



This Workplace Research Monthly includes the latest peer-reviewed articles, reports and evidence on a range of workplace health and safety, prevention, recovery at work and return to work topics that were published in October 2025 only.

Comcare does not conduct critical evaluations of the articles listed in the Workplace Research Monthly. Articles are arranged from highest to lowest quality based on levels of evidence outlined in table 1 and 2

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Description of Evidence Levels Definitions Used in this Review

1. **Level of Evidence** – Comcare does not conduct critical evaluations of the articles listed in the Workplace Research Monthly, however, certain study designs are scientifically stronger at answering a question. The scoring hierarchy we provided is presented below.

Level of Evidence	Description
Level 1	Evidence from a systematic/scoping review or meta-analysis of relevant studies.
Level 2	Evidence from a randomised controlled trial.
Level 3	Evidence from a controlled intervention trial without randomisation (i.e. quasi-experimental).
Level 4	Evidence from a case-control or cohort study.
Level 5	Evidence from a single case study, a case series, or qualitative study.
Level 6	Evidence from opinion pieces, reports of expert committees and/or from literature reviews.

2. **Relevance** – Research carried out in Australia or similar countries is most relevant to Australian readers.

Level	Description
A	Study conducted in Australia or the study has been conducted outside Australia but confounders unlikely to affect relevance
B	Study conducted outside Australia and confounders likely to affect generalisability

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Enabling Healthy and Safe Workplaces

Health and Wellbeing

Workplace spirituality and its impact on employee well-being: A systematic literature review of global evidence

Employee well-being is a critical factor influencing organizational performance, job satisfaction, and overall productivity. The role of religion in the workplace in shaping employee well-being has gained increasing scholarly attention, yet a comprehensive synthesis of existing literature remains limited. Further the lack of a comprehensive synthesis makes it difficult to assess the overall impact of religious environments on employees' psychological and professional experiences. This systematic literature review examines the impact of religious workplace environments on employee well-being from global evidence by analyzing 38 relevant studies retrieved from the Scopus and Web of Science databases. The review follows the PRISMA guidelines to ensure a rigorous selection and evaluation process focusing on studies published between 2020 and 2024. The findings were divided into four themes, namely: workplace spirituality and employee well-being, spiritual leadership and organizational performance, workplace spirituality and employee engagement or motivation, and religiosity, spirituality, and employee experiences. The results indicate that a majority of the studies demonstrate a positive correlation between religious workplace practices and employee well-being metrics, reinforcing the significance of organizational spirituality. Despite these benefits, the review underscores the importance of inclusive workplace policies to ensure that religious expression does not lead to alienation or conflict. The study concludes that while religious workplaces can significantly enhance employee well-being, organizations must balance religious expressions with inclusivity to foster a supportive and harmonious work environment. Future research should explore cross-cultural comparisons and longitudinal studies to better understand the long-term implications of religious workplace settings on employee well-being.

Syahir et al. 2025.

Journal of Religion and Health, vol. 64, no. 5.

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Keywords: Employee; spiritual; systematic literature review; well-being; workplace.

Evidence Level: 1A

Link: <https://link.springer.com/article/10.1007/s10943-025-02350-2>

Pro-inflammatory dietary patterns are associated with dyslipidemia, poor body composition, and sleep quality among healthcare workers: A cross-sectional study

Background: Healthcare workers are at elevated risk for metabolic disorders due to occupational stress, irregular eating habits, frequent consumption of takeout food, and limited physical activity. Despite this, the link between dietary inflammatory potential and cardiometabolic health in this population remains underexplored. This study is the first to examine the association between the energy-adjusted Dietary Inflammatory Index (E-DII) and metabolic health indicators among healthcare professionals in China.

Methods: A total of 427 healthcare workers from a tertiary hospital participated in this cross-sectional study. Demographic and physical activity data were collected via structured questionnaires. Biochemical markers-including lipid profiles, glucose, liver enzymes, and uric acid-were obtained through standard blood tests. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), while dietary intake over the past 3 months was evaluated with a 25-item Food Frequency Questionnaire (FFQ-25). E-DII scores were calculated to reflect the inflammatory potential of participants' diets. Logistic and linear regression models were used to assess associations between E-DII scores and dyslipidemia and body composition parameters, adjusting for potential confounders. **Results:** Participants in the highest E-DII tertile had an approximately twofold increased risk of dyslipidemia compared to those in the lowest tertile (OR = 2.163, 95% CI: 1.209-3.868). Each one-unit increase in E-DII score was associated with a 47% higher odds of dyslipidemia (OR = 1.470, 95% CI: 1.100-1.966). Higher E-DII scores were also positively associated with LDL cholesterol, fasting glucose, uric acid, BMI, body fat percentage, visceral fat area, and sleep disturbances.

Conclusion: Diets with a higher inflammatory potential are significantly associated with adverse metabolic

profiles and abnormal body composition among healthcare workers. These findings underscore the urgent need for workplace interventions promoting anti-inflammatory diets and healthy lifestyle behaviors to mitigate cardiometabolic risk in this vulnerable population.

Yao et al. 2025.

Journal of Human Nutrition and Dietetics, vol. 38, no. 5.

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Keywords: E - DII; body composition; dietary inflammation; dyslipidemia; healthcare workers; sleep quality.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1111/jhn.70131>

Epidemiological study of functional dry eye disease in working-class population in Shanghai, China

Background: To investigate the current status, morbidity, and risk factors of functional dry eye disease (DED) in Shanghai's working-class population and explore measures to fundamentally cure and prevent functional DED. **Methods:** A questionnaire form was used to record the data of the diagnosed functional DED working-class subjects in Shanghai, the results were recorded and analyzed. Additionally, the subjective symptoms of DED subjects and the respective clinical results were also recorded. The classification and corneal staining between subjects who wear contact lens or without were compared. The correlation of classification and corneal staining with their risk factors were also analyzed. **Results:** The risk factors of functional DED showed much in common though their works have professional particularity. Evaporative dry eye (EDE) accounts for a large proportion of DED (45.35%), many subjects co-exist symptoms and signs of mixed DED (32.64%). The age of 21-40 is the peak year range (70.4%). Contact lens, visual terminals, air-conditioner, decoration, stay up later, sleep disorder, smoking were risk factors in most functional DED subjects. Notably, contact lens is a leading risk factor to cause functional DED and ocular surface complications (both were $p < 0.01$), while deep sleep seems to be a protective factor ($p < 0.01$). **Conclusion:** The incidence of functional DED in Shanghai is kept in a high level. Most risk factors are closely related to daily work and life, while they are almost reversible. Exploring and eradicating these daily risk factors seems to be a more preferable way to fundamentally control and prevent functional DED.

Wang et al. 2025.

La Medicina del Lavoro, vol. 116, no. 5.

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Keywords: Dry eye disease; risk factors; working-class.

Evidence Level: 4B

Link: <https://mail.mattioli1885journals.com/index.php/lamedicinadellavoro/article/view/15963>

Sleep disturbance among workers: Interaction and mediation of job satisfaction and social support

Background: The relationship between low social support at work and insomnia remains underexamined, especially regarding the mediating effect of job satisfaction. Our study focuses on unveiling how job satisfaction potentially shapes this association. **Methods:** Data on paid workers were obtained from the 6th Korean Working Conditions Survey. The multivariable logistic regression models, stratified by sex, were conducted to estimate the crude and adjusted odds ratios (ORs) and 95% confidence intervals (CIs) for insomnia. An interaction and causal mediation analyses on insomnia were conducted between low social support at work and job satisfaction. **Results:** Among the 19,394 workers (9,046 male and 10,348 female), 1,490 (16.5%) male and 1,678 (16.2%) female had low social support at work and 524 (5.79%) of males and 867 (8.38%) of females experienced insomnia. The relationship between low social support at work and insomnia was significant in both sexes (adjusted OR [95% CI], male, 1.71 [1.39-2.12]; female, 1.34 [1.12-1.60]), respectively. In the interaction between social support at work and job satisfaction on insomnia, there were significant multivariable relationships. Additionally, 30.3% of the relationship between low social support at work and insomnia was mediated by job satisfaction in both sexes. **Conclusion:** We

highlight the significant relationship between low social support at work and insomnia. Job satisfaction plays a crucial mediating role in this relationship.

Lee et al. 2025.

Journal of Korean Medical Science, vol. 40, no. 41.

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Keywords: Insomnia; interaction; job satisfaction; mediation; sex difference; social support at work.

Evidence Level: 4B

Link: <https://jkms.org/DOIx.php?id=10.3346/jkms.2025.40.e269>

Results of a study on occupational and non-occupational determinants of obesity among blue-collar workers

Background: Obesity is a serious health problem among workers. Blue-collar workers, despite the fact that their work involves physical effort, may also have difficulty maintaining a healthy body weight. A survey was conducted to determine the prevalence of overweight and obesity among blue-collar workers employed in various sectors of industry. The study also examined the influence of selected occupational and non-occupational factors on excessive body mass in this group of workers. **Material and methods:** The survey was conducted using the computer assisted personal interview method among a group of 542 men, blue-collar workers aged 25-65 years, with an average age of 43.9 years. **Results:** Excessive body weight, defined by body mass index, was present in 61.1% of the study group of men. In almost half of the overweight and obese subjects, waist circumference values exceeded 94 cm, which is characteristic of abdominal obesity. Overweight and obese workers were significantly more likely to work >40 h/week, had poorer work ability measured by the Work Ability Index (WAI) and lower activity measured by the International Physical Activity Questionnaire (IPAQ) compared to normal-weight workers. **Conclusions:** It seems that for the subjects studied, the key to achieving or maintaining normal weight should be to strengthen lifestyle activities. Workplaces should play a supportive role by encouraging recreational activities and providing adequate time for rest and recovery.

Łastowiecka-Moras et al. 2025.

La Medicina del Lavoro, vol. 76, no. 5.

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Keywords: Blue-collar workers; non-occupational factors; obesity; occupational factors; overweight; physical activity.

Evidence Level: 4B

Link: <https://medpr.imp.lodz.pl/Results-of-a-study-on-occupational-and-non-occupational-determinants-of-obesity-among,207894,0,2.html>

Longer commute time is associated with a higher risk of miscarriage: A mixed-effects longitudinal study

Background: Long commuting has been linked to some adverse pregnancy outcomes, but its association with miscarriage, one of the most common pregnancy complications, has not been investigated. This study examined whether the frequency and duration of commuting are associated with miscarriage risk.

Methods: We used waves 1-11 (2008-2019) of the German Family Panel (Pairfam) and sampled women aged 16-45 who had a male partner, worked for pay, and reported a live birth or a miscarriage during the observation period. Cases of recurrent (3 or more) miscarriages were excluded. The final sample consisted of 579 women who reported 458 live births and 121 miscarriages. The association between commuting and miscarriage was examined using mixed effects logistic regression models, stepwise adjusting for work-related confounders. **Results:** Commute time longer than 20 min one-way was associated with an increased risk of miscarriage (OR 1.98; CI: 1.00-3.90) compared to commute time under 10 min, in the sample of all commuters. The risk was overall highest for those who commuted daily and for longer than 30 min one-way (OR: 2.28; CI: 1.05-4.98). Commute frequency alone was not associated with an increased risk, but there might be selection into sporadic or no commuting. **Conclusions:** A longer commute may represent a modifiable risk factor for miscarriage. Reducing commute time through home-based work, transport-

related policies, or flexible scheduling to avoid peak hours could help mitigate this risk, particularly for women with an elevated baseline risk. Future studies should explore potential mechanisms linking commuting to adverse pregnancy outcomes, including stress, environmental exposures, and disruptions to circadian rhythms.

Jarosz et al. 2025.

BMC Pregnancy and Childbirth, vol. 25, no. 1.

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Keywords: Adverse outcomes; commuting; occupational health; pregnancy.

Evidence Level: 4B

Link: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-025-08259-8>

Infertility burden among women firefighters: A cross-sectional exploratory analysis

Objectives: Despite biological and environmental plausibility, risk factors for infertility have not yet been studied among female firefighters. In this exploratory analysis, we investigated the burden of infertility among a subset of US firefighters enrolled in the Health and Wellness of Women Firefighters Study.

Methods: Women firefighters enrolled in the study responded to surveys administered in 2017 and 2019, reporting on their work environment, reproductive health, infertility history and fertility treatment history among those with infertility. Demographics and reproductive history of firefighters were compared by reported history of infertility. Log binomial regression models were used to estimate the association between occupational factors and risk of infertility. **Results:** Of the 562 firefighters in our analysis, 168 of these women (30%) reported a history of infertility. A longer length of employment as a firefighter was associated with a modest, but non-statistically significant, increased relative risk of experiencing infertility (1.39, 95% CI 0.86 to 2.24). **Conclusions:** This exploratory analysis highlights an opportunity to further examine infertility and impaired fertility among firefighters. Future studies may focus on comparing the burden of infertility in firefighters to the general population and evaluating the influence of additional occupational factors.

Jung et al. 2025.

Occupational and Environmental Medicine, vol. 82, no. 8.

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Keywords: Fertility; firefighters; occupational health; reproductive medicine.

