDS). The Log₁₀ asbestos fibre count in the autoptotic samples was

predicted as a function of the Log10 estimated cumulative exposure using univariate regression analysis. RESULTS: The median count of asbestos fibres by grams of dry weight (ff/gdw) in the lung tissue was 81 339 (range 0-2 135 849.06); it was 287 144 (range 0-2 135 849.06) among the occupationally exposed, and 29 671 (range 0-116 891) among the subjects who only had anthropogenic environmental and/or household exposure. Amphiboles, and particularly amosite (52%) and crocidolite (43%), were detected in all the study subjects. Chrysotile was not detected in any of the samples. Overall, the retrospective estimate of lifetime cumulative exposure to asbestos showed a moderate correlation with the total asbestos fibre count in the autoptic lung, with the regression model explaining 38-55% of the total variance. CONCLUSIONS: Detailed information on occupational, environmental and household exposure circumstances would be indispensable for experienced industrial hygienists and/or occupational physicians to reliably assess past exposure to amphiboles or mixed types of asbestos

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