Evidence Level: 4B

Link: <https://oem.bmj.com/content/82/8/403.long>

Is work-related hearing loss associated with dementia? Evidence from a high-risk population

Background: Age-related hearing loss is associated with increased dementia risk. We examined the association between hearing loss and dementia in a population at high risk for hearing loss from occupational noise exposures. **Methods:** We conducted cross-sectional and longitudinal analyses using logistic regression and interval-censored Cox models using data from the Building Trades National Medical Screening Program (BTMed), from inception in 1996 through March 2024. Hearing loss was defined as a speech-frequency pure-tone average ≥ 20 decibels (dB) in the better ear and categorized as mild (20-34 dB), moderate (35-49 dB), moderately severe (50-64 dB), or severe to complete (≥ 65 dB). Dementia was defined using criteria from medical history, physical exams, and medication data across all medical screening examinations. **Results:** The study included 44,000 exams in 24,958 BTMed participants; 54.6% had hearing loss. Hearing loss was strongly associated with dementia prevalence (211 cases, $p < 0.001$), with prevalence increasing by severity. Cross-sectional analysis found a significant association between hearing loss ≥ 20 dB and dementia (adjusted odds ratio = 1.88, 95% confidence interval (CI) = 1.15-3.07). In longitudinal analysis, a Cox model adjusted for confounders estimated a hazard ratio of 1.60 (95% CI = 0.99-2.59, p -trend = 0.0928) for incident dementia. **Discussion:** Cross-sectional results support an association between occupational hearing loss and dementia, consistent in direction with findings for age-related hearing loss; longitudinal estimates were not significant but were directionally similar. If confirmed in other high-risk cohorts with repeated audiometry, these findings underscore the potential for hearing conservation and hearing loss rehabilitation in dementia prevention.

Cloeren et al. 2025.

American Journal of Industrial Medicine, vol. 68, no. 11.

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(<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: Dementia; hearing loss; occupation.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/ajim.70026>

"I did not recognize myself": A mixed methods study to better understand the experiences of menopause in a US workplace

Objective: This mixed-methods study aimed to describe the prevalence and impact of menopausal symptoms on midlife women in a US workplace. **Methods:** An online survey was disseminated to all US-based employees of a US-headquartered pharmaceutical company. Eligible respondents were aged 40-65 years and self-identified as having (or expecting to have) personal experience of menopause. Descriptive statistics were generated. Survey respondents were sampled for in-depth interviews, on which thematic analysis was performed. **Results:** Eligible survey responses were received from 1,642 employees, of which 18 participated in in-depth interviews. The mean respondent age was 51 years, and a range of job roles were represented. The majority of respondents (83%) reported that they had current or prior experience of menopause. Menopause symptoms most commonly impacting workplace performance included changes to sleep patterns, changes to memory, hot flashes and anxiety, although interviews highlighted a diversity of symptom presentations. Menopause symptoms were reported to affect stress levels, confidence in abilities, patience with others, and ability to concentrate at work; 7% of menopausal respondents took time off work due to menopause symptoms. Although half of the respondents disclosed that they would feel extremely or somewhat comfortable discussing menopause with colleagues, only 9% of those with current symptoms reported that they had received support with their menopause symptoms at work. **Conclusions:** This study found that menopause impacts women's perceptions of their own performance at work, and that many are unsure how to approach conversations about menopause in the workplace. A substantial gap in knowledge about menopause was identified, highlighting the need for further education and support.

Mallen et al. 2025.

Menopause, vol. 32, no. 10.

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Keywords: Educational resources; menopause symptoms; productivity; quality of life; stigma; workplace.

Evidence Level: 5B

Link:

https://journals.lww.com/menopausejournal/fulltext/2025/10000/i_did_not_recognize_myself_a_mixed_methods.5.aspx

Work Health and Safety

Does ankle support of safety shoes increase trip-related risk of falling?: A randomized crossover study

Background: Occupational footwear offers multiple safety features like ankle support. Although designed to protect the ankle joint, the added mass and structural rigidity may restrict ankle range of motion and hinder natural gait adaptations essential for balance, potentially increasing trip severity and fall risk.

Research question: Does ankle support in occupational footwear increase the trip related-fall risk?

Methods: Twenty asymptomatic individuals (11 females and nine males) participated in this randomized cross-over study. The participants wore two types of mass-matched safety shoes, with and without ankle support, while walking on a treadmill, where unexpected trips were induced by obstacles (heights: 31 mm and 75 mm). This study evaluated differences in safety shoes on external support (i.e., using handrails or engaged with the safety harness), toe clearance, recovery strategy, and ankle angles in the sagittal plane.

Results: Safety shoes with ankle support, compared with those without, increased reliance on external support during unexpected trips, indicating a higher fall risk, particularly when tripping over the low obstacle. **Significance:** These findings highlight that ankle-supported occupational footwear, although designed to protect, may increase trip-related fall risks and most likely impaired gait robustness. The study highlights the importance of exploring design features that could mitigate the fall risk in occupational settings.

Munk-Hansen et al. 2025.

Gait and Posture, vol. 122.

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Keywords: Fall prevention; laboratory test; occupational footwear; recovery strategies; trip.

Evidence Level: 2B

Link: <https://www.sciencedirect.com/science/article/pii/S096663622500565X?via%3Dihub>

Environmental and occupational risk factors associated with multiple myeloma: A multicenter, hospital-based, matched case-control study

Introduction: Multiple myeloma (MM), a hematologic malignancy driven by neoplastic plasma cell proliferation, remains insufficiently characterized with respect to occupational and environmental risk factors and their impact on patients' quality of life (QoL). This study explores modifiable exposures in the West Bank, Palestine, and evaluates their associations with MM risk and disease-specific QoL outcomes.

Methods: A multicenter, hospital-based case-control study was conducted between 2018 and 2025, including 227 MM patients and 176 matched controls. Matching was based on age, sex, hospital setting, and admission type. Occupational/environmental exposures including ionizing radiation, cosmetics-related agents, pesticides, organic solvents, and farming were assessed via structured interviews and chart reviews. MM diagnosis adhered to International Myeloma Working Group criteria. QoL was evaluated using the validated EORTC QLQ-MY20 instrument. Multivariable logistic and linear regression analyses were performed, adjusting for clinical confounders using LASSO selection. **Results:** Cosmetics-related chemical exposure was independently associated with higher odds of MM (OR = 2.85; 95% CI: 1.56-5.21) and a mixed QoL profile. Specifically, it predicted increased disease symptoms (Coeff = 11.55; 95% CI: 2.82-20.28; p = 0.010), lower treatment side-effects scores (Coeff = -2.17; 95% CI: -8.57 to -0.23; p = 0.049), and a marked decline in future perspective (Coeff = -13.73; 95% CI: -22.88 to -4.58; p = 0.003). Pesticide exposure was significantly linked to lower disease symptom burden (Coeff = -3.77; 95% CI: -12.61 to -2.06; p = 0.041) and better future outlook (Coeff = 10.05; 95% CI: 0.77-19.34; p = 0.034). Meanwhile, organic solvent exposure (carcinogenic-organic compounds) was associated with a decline in future perspective (Coeff = -3.96; 95% CI: -5.70 to -2.62; p = 0.042). **Conclusion:** This study highlights cosmetics-related agents, pesticides, and organic solvents as key modifiable risk factors for both MM development and QoL deterioration. Their significant physical and psychological impacts underscore the urgency of integrating preventive occupational health strategies with holistic myeloma care that addresses symptom burden and future outlook.

Alnees et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Case-control study; EORTC QLQ-MY20; environmental exposure; multiple myeloma; occupational exposure; quality of life.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24366-9>

The role of personal risk factors in the occurrence of the hand-arm vibration syndrome: A pooled analysis of individual data from Italian cross-sectional and cohort studies

Purpose: To investigate the role of personal risk factors in the occurrence of the vascular, neurological and fibroproliferative disorders of the hand-arm vibration syndrome (HAVS) in workers groups exposed to hand-transmitted vibration (HTV). **Methods:** HAVS prevalence and incidence data were pooled across a series of cross-sectional studies (total sample: 1272 HTV workers, 579 controls) and prospective cohort

studies (total sample: 377 HTV workers, 138 controls) conducted in Central and North-Eastern Italy. The pooled studies included detailed individual-level information about HTV exposure, personal risk factors, medical comorbidities and HAVS disorders. Vibration exposures were evaluated according to the recommendations of ISO standards. **Results:** The pooled studies revealed dose-response relationships between HTV exposure and the vascular and neurological components of HAVS. Older age, excessive alcohol intake, and comorbid conditions such as metabolic disorders, traumas/surgery to the neck and upper limbs, and disorders of the cervical spine were differentially associated with HAVS outcomes. Higher BMI had a protective effect on vascular disorders. Data modelling showed no significant interactions between HTV exposure and personal risk factors in the occurrence of upper limb disorders. **Conclusions:** The pooled analysis of epidemiological studies with individualised work, personal, and medical data confirmed that HTV exposure is a primary occupational risk factor for disorders in the fingers and hands of users of vibratory tools. Ageing and some personal factors connected to lifestyles and comorbidities were associated with an increased risk for upper limb disorders in HTV workers. Occupational and personal risk factors tended to contribute independently of each other to adverse outcomes in operators of hand-held vibrating machinery.

Bovenzi et al. 2025.

International Archives of Occupational and Environmental Health, vol. 98, no. 8.

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Keywords: Exposure–response relationship; hand-arm vibration syndrome; hand-transmitted vibration; personal risk factors; pooled epidemiological studies; upper limb disorders.

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007/s00420-025-02169-0>

Computer simulation of whole-body vibration in port container handling machine operators

This study aimed to evaluate the effect of whole-body vibrations (WBV) on ergonomics related to static posture during the operation of container handling machines (Portainer). A 3D numerical model of a seated man was developed using modal and harmonic analysis based on the finite element method (FEM), and implemented on the ANSYS platform to achieve this. Quantitative analyses of whole-body vibrations were carried out in actual workplaces at a port terminal in northeastern Brazil, considering the interaction between the human and the machine. A comparison was made between the real data collected at the operating sites and the values obtained from the developed model. Concerning vibration exposure, the results revealed a critical situation: in 86.2% of cases, the Acceleration of Resulting Normalized Exposure-A(8)-exceeded the alert level, and in 96.6% of cases, the Resulting Vibration Dose Value (VDV) also surpassed this threshold. Similarly, an alert level was exceeded in 97.0% of cases. According to the maximum limits established by Brazilian legislation, the acceleration from normalized exposure did not exceed the limit, while the resulting vibration dose value was surpassed in 20% of cases. The modal analysis results helped identify the critical directions of vibration response, thus supporting the assessment of human exposure effects and the structural performance of the system analyzed. The harmonic analysis showed good agreement between the model and the real acceleration data in the frequency range of 3 to 4 Hz.

Silva et al. 2025.

Sensors, vol. 25, no. 20.

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Keywords: FEM; WBV; ergonomics of static posture; finite element method; modal and harmonic analysis; musculoskeletal disorders; occupational hygiene; whole-body vibration.

Evidence Level: 4B

Link: <http://mdpi.com/1424-8220/25/20/6346>

Sharps injuries and splash exposures among healthcare workers in the United Arab Emirates

Background: The present study aimed to estimate the rate of sharps injuries and splash exposures among healthcare workers in the United Arab Emirates (UAE) government hospitals and to determine the risk factors associated with these incidents of possible severe consequences. **Methods:** A cross-sectional study was carried out among healthcare workers employed in government hospitals in the Abu Dhabi Emirate of

the UAE. An online survey was distributed to estimate incidents of sharps injuries and splash exposures between 2019 and 2021. The study explored characteristics, risk factors, consequences, and preventive measures in response to these incidents. **Results:** In the current study, 820 healthcare workers responded to the invitation, and 678 completed the questionnaire. Among the participants, 14.6% suffered sharp injuries or splash exposures in the study period, but only 70% reported the incident. Dealing with uncooperative or restless patients and workplace pressure were the two most frequent contributing factors, while suturing and manipulating needles in patients were the most common circumstances leading to these incidents. Most healthcare workers said their institutions had rules for the control of sharps injuries and splash exposures, and the majority thought the supplied personal protective equipment was sufficient to prevent the incidents and their serious complications; nevertheless, almost 30% of them never used auto-retractable needles. **Conclusion:** Sharps injuries and splash exposures are still frequent among healthcare workers in the UAE; therefore, interventions encouraging reporting and focusing on training for safe practices, ensuring adequate personal protective equipment supply, including safety-engineered products like auto-retractable needles, are recommended to mitigate the risk.

Karkaz et al. 2025.

Frontiers in Public Health, vol. 13.

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Keywords: Healthcare worker; personal protective equipment; reporting; sharps injury; splash exposure.

Evidence Level: 4B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1659815/full>

Associations between obesity and the severity of occupational allergic rhinitis: A cross-sectional study

Introduction: Occupational allergic rhinitis (OAR) is a common respiratory condition that can lead to varying degrees of symptom severity, significantly impacting workers' quality of life and productivity. While occupational risk factors are well established, the influence of nonoccupational factors, such as obesity, that contribute to OAR severity remains largely unexplored. **Aims:** This study aims to study the association between obesity and the severity of OAR. **Methods:** A cross-sectional analytical study was conducted among patients diagnosed with OAR at the Occupational Medicine Department of Farhat Hached University Hospital of Sousse. It combines a retrospective review of medical records (2013-2021) with prospective structured telephone interviews (January-March 2023). Data were collected from medical records and supplemented with telephone interviews. The severity of OAR was assessed via the PAREO score and rhinomanometry results. **Results:** A total of 196 patients were included. The mean age was 39.69 ± 7.92 years, with a sex ratio of 0.53. The most frequently reported symptoms were nasal obstruction (78.6%) and sneezing (88.8%). The mean PAREO score was 5.78 ± 1.61 , with severe OAR reported in 59.2% of the patients. Obesity was significantly associated with increased severity of OAR symptoms ($p < 0.001$; OR = 5.4; 95% CI [2.6-11.1]), a finding confirmed after adjustment for variables such as age, sex, and occupational seniority. **Conclusion:** Obesity appears to be a modifiable risk factor influencing OAR severity. Integrating weight management strategies into the treatment of OAR patients may contribute to significant symptom relief and improved quality of life. Further longitudinal studies are needed to confirm these findings and explore the underlying mechanisms involved.

Kacem et al. 2025.

International Journal of Environmental Research and Public Health, vol. 22, no. 10.

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Keywords: Obesity; occupational allergic rhinitis; risk factors; severity.

Evidence Level: 4B

Link: <https://www.mdpi.com/1660-4601/22/10/1531>

Integrated multimethod analysis of miners' safety behavior and risk interaction for practical applications

Miners' safety behavior is a critical factor in mine safety management, and its implementation effectiveness significantly influences the establishment of safety ecosystems and sustainable industry development. This study constructs a multidimensional risk coupling analytical framework integrating Bayesian Network (BN)

modeling, N-K theory, and Random Forest (RF) algorithms based on risk coupling theory. By systematically examining the three primary risk factors influencing miners' safety behaviors-individual perception, situational stress, and physical environment-the analysis reveals that the synergistic interaction between situational stress and physical environment is the principal pathway for systemic risk emergence. Furthermore, multidimensional factor coordination demonstrates significant potential in enhancing safety compliance rates. Heterogeneous behavioral patterns among miners were identified through cluster analysis, informing the development of customized intervention strategies. The study proposes three strategic recommendations: (1) Introducing differentiated risk classification protocols, (2) Optimizing intelligent early-warning response systems, and (3) Rebuilding safety culture ecosystems. These recommendations facilitate the transition from reactive regulatory compliance to proactive safety adaptation in mine operations. This research contributes novel perspectives to safety management research and establishes a systematic modeling foundation for optimizing miners' safety behavior interventions. The integrated methodology advances current analytical approaches in occupational risk assessment and provides actionable insights for industrial safety practices.

Chen 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Bayesian network; intelligent mine; miners' safety behavior; N-K model; risk coupling.

Evidence Level: 5B

Link: <https://www.nature.com/articles/s41598-025-18454-4>

The most important thing is to know what to wear when working in the sun

Objective: Crop workers face increasingly hot working conditions. Wearing light-colored, single-layer breathable clothing and wide-brimmed hats, on top of having water, rest, and shade, can reduce the risk of heat illness among crop workers. Clothing preferences and limited access may prevent crop workers from wearing optimal work apparel. However, little is known about crop workers' workplace clothing preferences or their clothing acquisition barriers (e.g., access to retailers, cost). This qualitative study aimed to document Spanish-speaking crop workers' ideal work clothing and understand the primary barriers that prevent them from wearing clothing that reduces heat-related illness risk. **Methods:** Four focus groups were conducted in Spanish on vegetable farms in Colorado during August and September 2023. Two researchers thematically analyzed qualitative focus group data. **Results:** There were 54 Spanish-speaking crop workers who participated in focus groups during August and September 2023. Findings show participants know which work clothing options protect from heat-related illnesses. Participants purchased their work clothes primarily at second-hand stores. They preferred clothes made of light but durable materials and complete pieces that cover the head, neck, and trunk with long sleeves and pants that facilitate movement. Barriers to wearing worker-defined ideal clothing described include costs and the difficulty in finding the specific style of clothing at their preferred retail outlets. Participants described an interest in partnering with employers to purchase ideal clothing to prevent heat-related illness.

Conclusion: Spanish-speaking crop workers have a clear understanding of ideal work clothing and the link between clothing and heat illnesses prevention. However, based on thematic analysis of focus groups with crop workers in Colorado, cost and access to ideal clothing are the biggest barriers. Strategies that facilitate access to appropriate clothing for working in hot environments and involvement of employers in apparel choice are potential methods to promote worker safety and reduce the risk of heat-related illnesses among agricultural farmworkers.

Pennington et al. 2025.

Journal of Agromedicine, vol. 30, no. 4.

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Keywords: Clothing; farmworkers; heat-related illness.

Evidence Level: 5B

Link: <https://www.tandfonline.com/doi/full/10.1080/1059924X.2025.2540576?af=R>

Occupational horizontal pushing inducing massive haemothorax: An unusual case report

We report an unusual case of a 55-year-old male machine operator who developed a massive unilateral haemothorax and ipsilateral rib fracture following occupational horizontal pushing of a cold-rolled steel coil. Notably, this occurred in the absence of direct chest trauma, coagulopathy or underlying anatomical abnormalities. The patient fully recovered after timely tube thoracostomy and hospital monitoring. This case highlights the potential for severe occupational injuries resulting from horizontal pushing activities, which are often overlooked and underreported in injury statistics. To our knowledge, this is the first documented case of haemothorax induced by horizontal pushing, warranting further research to guide preventive safety measures and enhance the recognition and reporting of similar cases, thereby improving clinician awareness of indirect occupational trauma. It underscores the need for standardized force limits and ergonomic interventions to mitigate such risks and eventually eliminate manual handling of heavy machine components.

Abraham et al. 2025.

Occupational Medicine, vol. 75, no. 7.

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Keywords: Haemothorax; occupational horizontal pushing.

Evidence Level: 5B

Link: <https://academic.oup.com/occmed/article/75/7/457/8217386?login=false>

Risk Assessment

The relationship between workplace risk assessments and measures to manage psychosocial risks at work: Findings from ESENER

Purpose: Workplace risk assessment (WRA) is crucial for the management of psychosocial risks at work (PSRM), but some enterprises may also implement PSRM measures without formal WRA, in particular small and micro enterprises. This study analyses the associations between WRA and PSRM, and whether the associations vary by company size. **Methods:** The data come from the European Survey of Enterprises on New and Emerging Risks (ESENER) collected at the enterprise level in the EU-28 countries in 2014 (n = 40,584) and 2019 (n = 39,711). We distinguish eight measures of PSRM, and assess whether companies conduct a comprehensive WRA that includes psychosocial risks. **Results:** Many companies reported PSRM measures. The lowest rates were for "intervention in the case of long working hours" (2014: 26%, 2019: 32%), while the highest rates were for "procedures in the case of threats" (56%, 60%). Enterprises with a comprehensive WRA are more likely to implement measures (even after controlling for company size, industry, sector and country), but some enterprises have implemented PSRM even in the absence of a WRA, especially in 2014 or in smaller companies (5-49 employees). For example, findings suggest that in 2014 40% of the enterprises without a WRA have implemented "procedures in the case of threats" (2019: 46%). **Conclusion:** The findings underline the importance of a WRA that includes psychosocial risks as a means of implementing PSRM measures, but also advocates for a broader perspective that considers measures taken independently of legal occupational safety and health (OSH) standards, especially in small and micro enterprises.

Beck et al. 2025.

International Archives of Occupational and Environmental Health, vol. 98, no. 8.

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Keywords: Measures; occupational safety and health; psychosocial risk management; workplace risk

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007/s00420-025-02158-3>

Introducing FMEA plus method for comprehensive safety risk assessment in the steel industry

Addressing the challenge of employing a comprehensive risk analysis approach that effectively captures and quantifies all contributing factors remains a significant endeavor in both academic research and practical field applications. This study endeavors to fill this gap by introducing a practical safety risk

assessment approach, named the FMEA+ method, grounded in the conventional Failure Modes and Effects Analysis. To construct a comprehensive taxonomy that encompasses the contributing factors within each dimension of risk, a three-stage Delphi study engaged 35 Subject Matter Experts (SMEs). The Fuzzy Analytical Hierarchy Process (FAHP) was employed to acquire knowledge and assign weights to the factors and sub-factors. The validation and reliability assessment of the developed taxonomy included evaluating the Content Validity Ratio (CVR), Content Validity Index (CVI), and Cronbach's alpha coefficient, yielding values of 0.77, 0.91, and 0.86, respectively. Independent peer reviews and reality checks further substantiated the credibility of the proposed taxonomy. The introduced safety risk assessment algorithm, FMEA + , derived from the FMEA technique, comprises three main factors and 12 sub-factors. The final normalized weights for the three factors-occurrence, severity, and detectability-were determined to be 0.337, 0.348, and 0.315, respectively. In the three factors of occurrence, severity, and detection, the most important sub-factors identified were human reliability, human injury, and technical inspection, respectively. This proposed taxonomy serves as a foundational tool for facilitating informed decision-making and the effective implementation of risk mitigation strategies. The application of this innovative approach offers a scientific alternative to traditional FMEA methods within similar industries, addressing existing challenges in a more comprehensive and nuanced manner.

Soltanzadeh 1 et al. 2025.

PLoS One, vol. 20, no. 10.

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Keywords: Safety risk assessment; steel industry.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0331748>

Integration of the exposome concept into health risk assessments: A challenge for health safety agencies

The exposome is a concept that aims to study the environmental factors to which individuals are exposed during their lifetime and the role of these factors in the development of chronic diseases. Since the concept emerged in 2005, new data, methods, and tools have been generated by the scientific community to assess the different components of the exposome and their impacts on human health. Currently, one of the main challenges is accounting for the diversity and complexity of exposures and their effects on health in risk assessment, which might be accomplished by integrating the exposome into this process. To this end, a working group was constituted by Anses to develop a strategy to integrate the exposome concept in risk assessment and more generally in the work produced by health safety agencies. We present the principal challenges to be addressed by considering 8 themes covering relevant aspects of the exposome and we made recommendations for each theme: 1) characterization of the exposome in epidemiological surveys; 2) exposome data; 3) risk assessment of chemical mixtures; 4) aggregation of multiple sources and routes of exposure; 5) dynamics of the exposure in the context of time, space, and social factors; 6) establishment of reference values; 7) multiple factors in risk, benefit and health impact assessment; and 8) eco-exposome. Then, we propose practical recommendations with short-, medium-, and long-term time scales to progressively operationalize the exposome into risk assessments implemented by health safety agencies. We also discuss how providing broader exposome input into risk assessment can support risk regulators to incorporate exposome input into risk management.

Crépet et al. 2025.

Environmental Research, vol. 286.

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Keywords: Chemicals; exposome; human health; public policies; regulations; risk assessment.

Evidence Level: 6B

Link: [https://linkinghub.elsevier.com/retrieve/pii/S0013-9351\(25\)02289-3](https://linkinghub.elsevier.com/retrieve/pii/S0013-9351(25)02289-3)

Ergonomics

Health effects of ergonomics and personal protective equipment on chemotherapy professionals

Background: With the increasing incidence of cancer, the need for handling cytotoxic drugs has also grown. However, manipulating these drugs exposes healthcare professionals to significant risks, including occupational exposure to hazardous chemicals. Therefore, it is important to adopt protective measures, including personal protective equipment (PPE) and correct ergonomic practices, to ensure safe drug preparation and minimize health risks for the operators. However, while chemical exposure and PPE have been extensively addressed in the literature, the combined impact of ergonomic practices and protective measures remains insufficiently emphasized, representing a critical gap this review aims to address. Accordingly, the objective of this literature review was to analyze the ergonomic and individual protection practices during the handling of cytostatic drugs and all the implications that bad ergonomic practices and/or poor individual protection have on the operator's health; **Methods:** In order to perform this integrative review, a structured literature search was conducted using online databases (Web of Science®, Google Scholar®, and PubMed®) from January 2005 to June 2025. **Results:** A total of 19 articles were analyzed, with 17 focusing on PPE and 17 on ergonomics. The findings emphasize that PPE, such as gloves, masks, gowns, sleeves and safety glasses, plays a critical role in the safe handling of cytotoxic drugs, particularly when combined with other safety measures. Additionally, maintaining correct ergonomic posture is important in preventing musculoskeletal disorders; **Conclusions:** This review emphasizes the significance of integrating appropriate PPE use with sound ergonomic procedures. Although PPE is still the secondary line of defense against occupational exposure, ergonomic issues must also be addressed to avoid chronic musculoskeletal problems. Continuous training, rigorous attention to safety procedures, and ergonomic enhancements should be prioritized by healthcare facilities as a key element of occupational safety programs to reduce the short-term and long-term health hazards for personnel handling dangerous drugs.

Reis et al. 2025.

Current Oncology, vol. 32, no. 10.

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Keywords: Contamination; cytotoxic drugs; ergonomic practices; personal protective equipment.

Evidence Level: 1A

Link: <https://www.mdpi.com/1718-7729/32/10/563>

Chronic Health Issues

Work disability in systemic lupus erythematosus: A systematic review protocol of contributing factors and return-to-work facilitators

Introduction: Systemic lupus erythematosus (SLE) is a chronic autoimmune disease affecting multiple body parts. With a fluctuating range of symptoms, SLE imposes significant challenges and limitations on individuals at work. The objective of this review is to synthesise the existing literature on work disability in patients with SLE and identify factors associated with work disability and facilitators of returning to work (RTW). **Methods and analysis:** This systematic review is registered with PROSPERO (CRD420251011567). This protocol followed the PRISMA-P (Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Protocols) guidelines. The search will be conducted using Business Source Premier, CINAHL, Cochrane Library, Embase, MEDLINE, PsycINFO, Scopus and Web of Science from inception to March 2025. At least two independent reviewers will complete screening, data extraction and critical appraisal. Eligible studies will focus on individuals with SLE and examine the barriers and facilitators to RTW. Eligible studies will be peer-reviewed, published in English or available in English translations. Unpublished research, opinion pieces, conference papers, abstracts, book chapters, knowledge syntheses, commentaries and grey literature will be excluded. **Ethics and dissemination:** This study does not require ethics approval. The results of the completed review will be published. **Prospero registration number:** CRD420251011567.

Nowrouzi-Kia et al. 2025.

BMJ Open, vol. 15, no. 10.

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Keywords: Rheumatology; systematic review; workplace.

Evidence Level: 1A

Link: <https://bmjopen.bmj.com/content/15/10/e107674.long>

The effect of positive psychology interventions on job satisfaction work engagement and withdrawal intentions among remote working cancer survivors

Advances in cancer treatment have significantly increased the survival rate of cancer patients, but these survivors often face challenges in the workplace. Existing literature highlights the significant influence of cancer on job performance, job satisfaction, and the increased risk of withdrawal intention. However, the effects of positive psychology interventions on cancer survivors, particularly in less urbanized settings and remote worker communities, remain underexplored. This study investigates the effects of positive psychology interventions on job satisfaction, work engagement, and withdrawal intentions among cancer survivors in rural and remote workforce communities. A Randomized Control Trial (RCT) was employed, involving 68 cancer survivors. The study used the Minnesota Job Satisfaction Questionnaire, the Utrecht Work Engagement Scale, and the Withdrawal Intention Scale to measure outcomes following a 14-session positive psychology intervention. The results revealed statistically significant improvements in the experimental group compared to the control group. Job satisfaction mean scores increased from 50.23 to 58.94, work engagement mean scores rose from 26.79 to 31.05, and withdrawal intentions mean scores decreased from 48.35 to 39.05. These findings highlight the potential of positive psychology interventions to address the unique challenges faced by cancer survivors in remote workforce communities, particularly in less urbanized areas. By enhancing job satisfaction and work engagement while reducing withdrawal intentions, these interventions can significantly contribute to the occupational well-being of cancer survivors, advocating for their integration into cancer care and organizational practices.

Yari-Renani et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Cancer survivors; job satisfaction; positive psychology; remote worker communities; rural communities.

Evidence Level: 2B

Link: <https://www.nature.com/articles/s41598-025-19250-w>

A survey of knowledge and perceptions of ADHD and autism spectrum disorder in the workplace at a large corporation

Neurodevelopmental conditions, such as attention-deficit/hyperactivity disorder (ADHD) and autism spectrum disorder (ASD), affect millions globally and are often misunderstood in professional environments. Embracing neurodiversity is essential for inclusivity and leveraging the unique strengths of these individuals. This study evaluated employees' knowledge and perceptions of neurodiversity, focusing on ADHD and autism in large corporations, to identify knowledge gaps and propose strategies to create more inclusive workplaces. Cross-sectional survey of 880 employees from AstraZeneca and Alexion in Spain was conducted in July 2024. It assessed knowledge of ADHD and autism, perceptions of working with neurodivergent individuals, and preferences for educational interventions. Data were collected via self-administered questionnaire and analyzed descriptively and analyzed using descriptive statistics to summarize frequencies, proportions, and central tendency measures. Awareness of ADHD (98.9%) and autism (98.1%) was high, but misconceptions persisted, with ~ 20% misidentifying intellectual disability as a symptom of autism, and restricted interests as a sign of ADHD. Comfort with potentially working with neurodivergent colleagues was rated 7.4/10, yet 60.6% felt that workplaces were inadequately adapted. Preferred educational approaches included school talks (87.5%) and social media (67.6%). Despite positive attitudes, knowledge gaps regarding neurodevelopmental disorders persist. Targeted interventions are essential to emphasize the strengths of neurodivergent individuals and foster adaptable, supportive workplaces that promote inclusivity and innovation.

Quintero et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Attention-deficit/hyperactivity disorder (ADHD); Autism spectrum disorder (ASD); diversity; innovation; neurodiversity; survey; workplace inclusion.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-025-17470-8>

Educational and occupational outcomes during early adulthood following surgically verified endometriosis at a young age: A register-based study

Introduction: Endometriosis is associated with educational and occupational challenges, including absenteeism and reduced capacity to study and work. We aimed to investigate long-term educational and occupational outcomes among women diagnosed with endometriosis at a young age. We also assessed whether depression, anxiety, and pain affected these outcomes. **Material and methods:** We conducted a historical, register-based cohort study of 4532 women diagnosed surgically with endometriosis before age 25 between 1987 and 2012, identified from the Finnish Hospital Discharge Register. Data on education, socioeconomic status, and occupation were available until 2019. We compared outcomes across age groups (25, 26-30, 31-35, and 36-40) between women with endometriosis and references (N = 9014), and within the endometriosis cohort by subtype and mental health status. Categorical and continuous variables were analyzed using Pearson's chi-squared and Wilcoxon tests. Occupational attainments were examined using multinomial logistic regression to assess odds ratios (OR) and mediation analysis to assess the contribution of parity, depression, anxiety, and pain. **Results:** Median age at diagnosis was 22.9 years (interquartile range 21.3-24.1). Follow-up data were available at ages 26 (n = 13 323, 98.4%), 31 (n = 12 465, 92.0%), and 36 (n = 10 293, 76.0%). Across all ages, women with endometriosis more often had primary or secondary education and were employed in lower-level positions (p < 0.001). Ovarian-only endometriosis was associated with a higher likelihood of tertiary education by ages 31-40 (p < 0.001). Women with endometriosis and preindex depression or anxiety had lower education at younger ages and were more often students or pensioners from age 26 onward (p < 0.001). In multinomial regression, women with endometriosis appeared to attain their highest occupational statuses earlier but at a lower level than matched references. Compared to blue-collar workers, they had lower crude odds of being managers and professionals (OR 0.88, 95% CI [0.81-0.96]). But this association reversed when pain was included in the model (OR 1.15, [1.04-1.28]). Depression/anxiety and pain significantly appeared to be mediating factors via suppressing occupational advancement. **Conclusions:** Endometriosis diagnosed at a young age is associated with lower educational and occupational attainment, highlighting the long-term socioeconomic impacts. Painful subtypes and preexisting depression or anxiety were associated with poorer outcomes.

Rasp et al. 2025.

Acta Obstetricia et Gynecologica Scandinavica, vol. 104, no. 10.

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(<https://creativecommons.org/licenses/by-nc/4.0/>)

Keywords: Education; occupation; pain; socioeconomic status; work; workability; young women.

Evidence Level: 4B

Link: <https://obgyn.onlinelibrary.wiley.com/doi/10.1111/aogs.70022>

Employment disruption and financial burden associated with gastrointestinal cancers

Background: Understanding the extent of employment disruption and the financial strain faced by individuals with GI cancer is crucial to develop targeted support services. We sought to investigate employment disruption and financial burden among patients with gastrointestinal cancer (GI) diagnosis.

Methods: Patients diagnosed with GI cancer were identified using the MarketScan database. Multivariable Cox proportional hazards models were used to evaluate the risk of employment disruption among patients with a GI cancer diagnosis. **Results:** A total of 11,832 individuals with GI cancer were included. Median patient age was 54 years (IQR: 49-59) with a majority of patients being male (n=7054; 59.6%). In the year following a GI cancer diagnosis, 13.8% (n=1638) of patients experienced employment disruption. Notably, individuals working in finance (HR 1.66, 95% CI 1.37-2.02), manufacturing (HR 1.19, 95% CI 1.01-1.42), and the transportation industry (HR 1.33, 95% CI 1.11-1.60) were at a higher risk of experiencing employment disruption. Patients with GI cancer had higher out-of-pocket (OOP) costs (\$3250 [IQR: \$1756-\$5,255] vs.

\$453 [IQR: \$142-\$1189]), more workdays missed (50 [IQR: 28-\$72] vs. 5 [IQR: 2-10]) (both $p < 0.001$) and a threefold higher risk of employment disruption (HR 3.16, 95% CI 2.96-3.38) compared with individuals without a GI cancer diagnosis. **Conclusion:** Patients with GI cancer are three times more likely to experience employment disruption and face significant financial burdens. Targeted measures, such as flexible work arrangements, job protection policies, and access to vocational rehabilitation services, are needed for patients with cancer.

Khalil et al. 2025.

Annals of Surgical Oncology, vol. 32, no. 10.

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Keywords: Cancer; employment; financial burden; gastrointestinal.

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1245/s10434-025-17683-1>

Impact of head and neck cancer on the income of Italian employees

Purpose: In recent decades, survival rates for head-and-neck (H&N) cancers have risen, drawing attention to survivors' working reintegration after treatments. This cohort study aims to evaluate the effect of H&N tumours on the income of employees in the private sector in Italy. **Methods:** Data were extrapolated from the WHIP-Salute archive, which contains work and health information of workers of the private sector in Italy. Incident cases of H&N cancer (between 2004 and 2013) were matched with cancer-free workers using an Optimal Variable Ratio Matching. Linear regression models were used to estimate the effect of H&N tumours on weekly income in the year of diagnosis and in the subsequent two years, overall and stratifying according to sex, job position, and cancer stage. **Results:** 592 H&N cancer cases were identified, predominantly male (86%), blue-collar workers (72%), with localized disease (60%). A significant decline in the average weekly income for workers with cancer compared to their cancer-free counterparts was evident, both in the year of diagnosis ($\beta = -38.59$, $p < 0.001$) and in the next two years ($\beta = -35.60$, $p < 0.001$, and $\beta = -29.95$, $p < 0.001$, respectively). Similar trends were observed in stratified analyses. **Conclusions:** This study suggests a short-term disparity in weekly income between workers with H&N cancer and their cancer-free counterparts. Reasons may lie in reduced working capacity of patients following cancer treatments. **Implications for cancer survivors:** Employer awareness about survivors' conditions can enhance workplace inclusivity. Furthermore, the implementation of ad-hoc policies may lead to a successful reintegration of H&N cancer survivors into the workforce.

Macciotta et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Cancer; head and neck; income; occupation.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24801-x>

Workplace culture of health and self-management behaviours among employees with type 2 diabetes: A cross-sectional moderated mediation study in urban China

Objectives: To examine (1) the mediating roles of self-efficacy and future-oriented time perspective (FTP) in the association between workplace culture of health (COH) and diabetes self-management and (2) the moderating effect of diabetes distress on the relationship between self-efficacy and FTP among employees with type 2 diabetes mellitus (T2DM). **Design:** A cross-sectional survey. **Setting:** This study was conducted among employees with T2DM recruited from the Endocrinology Outpatient Departments at three tertiary hospitals in Taiyuan City, Shanxi Province, China, between March and October 2024. **Participants:** The participants were 462 employees with T2DM who had been employed at their current organisations for at least 3 months following their T2DM diagnosis. **Methods:** Data on demographics, diabetes-related and work-related factors, workplace COH, self-efficacy, time perspective, diabetes distress and self-management performance were collected via a survey. The moderated mediation effects were examined using Hayes's PROCESS macro. **Results:** Workplace COH was associated with diabetes self-management both directly ($\beta = 0.251$, 95% CI 0.080 to 0.422, $p < 0.01$) and indirectly (indirect effect = 0.303, 95% CI 0.190 to 0.419). Two significant indirect pathways were identified: (1) workplace COH $\rightarrow$ self-efficacy $\rightarrow$ diabetes

self-management (indirect effect=0.207, 95% CI 0.110 to 0.308); (2) workplace COH → self-efficacy → FTP → diabetes self-management (indirect effect=0.093, 95% CI 0.051 to 0.144). However, the indirect pathway: workplace COH → FTP → diabetes self-management was not significant (indirect effect=0.004, 95% CI -0.055 to 0.063). Additionally, a significant interaction (β = -0.356, 95% CI -0.566 to -0.146, $p < 0.01$) indicated that diabetes distress moderated the relationship between self-efficacy and FTP. **Conclusion:** This study demonstrated that workplace COH was associated with diabetes self-management both directly and indirectly, specifically through self-efficacy alone and serially through self-efficacy and FTP; it also confirmed that diabetes distress weakens the effect of self-efficacy on FTP, thereby providing a basis for developing interventions to improve self-management among employees with T2DM.

Li et al. 2025.

BMJ Open, vol. 15, no. 10.

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Keywords: Diabetes Mellitus, Type 2; occupational health services; self-management.

Evidence Level: 4B

Link: <https://bmjopen.bmj.com/content/15/10/e100263.long>

Occupational Exposure

Occupational hazards and bladder cancer: An umbrella review of the risk in workers exposed over the past 30 years

Background: Occupational exposure accounts for the second preventable risk factor for bladder cancer (BC), after smoking. **Objective:** This study aimed to extract evidence-based data from the systematic reviews that included studies primarily from the past 30 years, based on a clearly defined method of exposure assessment. **Methods:** A literature search in PubMed, Web of Science, ScienceDirect, and Embase was conducted using variations of the keywords "BC," "occupational exposure," and/or "occupation." The inclusion criteria for the umbrella review were the following: systematic reviews and meta-analyses focused on occupational exposure, with a clear definition of the exposure assessment, a risk estimate for BC, and a majority of data from 1993 to 2023. We did not include other forms of reviews or systematic reviews focused on the general population and environmental exposure. Data were synthesized based either on occupations or on occupational hazards. After the overlap checking, the remaining reviews were assessed for quality using AMSTAR 2 criteria and afterwards classified for high, moderate, or low evidence using the GRADE scale. **Results:** We found relevant associations with a high level of evidence for firefighters, hairdressers, painters, workers in the petroleum industry, and dry cleaners exposed to tetrachloroethylene. Concerning hazards, exposure to ortho-toluidine was also confirmed to be a risk by recent studies. Welders, veterans, and those exposed to hexavalent chromium at higher risk need more well-designed studies to be confirmed. **Conclusion:** Despite longstanding recognition of certain risks, occupational exposure remains insufficiently investigated. Recent data support the inclusion of occupations and hazards in the individual risk assessment for BC.

Mandanach et al. 2025.

Frontiers in Public Health, vol. 13.

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Keywords: Bladder cancer; cancer risk; occupational carcinogens; occupational exposure; umbrella review.

Evidence Level: 1A

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1667873/full>

Occupational-related exposure to diesel exhaust and kidney cancer: Systematic review and meta-analysis of cohort studies

Background: The association between diesel exhaust and cancer other than the lung is not well established. We aimed to conduct a systematic review and meta-analysis on the association between diesel and kidney cancer in workers. **Methods:** Two trained researchers conducted a systematic review to identify cohort studies examining the relationship between occupational exposure to diesel exhaust and the risk of cancer other than lung cancer. Of the 43 retained studies, 15 reported information on kidney cancer. We

performed random-effects meta-analyses for ever-exposure to diesel exhaust. Summary relative risks (RR) and 95% confidence intervals (CI) were calculated for the association between diesel exhaust exposure and kidney cancer. **Results:** Overall, the RR of kidney cancer was 1.08 (95% CI=1.01-1.15, heterogeneity $p=0.1$, $I^2=28.6\%$). The summary RR was 1.08 for incidence (95% CI=1.01-1.16; $I^2=36.7\%$) and 1.09 for mortality (95% CI=0.92-1.30, $I^2=14.5\%$), p of heterogeneity=0.914. The summary RR of European studies was 1.08 (95% CI=1.00-1.16, $I^2=37.8\%$), that of USA/Canada studies was 1.10 (95% CI=0.94-1.29, $I^2=8.5\%$), p of heterogeneity=0.837. Publication bias was not detected. **Conclusions:** Workers exposed to diesel exhaust may experience an increased risk of developing kidney cancer, although the evidence is not entirely consistent, and residual confounding cannot be excluded.

Collatuzzo et al. 2025.

La Medicina del Lavoro, vol. 116, no. 5.

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Keywords: Exposure; diesel exhaust; kidney cancer.

Evidence Level: 1A

Link: <https://mattioli1885journals.com/index.php/lamedicinadellavoro/article/view/17014>

Heat in the transport sector: Measured heat exposure and interventions to address heat-related health impacts in the minibus taxi industry in South Africa

High temperatures, heat and heatwaves are being experienced more frequently and with greater intensity in many parts of the world, including South Africa, and record-breaking maximum temperatures are becoming more common. Exposure to heat has adverse impacts on human health and wellbeing. The transport sector and its users are vulnerable to heat both inside vehicles as well as in places where people wait for public transport. We sought to assess the temperatures experienced in minibus taxis, a common mode of transport in South Africa and in minibus taxi ranks as well as the heat-related perceptions of minibus taxi drivers working in the Chesterville Taxi Association in Durban. We also observed heat-related elements in minibus taxi ranks. Data from temperature loggers showed that temperatures inside minibus taxis reached up to 39 °C and were between 3-4 °C warmer than outdoors. For around 11 h every day, temperatures inside minibus taxis were warmer than 27 °C - the temperature that is linked to heat-health symptoms. Taxi drivers ($N = 16$) all agreed they feel hot in the minibus taxi and more than 90% said they drink water to try to cool down. Taxi ranks were lacking in supply of drinking water and shade for minibus taxis and seating. With the projected increase in temperatures caused by climate change, it is imperative to co-develop mitigation and adaptation strategies to minimise heat-related human health impacts in minibus taxis and taxi ranks especially in low- and middle-income countries.

Wright et al. 2025.

International Journal of Biometeorology, vol. 69, no. 10.

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Keywords: Climate change; environmental health; interventions; low- and middle-income countries; public health; temperature.

Evidence Level: 3B

Link: <https://link.springer.com/article/10.1007/s00484-025-02935-2>

Healthcare providers' knowledge, attitude, and practice regarding occupational exposure to human papillomaviruses

Background: Occupational exposure to human papillomaviruses (HPV) poses a potential health risk to healthcare providers, yet preventive awareness and behaviors remain unclear. Therefore, this study aimed to investigate the knowledge, attitude, and practice (KAP) of healthcare providers toward occupational exposure to HPV. **Methods:** This cross-sectional study was conducted between October 2023 and February 2024 at the First Affiliated Hospital of the Medical College of Shantou University. The participants included healthcare providers in gynecology, dermatology, or coloproctology departments. A self-designed questionnaire was employed to collect demographic characteristics and assess KAP toward occupational exposure to HPV. The exploration of the relationships between KAP was performed through Structural Equation Modeling (SEM). **Results:** This study enrolled 1059 participants with a mean age of 34.76 ± 9.56

years. Most participants were female (77.90%), with a bachelor's degree (46.55%). The mean KAP scores were 19.96 ± 6.20 (possible range: 0-28), 20.84 ± 2.62 (possible range: 6-30), and 24.43 ± 6.50 (possible range: 8-40). In the SEM analysis, knowledge positively influenced attitude ($\beta = 0.171$, $P < 0.001$), and practice ($\beta = 0.091$, $P = 0.016$). Attitude positively influenced practice ($\beta = 0.254$, $P = 0.001$). **Conclusions:** Healthcare providers demonstrated a moderate knowledge, attitude, and practice towards occupational HPV exposure. Educational and training activities should be implemented to enhance the KAP of healthcare providers toward occupational HPV exposure.

Wu et al. 2025.

BMC Medical Education, vol. 25, no. 1.

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Keywords: Cross-sectional study; healthcare providers; human papillomavirus; knowledge, attitude, practice; occupational hazard.

Evidence Level: 4B

Link: <https://bmcmmededuc.biomedcentral.com/articles/10.1186/s12909-025-08059-w>

HBM4EU e-waste study - Occupational exposure assessment to chromium, cadmium, mercury and lead during e-waste recycling

Processing of electronic waste (e-waste) causes the release of toxic substances which may lead to occupational exposure. The study aimed to gather information on potential occupational exposure during e-waste recycling, with a focus on biomonitoring of chromium, cadmium, mercury and lead. In eight European countries, 195 workers involved in the recycling of lead batteries, white goods, brown goods and metals and plastics were studied. These workers were compared to 73 controls with no direct involvement of e-waste recycling or other metal processing activities. The samples collected consisted of urine, blood and hair samples, along with personal air samples, hand wipes, settled dust samples and contextual information. Chromium, cadmium, mercury and lead was measured in urine, hair, air samples, hand wipes and settled dust; cadmium and lead in whole blood and chromium in red blood cells. Results showed that lead exposure is of concern, with workers from all five types of e-waste showing exposure, with elevated measurements in all matrices. Internal exposure markers were positively correlated with markers of external exposure, indicating workers are not adequately protected. Exposure to mercury and cadmium was also observed but to a much lesser extent with raised cadmium concentrations in urine and blood of all workers when compared to controls and raised mercury concentrations were found in brown goods workers when compared to controls. This study has highlighted exposure concerns when processing e-waste, particularly for lead across all waste categories studied, indicating a need for improved control measures in this sector.

Leese et al. 2025.

Environmental Research, vol. 15.

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Keywords: Blood; cross-sectional studies; electronic waste; hair; occupational health; toxic metals; urine.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0013935125011430?via%3Dihub>

Workplace exposures vary across neighborhoods in the US: Implications on social vulnerability and racial/ethnic health disparities

Ignoring workplace exposures that occur beyond the local residential context in place-based risk indices like the CDC's Social Vulnerability Index (SVI) likely misclassifies community exposure by under-counting risks and obscuring true drivers of racial/ethnic health disparities. To investigate this hypothesis, we developed several place-based indicators of occupational exposure and examined their relationships with race/ethnicity, SVI, and health inequities. We used publicly available job exposure matrices and employment estimates from the United States (US) Census to create and map six indicators of occupational hazards for every census tract in the US. We characterized census tracts with high workplace-low SVI scores. We used natural cubic splines to examine tract level associations between the percentage of racial/ethnic minorities (individuals who are not non-Hispanic White) and the occupational indicators.

Lastly, we stratified each census tract into high/low occupational noise, chemical pollutant, and disease/infection exposure to examine racial/ethnic health disparities to diabetes, asthma, and high blood pressure, respectively, as a consequence of occupational exposure inequities. Our results show that racial/ethnic minority communities, particularly those that are also low-income, experience a disproportionate burden of workplace exposures that may be contributing to racial/ethnic health disparities. When composite risk measures, such as SVI, are calculated using only information from the local residential neighborhood, they may systematically under-count occupational risks experienced by the most vulnerable communities. There is a need to consider the role of occupational justice on nationwide, racial/ethnic health disparities.

Shkembi et al. 2025.

Journal of Racial and Ethnic Health Disparities, vol. 12, no. 5.

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Keywords: Disparities; environmental justice; occupational justice; social determinants of health; social vulnerability index.

Evidence Level: 4B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12446402/>

Prevalence of ototoxic chemical exposure, noise exposure and hearing difficulty among workers in the United States, 2023

Objective: This study estimated the prevalence of hearing difficulty and workplace exposures to ototoxic chemicals and noise within US industries and occupations. **Methods:** This cross-sectional study examined 2023 National Health Interview Survey data for 17,726 workers. Weighted prevalence and adjusted prevalence ratios of self-reported hearing difficulty and self-reported workplace exposures to ototoxic chemicals, noise and a combination of these exposures were estimated. **Results:** Eleven percent of workers reported hearing difficulty. Within the past year, 13% were exposed to ototoxic chemicals, 16% were exposed to noise, and 7% were exposed to both. Twenty-eight percent had a history of noise exposure. **Conclusions:** Workplace hearing hazards are common. This study was the first to report the overall prevalence of ototoxic chemical exposure among US workers. This exposure cannot be overlooked when protecting worker hearing.

Masterson et al. 2025.

Journal of Occupational and Environmental Medicine, vol. 67, no. 10.

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Keywords: Construction; hazardous noise; manufacturing; mining; occupational hearing loss; ototoxic chemicals; secondhand smoke; surveillance.

Evidence Level: 4B

Link:

https://journals.lww.com/joem/abstract/2025/10000/prevalence_of_ototoxic_chemical_exposure_noise.1.aspx

Species-resolved exposure to fungi and bacteria, dust, and endotoxin during recycling of diverse waste types and systemic inflammatory response in workers

The waste recycling workforce is growing across Europe. This study investigates the airborne exposure of workers recycling plastic, paper/cardboard, and electronic (e) waste, and examines whether serum levels of inflammatory markers correlate with exposure. Exposure was measured repeatedly and analysed for inhalable and respirable dust, inhalable endotoxin, fungi, and bacteria. Microorganisms were identified using MALDI-TOF MS on cultured microorganisms and bacteria by 16S rRNA marker-gene sequencing. Blood samples collected at the end of each workday were analysed for three markers of inflammation. Waste types/tasks had an impact on exposure levels for all exposures and temperature on exposure to anaerobic bacteria. Exposure levels to dust, endotoxin, and anaerobic bacteria differed between workers. Exposures were highest for those handling paper/cardboard and plastic waste. The alpha diversity indices for most exposures did not differ between types of waste handled, but eWaste was associated with a lower species richness. Beta diversity did not differ between indoor temperatures or waste types except for

mesophilic bacteria and bacteria (NGS-data). The species *Aspergillus niger*, *Penicillium brevicompactum*, *Bacillus cereus*, and *Staphylococcus equorum* were frequently detected. Serum levels of inflammatory markers increased with increasing exposure to dust, fungi or *Penicillium* spp, and anaerobic bacteria, but did not correlate with bacterial biodiversity indices. The study suggests further investigations of the impact of daily inhalation of bacteria able to grow anaerobically and fungi. Based on the high exposure levels, and the association between exposure and biomarkers of inflammation, it is advisable to explore risk management strategies aimed at minimizing worker exposure.

Madsen et al. 2025.

Ecotoxicology and Environmental Safety, vol. 304.

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Keywords: Anaerobic bacteria; aspergillus; endotoxin; green transition; inflammation; plastic waste; eWaste.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0147651325014423?via%3Dihub>

A nationwide analysis of heat and workplace injuries in the United States

Background: Exposure to heat leads to physiological and cognitive impairments that increase the risk of workplace injuries. This study estimates the number and proportion of work injuries reported to the United States Occupational Safety and Health Administration (OSHA) that can be attributed to heat exposure. These estimates contribute to the calculation of the benefits of standards, policies, and programs that reduce workplace exposure to extreme heat. **Methods:** We analyzed all 2023 injury cases reported to OSHA's Injury Tracking Application by establishments with 100 or more employees, primarily in high-hazard industries. Each injury was geocoded and matched with high-resolution weather data for the specific injury date. Using a case-crossover design, we compared heat index on each injury day (case) with matched non-injury control days for the same worker. Conditional logistic regression was applied separately for summer-only and year-round periods with a non-linear term for heat index to estimate the odds ratios for injury occurrence. We additionally examined heat-injury patterns by industry sectors and in states with/without workplace heat standards. **Results:** The odds of work injury increased non-linearly with a rising heat index: the pooled national estimate showed a clear upward trend starting around 85°F and accelerating above 90°F. Our results were consistent across nearly all industry sectors, including those that are predominantly indoors. Using a heat index of 80°F as reference, odds ratios (OR) of injuries at or above 90°F, 100°F and 110°F were 1.03 (95% confidence intervals [CI]: 1.02, 1.04), 1.10 (1.07, 1.13), and 1.20 (1.13, 1.26), respectively. At a heat index of 110°F or higher, the odds increased by 22% in states without occupational heat rules (OR=1.22; 1.15,1.29) versus 9% in states with rules (OR=1.09; 0.84, 1.41), suggesting a protective effect, although confidence intervals overlapped. Overall, we estimate 1.18% (95% empirical CI: 0.92%, 1.45%) of all injuries were attributable to heat exposure on days exceeding a heat index of 70°F.

Conclusion: Heat exposure increases the overall risk of work injury, an effect consistent across nearly all major industries.

Alahmad et al. 2025.

Environmental Health, vol. 24, no. 1.

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Keywords: Climate change; extreme heat; heat index; heat related injuries; heat rule; heat standards; OSHA; occupational heat.

Evidence Level: 4B

Link: <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-025-01231-1>

Ambient trichloroethylene exposure and Parkinson disease risk in Medicare beneficiaries

Background and objectives: Trichloroethylene (TCE) is an important environmental contaminant in the United States due to widespread use industrially. Epidemiologic studies suggest that occupational exposure to TCE and TCE-contaminated drinking water may increase the risk of Parkinson disease (PD). The aim of this study was to investigate the nationwide relationship between ambient TCE and PD risk. **Methods:** We performed a nationwide, population-based, case-control study to investigate the association between

incident PD in US Medicare beneficiaries aged 67 years and older in 2016-2018 and their residential exposure to ambient (outdoor) TCE in 2002. We assigned residence based on the latitude and longitude of Medicare beneficiaries' zip + 4 center 2 years before diagnosis/reference. We assigned TCE exposure based on census tract-level data from the US Environmental Protection Agency's (EPA's) National Air Toxics Assessment program. We used logistic regression to estimate relative risk (RR) adjusted for age, sex, race, smoking, health care utilization, rural-urban commuting area (RUCA), and PM2.5. We also mapped the nationwide geospatial pattern of ambient TCE and then explored high-resolution local PD risk patterns using MapGAM for the 10-mile radius around the top 3 TCE-emitting facilities from the EPA's Toxic Release Inventory in 2002. **Results:** We identified 221,789 incident PD cases (median age 78.8 years; 45% female) and 1,132,765 matched controls (median age 75.7 years; 57% female). We found a dose-dependent positive association between ambient TCE concentrations and PD risk, wherein beneficiaries exposed to the top decile of ambient TCE levels (0.14-8.66 µg/m³) had an RR for PD of 1.10 (95% CI 1.08-1.13) compared with those exposed to the lowest decile of TCE (0.005-0.01 µg/m³). We observed high levels of ambient TCE in the rust belt region of the United States and several smaller areas throughout the nation. Our MapGAM results suggested greater PD risk in the area surrounding 2 of the 3 highest ambient TCE-emitting facilities, one of which demonstrated a marked decreasing gradient of risk with increasing distance from the facility. **Discussion:** We identified a positive association between ambient TCE and PD risk, suggesting that TCE may contribute to PD. We identified relatively higher risk of PD near 2 TCE-emitting facilities. This study was limited to Medicare-aged individuals.

Krzyzanowski et al. 2025.

Neurology, vol. 105, no. 8.

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Keywords: Parkinson disease; Medicare; trichloroethylene.

Evidence Level: 4B

Link: <https://www.neurology.org/doi/10.1212/WNL.0000000000214174>

Predicting risk of heat-related injuries for individuals wearing personal protective equipment using smartwatches: Feasibility observational study

Background: The risk of developing heat-related illness increases when personal protective equipment (PPE) is worn, especially in hot and humid environments. While cooling strategies are effective, they must be applied preemptively or delivered promptly, which can be difficult if individuals are working in dangerous environments or wearing contaminated PPE. Wearable sensors can be leveraged to continuously monitor health including heart rate, respiration rate, blood oxygen levels, and physical activity. **Objective:** This study aims to (1) evaluate the use of wearable sensors for monitoring the real-time health of individuals wearing PPE to mitigate the risk of developing a heat-related illness and enable timely intervention, (2) understand how PPE may affect smartwatch data quality and comfort, and (3) identify circumstances in which people wearing PPE may not be able to wear a smartwatch. **Methods:** Individuals participating in planned field trainings or exercises where PPE was being worn were asked to wear Garmin Fenix 6 smartwatch (Garmin Ltd) before, during, and after the event to monitor health and recovery. These convenience cohorts were selected to understand the feasibility of using smartwatches with different types of PPE (ie, level C PPE and firefighter gear) for different types of training (ie, a simulated environmental cleanup exercise and skill and tactical maneuver training for new firefighter recruits). **Results:** Two data collections were conducted using the Garmin Fenix 6 smartwatch to assess wearability, data quality, and data accuracy. For the first effort, participants wore the watch for 3.9-5.1 days, and wear compliance ranged from 83.8% to 99.9%. For the second effort, participants wore the watch for the exercise only, which was 3.5 hours. Participants were able to wear the watches for the entire time that they were wearing PPE and did not report any adverse events. Changes in heart rate corresponded with changes in physical activity, providing evidence that physiology can be acceptably monitored during physical activity. Heart rate data artifact ranged between 5.8% and 9.3% and was highest for the control participant (second data collection) who was not wearing PPE. **Conclusions:** Based on the results obtained from the 8 pilot users, the Garmin Fenix 6 smartwatch is an appropriate choice for continuously monitoring the health of

individuals wearing PPE. The watch can be tolerated for extended wear periods and data quality is sufficient for monitoring heart rate and predicting core body temperature.

Hegarty-Craver et al. 2025.

JMIR Formative Research, vol. 9.

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Keywords: PPE; continuous monitoring; heat strain; heat-related illness; personal protective equipment; smartwatch; temperature; wearable.

Evidence Level: 4B

Link: <https://formative.jmir.org/2025/1/e72324>

Ethylene Oxide measurements From OSHA workplace investigations: Patterns in exposure by industry, occupation, and over time

Background: Ethylene oxide (EtO) is an occupational carcinogen; however, contemporary exposure scenarios in US workplaces are not well characterized within the literature. We aim to describe EtO exposure trends in the US workplace using historical data from the Occupational Safety and Health Administration (OSHA) Chemical Exposure Health Database and the OSHA Information System. **Method:** We collated and analyzed air sampling data collected between 1979 and 2020 to characterize exposures across key industries and occupations. We evaluated exposure by industry and occupational category, examined changes in exposures over time, and quantified the proportion of samples that exceeded existing occupational exposure limits. **Results:** Exposures generally decreased over time. However, the magnitude and pattern of reductions were not consistent across industries. Within the aggregated dataset, approximately 46% of samples exceeded the National Institute for Occupational Safety and Health recommended exposure limit (NIOSH REL) of 0.1 parts per million (ppm), and approximately 18% of samples exceeded the OSHA permissible exposure limit (PEL) of 1 ppm. 70% of samples collected from industrial sterilization workplaces exceeded the NIOSH REL. Exposure data was limited between 2000 and 2020, most notably for the health services and chemical manufacturing industries. **Conclusions:** Contemporary EtO exposures for key industries and occupational categories are poorly characterized. Still, exposures in the industrial sterilization industry appear higher than in other industries and have proportionally declined the least over time. Additional exposure assessment research and further efforts in occupational risk assessment are important to better understand the health burdens of workers exposed to EtO.

Christensen et al. 2025.

American Journal of Industrial Medicine, vol. 68, no. 10.

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Keywords: OSHA; ethylene oxide; sterilization; surveillance; workplace exposure.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/ajim.70008>

An updated mortality study of beryllium workers, 1925-2020

Objective: Update and expand a cohort of beryllium workers, to examine risks associated with beryllium solubility and mortality from lung cancer, all cancers, all causes, as well as other neoplasms (kidney, bladder, central nervous system) and other nonmalignant respiratory disease. **Methods:** The study conducted a retrospective cohort study of 17,149 workers employed in 15 US facilities (1925-2020). Data were analyzed using standardized mortality ratios referencing the US population and Cox models. **Results:** Lung cancer mortality was elevated among mixed beryllium (soluble and insoluble-exposed) workers hired pre-1955, but not among insoluble-only workers during any period. Other nonmalignant respiratory disease mortality was significantly elevated in the total cohort, driven by mortality among mixed-exposure facilities and among workers hired pre-1955. **Conclusions:** No increase in lung cancer or other mortality for any timeframe for workers at insoluble-only beryllium facilities was observed.

Fordyce et al. 2025.

Journal of Occupational and Environmental Medicine, vol. 67, no. 10.

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Keywords: Beryllium; epidemiology; lung cancer; mortality; occupational health.

Evidence Level: 4B

Link:

https://journals.lww.com/joem/fulltext/2025/10000/an_updated_mortality_study_of_beryllium_workers.14.aspx

Occupational exposure to pesticides reveals a miRNAs expression profile indicating multiple disease risks

Growing evidence links pesticide exposure to health issues, including pulmonary, cardiovascular, neurodegenerative diseases, and cancer. This study analyzed microRNA (miRNAs) expression in pesticide-exposed individuals and predicted the biological functions of these miRNAs through target gene analysis. A cohort of 23 pesticide applicators and 23 non-exposed individuals were recruited in Brazil. Serum pesticide quantification revealed a significant difference in the concentration of dichlorodiphenyldichloroethylene (DDE) between the two groups. Cellular analysis revealed increased frequencies of micronucleated, binucleated, pyknotic, and karyolytic cells in the exposed group. Plasma analysis identified 30 differentially expressed miRNAs, of which 20 were selected for further study based on receiver operating characteristic (ROC) curve analysis ($AUC \geq 0.75$, $p < 0.005$). These miRNAs targeted a total of 1004 validated target genes. The application of functional analysis yielded a total of 213 biological processes, 131 cellular components, and 170 molecular functions. Furthermore, 91 enriched pathways and 107 diseases with the most prevalent being neurological disorders, arthritis, and cancer, were associated with the predicted target genes. This study reveals biological pathways affected by pesticide exposure and highlights the critical role of miRNAs in disease pathogenesis, particularly for neurological conditions and cancers.

Francisco et al. 2025.

Ecotoxicology and Environmental Safety, vol. 304.

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Keywords: Genomic instability; MiRNAs; occupational exposure; pesticides.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0147651325014101?via%3Dihub>

Co-exposure to heat and noise on workers' health: evidence from a large-scale cross-sectional surveillance study in China

Objectives: This study aimed to investigate the synergistic effects of co-exposure to occupational heat and noise on multi-system health outcomes among Chinese workers, and to examine the mediating role of systemic inflammation, indicated by white blood cell (WBC) count. **Methods:** A cross-sectional analysis was conducted using data from the Fujian Workplace Occupational Hazards Comprehensive Surveillance Program (2020-2022), encompassing 10,275 workers from the manufacturing, petrochemical, mining, and construction industries. Multivariate logistic regression, relative excess risk due to interaction (RERI), random forest with SHAP values, and mediation analysis were used to explore interaction effects and mediating pathways. **Results:** Co-exposure to heat and noise in the workplace was associated with increased risks of hypertension (OR = 1.94, 95%CI:1.61-2.36; RERI = 0.26, P interaction <0.001) and abnormal ECG (OR = 1.81, 95%CI:1.48-2.12; RERI = 0.16, P interaction <0.001), indicating synergistic effects beyond individual exposures. WBC partially mediated the effects of occupational heat and noise exposure on hypertension (heat: 9.2%; noise: 7.4%; co-exposure: 15.3%), liver dysfunction (heat: 5.4%; noise: 13.2%; co-exposure: 11.5%), and abnormal ECG findings (heat: 7.0%; noise: 6.4%; co-exposure: 8.7%). Machine learning models further confirmed that interaction between heat and noise was a stronger predictor of adverse health outcomes than either exposure alone. **Conclusion:** Co-exposure to occupational heat and noise significantly exacerbates health risks across multiple organ systems, with systemic inflammation playing a partial mediating role. These findings highlight the importance of integrated occupational hazard assessments and targeted interventions that consider multiple concurrent occupational hazards.

Li et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Co-exposure; heat exposure; interaction; noise exposure; occupational health.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24592-1>

Biomarkers of kidney function and injury across fire seasons and during a mid-season fire incident in the Wildland Firefighter Exposure and Health Effect (WFFEHE) Study

Background: Occupational heat stress among wildland firefighters (WFFs) performing arduous work or working in hot work environments may cause kidney dysfunction and injury. **Methods:** Kidney function and injury biomarkers (serum and urine) were measured among 39 WFFs pre- and post-fire season in 2018-2019. The same biomarkers were measured in 19 of these 39 WFFs over 3 days during a 2019 mid-season fire incident. Median differences in biomarker concentrations across the fire season and across the mid-season incident were evaluated using the Sign test. The primary outcome of interest was the cystatin C-based estimated glomerular filtration rate (eGFR_{Cys}). **Results:** The eGFR_{Cys} decreased (median difference = -5 mL/min/1.73 m²; interquartile range [IQR] = -8, -2 mL/min/1.73 m²; p = 0.008), and 53% of participants lost ≥ 2% of their body weight across the first day of the mid-season fire incident. Median eGFR_{Cys} did not decrease across the fire season (median difference = 0 mL/min/1.73 m²; IQR = -5, 5 mL/min/1.73 m²; p = 0.52). The albumin-creatinine ratio and the ratios of urine kidney injury molecule-1 and neutrophil gelatinase-associated lipocalin concentrations to urine osmolality increased across ≥ 1 day during the mid-season incident. **Conclusions:** A temporary decrease in kidney function and changes in biomarkers of kidney injury were observed during a wildland fire incident. Additional research is warranted to confirm these findings, assess associations with occupational heat stress, and determine whether persistent, clinically relevant kidney injury and dysfunction occur among WFFs over time. The findings also support the need for continued efforts to promote optimal hydration of WFFs.

Pinkerton et al. 2025.

American Journal of Industrial Medicine, vol. 68, no. 10.

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Keywords: Firefighters; kidney function; wildfire; wildland.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/ajim.70006>

Assessing carbon monoxide exposure in food delivery workers by using exhaled air with consideration of smoking habits

Background: The number of food delivery workers engaging in online food delivery (OFD) services has soared recently. While they are exposed to air pollutants from traffic exhaust frequently, their exposure to carbon monoxide (CO) is seldom assessed. This study aimed to assess the CO exposure of food delivery workers using exhaled air with consideration of smoking habits. **Methods:** We recruited food delivery workers from OFD services and compared their CO concentrations in exhaled air with those of a reference group. In addition, we used a questionnaire to gather data on sociodemographic characteristics, health behaviors, health status, and work-related conditions. **Results:** We enrolled 156 food delivery workers and a reference group of 49 members. The results showed that food delivery workers had a higher mean CO concentration in exhaled air (4.79 ppm vs. 1.51 ppm, p < 0.001) as well as a higher proportion of smokers (25.0% vs. 4.1%, p < 0.001). While food delivery workers with smoking habits had a much higher mean CO concentration in exhaled air than those without smoking habits (14.46 ppm vs. 1.57 ppm, p < 0.001), amongst non-smokers, the CO concentration was still higher in food delivery workers than in the reference group (1.57 ppm vs. 1.13 ppm, p = 0.002). Among smokers, smoking might contribute 89% of the CO in exhaled air. **Conclusions:** Food delivery workers had higher CO concentrations in exhaled air than the reference group, indicating higher exposure levels. Smoking is an important contributing factor when using exhaled air for CO exposure assessment.

Li et al. 2025.

Journal of Epidemiology and Global Health, vol. 15, no. 1.

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Keywords: Carbon monoxide; exhaled air; food delivery worker; occupational exposure; online food delivery service; traffic emission.

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1007/s44197-025-00468-w>

Oxidative damage, genetic and epigenetic alterations in hexavalent chromium exposed workers: A cross-sectional study within the SafeChrom project

Background: Hexavalent chromium (Cr(VI)) is a lung cancer carcinogen. However, the genotoxic and mutagenic effects of Cr(VI) in humans at low-to-moderate occupational exposure levels are unknown. This study aims to investigate the relationship between occupational exposure to Cr(VI) and the presence of oxidative damage, genetic and epigenetic alterations. **Methods:** We included 113 Cr(VI) exposed workers in 14 companies and 72 controls recruited within the SafeChrom project. Cr(VI) was measured in inhalable dust and total chromium in urine (U-Cr) and red blood cells (RBC-Cr). Analysed effect biomarkers included urinary 8-hydroxy-2'-deoxyguanosine (8-OHdG), micronuclei in peripheral blood reticulocytes (MNRET), blood relative mitochondrial DNA copy number (mtDNA-cn), relative telomere length (TL), and blood DNA methylation of four lung cancer-related genes (F2RL3, LINE-1, MGMT promoter and SEMA4B). **Results:** The median inhalable Cr(VI) concentration among the exposed workers was 0.11 µg/m³ (5th-95th percentile: 0.02-8.44). Exposed workers showed higher 8-OHdG, TL, and MGMT promoter methylation levels and lower mtDNA-cn and MNRET compared with controls. Company-based differences in biomarkers were observed. Univariate analysis showed that TL was positively correlated with U-Cr, and 8-OHdG and MGMT promoter methylation were positively correlated with RBC-Cr. Multivariate analyses with adjustment for possible confounders showed higher 8-OHdG, TL, and MGMT promoter methylation in exposed workers compared with controls. **Conclusions:** Low-to-moderate Cr(VI) exposure was associated with higher oxidative stress, longer telomeres and epigenetic alterations, changes that previously have been linked to lung cancer risk. This study highlights the molecular impacts of Cr(VI) exposure, underscoring the importance of reducing the exposure to Cr(VI).

Jiang et al. 2025.

Environmental Research, vol. 283.

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Keywords: Biomonitoring; effect biomarkers; hexavalent chromium; occupational exposure; toxicity.

Evidence Level: 5B

Link: <https://www.sciencedirect.com/science/article/pii/S001393512501374X?via%3Dihub>

A human sentinel surveillance framework for comprehensive exposure assessment in occupational and environmental health

Environmental and occupational exposures are increasingly recognized as major determinants of population health, contributing to the rising burden of chronic diseases and adverse health outcomes, yet traditional surveillance systems are often inadequate for capturing the complex and evolving nature of human exposures across diverse settings. In response, we propose the Human Sentinel Surveillance Platform (HSSP), a new digital infrastructure based on sentinel surveillance framework, to monitor exposures and health effects in real-time and via trained and motivated health professionals in order to identify emerging exposure trends. This perspective paper defines the foundational pillars, data governance principles, and operational workflows of the HSSP, while critically examining its potential impact on health policy, practice, and exposome research. The platform integrates biomarker-based monitoring, validated questionnaires, and adaptive protocols that can be updated in response to new threats, ensuring methodological relevance over time. Its four foundational pillars include: (1) a structured network of health care professionals, (2) targeted training and capacity building, (3) harmonized data collection using standardized tools, and (4) secure data repository and management aligned with ethical and regulatory standards. By incorporating multidisciplinary data from epidemiology, toxicology, genetics, and exposure science, HSSP enables comprehensive exposure characterization, longitudinal analysis of exposure-health relationships, early warning and timely public health regulatory and preventive

interventions. This scalable and adaptable platform bridges critical data gaps in exposome research by capturing dynamic human-environment interactions and generating actionable insights to inform targeted interventions and provide evidence-based foundations for public health policy.

Aktaş et al. 2025.

Frontiers in Public Health, vol. 13.

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Keywords: Data analysis; environmental exposure; exposome; exposure assessment; human biomonitoring; occupational exposure; risk assessment; sentinel surveillance.

Evidence Level: 6B

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1641884/full>

Sedentary Practices

Childhood and current socioeconomic position as determinants of sedentary time among young and early midlife employees

Socioeconomic position (SEP) is one of the primary determinants of sedentary behaviour. The study investigated the associations between life-course socioeconomic circumstances and sedentary time (ST) among young and early midlife municipal employees. We used data from the 2017 Helsinki Health Study (N = 4532), which targeted 19- to 39-year-old employees of the City of Helsinki. SEP was assessed through both childhood and current indicators: parental and own educational level, childhood and current economic difficulties, occupational class, income, and wealth. ST was self-reported in minutes per weekday across five behavioural domains. Linear regression models examined differences in STs between socioeconomic groups, with 95% confidence intervals (CIs). All SEP indicators except childhood economic difficulties were associated with total ST. Participants in the highest income quartile reported 76 min (95% CI 60-92) more ST per day than those in the lowest quartile. Similarly, participants with higher education sat 69 min (95% CI 55-84) longer than those with lower education. The largest differences were observed during working hours, with higher education and income associated with more ST. In contrast, lower SEP was associated with more ST spent at home in front of a television/computer and in vehicles. Although individuals with higher SEP often engage in more physical activity and have better health behaviours overall, they are also the most sedentary, especially during work hours. The association between SEP and ST varies across behavioural domains, emphasizing the importance of context-specific interventions.

Kekäläinen et al. 2025.

European Journal of Public Health, vol. 35, no. 5.

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Keywords: Childhood; socioeconomic position; sedentary time; early midlife; employees.

Evidence Level: 4B

Link: <https://academic.oup.com/eurpub/article/35/5/916/8245262?login=false>

Physical Activity

Occupational physical activity and stroke mortality in male Swedish construction workers between 1971 and 2015

Background: Contrary to leisure-time physical activity, high levels of occupational physical activity (OPA) have been linked to cardiovascular disease and mortality. Many occupations in the construction industry are known to have high levels of OPA. **Aims:** This study investigated OPA and stroke mortality risk among 299 382 Swedish male construction workers. **Methods:** OPA was derived from job titles and categorized as low, medium or high, and stroke mortality was ascertained via the Swedish National Cause of Death Register. The average follow-up was 24 years resulting in a total of 6.9 million person-years, during which 4606 participants died from stroke. Relative risks were estimated with robust Poisson regressions and adjusted for age, calendar year, body mass index and smoking. **Results:** The relative risk for overall stroke

mortality was higher in the medium and high OPA groups compared to the low OPA group [1.15 (1.04, 1.27) and 1.13 (1.04, 1.23), respectively], with no clear dose-response association. Age-stratified analyses showed that higher OPA increased stroke mortality risk in participants between 70 and 89 years.

Participants with high versus low OPA had a higher risk of ischaemic stroke mortality [1.15 (1.01, 1.31)].

Conclusions: Construction workers with high OPA have a slight increase in overall stroke mortality, mainly after retirement.

Öhlin et al. 2025.

Occupational Medicine, vol. 75, no. 7.

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(<https://creativecommons.org/licenses/by-nc/4.0/>)

Keywords: Physical activity; stroke mortality; construction workers.

Evidence Level: 4B

Link: <https://academic.oup.com/occmed/article/75/7/412/8157372?login=false>

Musculoskeletal Health

Prognostic factors for poor recovery in active-duty military personnel with musculoskeletal disorders: A systematic review with meta-analysis

Background: Military personnel are twice as likely as civilians to experience chronic musculoskeletal pain. Identifying prognostic factors for poor recovery from musculoskeletal disorders may support the development of tailored care pathways to improve outcomes. **Objectives:** Identify prognostic factors for poor recovery in active military personnel with musculoskeletal disorders. **Design:** Systematic review of prognostic studies including prospective, retrospective, and secondary analyses of randomised controlled trials. **Methods:** MEDLINE, EMBASE, AMED, PsychInfo, Cinahl, Scopus, and SPORTDiscus databases were searched from inception to March 2025. Studies were included if they evaluated prognostic factors for association with recovery outcomes (pain, disability, work status, or perceived recovery) in active military personnel with any musculoskeletal disorder. Two reviewers independently screened eligible studies and assessed methodological quality using the Quality in Prognostic Studies (QUIPS) tool. Descriptive analysis of multivariate data was undertaken with meta-analyses performed where possible. **Results:** Twenty-eight studies were included in this review. The factor most strongly associated with poor short-term outcome (disability) was initial pain severity [OR 3.88 (95 %CI 1.50-10.07)] followed by male sex (outcome restricted duty) [OR 2.63 (95 %CI 1.57-4.40)]. The factor most strongly associated with poor long-term outcome (restricted duty) was the presence of comorbid psychiatric diagnosis [RR 6.02 (95 % 4.25-8.51)].

Conclusions: Assessing initial pain severity and psychological stressors may help clinicians identify military personnel with musculoskeletal disorders at risk of poor outcome. Understanding the interaction between occupational psychological stressors and pain symptoms may identify modifiable factors that can be targeted to improve recovery.

Olivotto et al. 2025.

Musculoskeletal Science and Practice, vol. 79.

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Keywords: Armed services; disability; injury; military health; pain; return to work.

Evidence Level: 1A

Link: <https://www.sciencedirect.com/science/article/pii/S2468781225001316?via%3Dihub>

A systematic review and meta-analysis on the prevalence and demographic risk factors of work-related musculoskeletal disorders in construction workers

Introduction: Construction workers, who are constantly engaged in physically demanding tasks, face a significant prevalence of work-related musculoskeletal disorders (WMSDs). These conditions affect their quality of life and work performance and call for immediate attention. This study delves into the prevalence of WMSDs among construction workers and the associated demographic risk factors, highlighting the issue's urgency. **Methods:** Our research process was thorough. Our search spanned electronic databases like PubMed, Scopus, Cochrane, Embase, and Web of Science. We included studies that involved adult

construction workers reporting the prevalence of WMSDs such as back pain, neck pain, and other musculoskeletal diseases. The data were rigorously analyzed using R software, with subgroup and meta-regression analyses to assess the association between demographic factors and the prevalence of WMSDs.

Results: The prevalence pooled by the meta-analysis was 59% for WMSDs from 14 studies with extensive study-level heterogeneity. Subgroup analysis illustrated differences by region, with higher prevalence in Asia (63%) compared to America (39%) and Africa (52%). Analysis of demographic factors identified the prevalence as significantly higher in the male gender (OR = 19.60). Workers over 40 were likelier to have WMSDs (OR = 39.04). Daily work hours were inconsistently associated. Lower back and shoulders were the most affected body regions. **Conclusion:** Our findings underscore the need for further research to identify other risk factors and design effective prevention strategies. The high incidence of WMSDs among construction workers, significantly related to demographic factors such as gender and age, calls for continuous investigation and the introduction of targeted interventions like work rotation, ergonomic training, and psychosocial support. These measures are crucial in preventing WMSDs and promoting the well-being and performance of construction workers.

Santos et al. 2025.

Frontiers in Public Health, vol. 13.

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Keywords: Construction workers; demographic risk factors; meta-analysis; prevalence; work-related musculoskeletal disorders.

Evidence Level: 1A

Link: <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2025.1651921/full>

Function and quality of life one to four years following major hand injury: A cross-sectional survey

This study explored function, symptoms and health-related quality of life, one to four years post-replantation or revascularization of one or multiple fingers or the hand. Data regarding injury, function, work status, symptoms, sense of coherence and health-related quality of life (EQ-5D-5 L) were collected via phone interview, online survey, and medical records. Function was measured using the Disability of the Arm, Shoulder and Hand questionnaire (DASH), and injury severity was assessed using the Modified Hand Injury Severity Score. Sixty patients participated, they had a median DASH score of 15.8 and median EQ-5D VAS score of 77. Ninety-five percent had returned to their previous work situation. Cold intolerance and stiffness were the most persistent symptoms. Results showed no correlation between injury severity and DASH ($r_s = 0.1$), but a significant correlation between sense of coherence and DASH ($r_s = 0.43$). Overall, function and health-related quality of life were only slightly impacted 1-4 years post-injury.

Larsen et al. 2025.

Hand Surgery and Rehabilitation, vol. 44, no. 5.

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Keywords: Functioning; major hand injury; replantation; return to work; revascularization.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S2468122925001902?via%3Dihub>

Guiding and Supporting Mental Health and Wellbeing

Mental Health

Workplace and non-workplace loneliness: A cross-sectional comparative study on risk factors and impacts on absenteeism and mental health among employees in Spain

Purpose: The aim of this study is to (1) evaluate prevalences and concordance between workplace and non-workplace loneliness, (2) compare sociodemographic risk factors between workplace and non-workplace loneliness, (3) compare working conditions-related risk factors between the two contexts of loneliness, and (4) compare the impact of workplace and non-workplace loneliness on absenteeism, depression, anxiety and substance use disorder. **Methods:** A sample of the employee residing in Spain ($n = 5400$) was surveyed

using computer-assisted web interviews (CAWI) during August and September 2024. Logistic regression models were constructed to compare the effects of risk factors for workplace and non-workplace loneliness (including sociodemographic factors, and factors related to working conditions), as well as the association of workplace and non-workplace loneliness on absenteeism, and symptoms of depression, anxiety, and substance use disorder. **Results:** Among active workers, 40.7% report experiencing workplace loneliness, while 42.0% report non-workplace loneliness. The level of concordance between both types of loneliness is low ($Kappa = 0.36$). Both types are more prevalent among younger and immigrant workers. Other sociodemographic risk factors (being female, non-married, and non-heterosexual) were significantly associated with non-workplace loneliness. Meanwhile, risk factors related to working conditions - particularly working under stress and labor precariousness- were associated with both types of loneliness, which showed an independent impact on absenteeism, depression, anxiety, and substance use disorder. **Conclusion:** Most of the social determinants of workplace loneliness are rooted in the work environment, indicating that effective interventions should focus on addressing labor conditions and precariousness to improve both workplace and non-workplace loneliness and their impacts on absenteeism and mental health.

Domènech-Abella et al. 2025.

Social Psychiatry and Psychiatric Epidemiology, vol. 60, no. 10.

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Keywords: Absenteeism; labor precariousness; loneliness; mental health.; workplace loneliness.

Evidence Level: 4B

Link: <https://link.springer.com/article/10.1007/s00127-025-02899-z>

Prevalence and determinants of burnout among staff of the university of Dschang: A cross-sectional study in a Sub-Saharan university

Background: Burnout results from prolonged exposure to chronic work-related stressors. Studies carried out on this syndrome around the world report a high prevalence among education professions. The scarcity of data on this subject in Cameroon motivated us to carry out this study at the University of Dschang. This study aimed to determine the prevalence and identify the determinants of burnout among staff at the University of Dschang. **Methods:** This study was conducted in two parts: the first part was descriptive, while the second was analytical (a nested case-control study) and took place from January to May 2024. We distributed a questionnaire to collect sociodemographic and professional data, assess psychological well-being (using the comprehensive KARASEK and SIEGRIST questionnaires), and evaluate burnout (using the MASLACH scale) to staff members who consented to participate. Data analysis was carried out using SPSS version 23 software, and chi-square test and Student's t- tests were carried out to identify associated factors. A p -value < 0.05 was considered significant. **Results:** We included 322 staff members out of 884, representing a response rate of 36.4%. The median age was 40 (IQR 35-48) years. More than 1/3 had administrative responsibility. Furthermore, 32.8% of staff were experiencing on jobstrain, and 47% did not have social support. The prevalence of burnout was 59.6%, including 75.5% mild burnout, 17.7% moderate burnout and 6.8% severe burnout. Associations were found with the lack of social support ($ORa = 2.21$; 95% CI [1.30-3.78], $p = 0.003$), the presence of administrative responsibility ($ORa = 2.63$; 95% CI [1.52-4.56], $p = 0.001$). More than half of the teaching staff were overworked. Lack of leisure time, insufficient sleep duration and work overload were not associated with burnout. **Conclusion:** The majority (59.6%) of the staff at the University of Dschang experienced burnout. This was associated with having administrative responsibility and lacking of social support. Staff support measures are recommended.

Simeni Njonjou et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Administrative duties; burnout; high workload; social support; University of dschang.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24559-2>

Associations between compassion fatigue and suicidality among healthcare workers in the United States

Background: The psychological well-being of healthcare workers affects not only their own health but also patient care quality, making it critical to examine the mental health needs of the healthcare workforce. While compassion fatigue (i.e., depersonalization, emotional exhaustion, and career dissatisfaction) and suicidality have been studied separately among healthcare workers, their relationship with each other remains understudied. This study investigates the associations between compassion fatigue and past-year suicidal thoughts, suicide planning, and suicide attempts among a diverse sample of healthcare workers.

Methods: We collected cross-sectional data from a sample of U.S. healthcare workers (N = 200). Logistic regression models examined relationships between compassion fatigue and past-year suicidal thoughts, planning, and attempts, separately. Final models controlled for gender and occupational setting (hospital vs. other). **Results:** Suicidality was prevalent: 14 % of participants reported past-year suicidal thoughts, 6.0 % reported suicide planning, and 3.5 % reported a suicide attempt. Greater compassion fatigue was significantly associated with increased odds of past-year suicidal thoughts (OR = 1.10, 95 % CI: 1.04, 1.16), suicide planning (OR = 1.10, 95 % CI: 1.02, 1.19), and suicide attempts (OR = 1.10, 95 % CI: 1.01, 1.21). After controlling for gender and occupational setting, these associations remained significant for suicidal thoughts (aOR = 1.09, 95 % CI: 1.04, 1.16), suicide planning (aOR = 1.10, 95 % CI: 1.02, 1.19), and suicide attempts (aOR = 1.10, 95 % CI: 1.01, 1.21). **Conclusions:** Findings suggest that higher compassion fatigue is linked to increased suicidality among healthcare workers, highlighting the need to address compassion fatigue as a potential risk factor.

Okon et al. 2025.

Journal of Psychiatric Research, vol. 190.

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(<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: Compassion fatigue; psychological well-being; suicidal thoughts; suicide attempts; suicide planning.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0022395625004571?via%3Dihub>

Exploring potentially morally injurious events and mental health in a UK representative population

Introduction: Potentially morally injurious events (PMIEs) are events which conflict with an individual's deeply held moral convictions and beliefs. PMIE research has focused on potentially at-risk populations such as military personnel. However, limited research has examined PMIEs and their association with mental health and functioning in the general population. The current cross-sectional study aims to explore the prevalence of PMIEs and associated mental health and functioning in a UK representative sample. The secondary aim is to provide an overview of the health and wellbeing of the sample, thus offering context for interpreting the PMIE results. **Methods:** Participants were recruited via Prolific to obtain a UK nationally representative sample of 2,385 adults (Mage = 46.79, SDage = 15.43). Participants completed a questionnaire which included the Moral Injury Outcome Scale to assess PMIE exposure and moral injury symptoms, and measures of other health and functioning, such as common mental health difficulties (CMDs; anxiety and depression). **Results:** Overall, 59.58% of the total sample reported PMIE exposure. The most prevalent health concerns were loneliness (38.45%), insomnia (35.22%), problematic alcohol use (34.55%), and CMDs (30.86%). The prevalence of posttraumatic stress disorder (PTSD) was 3.61% and complex-PTSD in the sample was 6.96%. Those who reported PMIE exposure had significantly higher scores on measures of CMDs, physical health, anger, loneliness, PTSD, and complex-PTSD than those who had not reported PMIE exposure. Additionally, those who reported PMIE exposure had significantly lower scores on the sleep quality measure, indicating poorer sleep. **Discussion:** The findings highlight how PMIE exposure extends beyond at-risk occupation groups while demonstrating the association between PMIEs and mental health and functioning in a UK representative sample. This study did not explore the prevalence of moral injury or its association with outcomes. Future research should explore the development of moral injury and effects in the general population.

Howlett et al. 2025.

European Journal of Psychotraumatology, vol. 16, no. 1.

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Keywords: Mental health; Daño moral; moral Injury; potentially morally injurious events; trauma.

Evidence Level: 4B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12507105/>

Exploring the relationship between after-hours work-related social media use and teacher job burnout

Teaching is widely recognized as a profession characterized by high levels of occupational stress. This study investigates the impact of teachers' after-hours work-related social media communication (WRSMU) on job burnout, as well as the mediating role of work stress within the framework of the job demands-resources (JD-R) model. Furthermore, the study examines whether teachers' work values moderate the relationship between after-hours work-related social media use and work stress. The study targeted university teachers in Sichuan province, China, and employed a questionnaire survey to collect data. A total of 936 questionnaires were distributed, of which 842 were deemed valid. Statistical analyses were conducted using SPSS 23.0 and AMOS 24.0 to test the conceptual model. The results indicated that: (1) There is a positive relationship between work-related social media use (WRSMU) outside regular work hours and work stress. (2) Work stress plays a mediating role between WRSMU after work and job burnout. The antecedents of teacher job burnout are a topic worthy of attention in both academic and practice. This study highlights the complex relationship between teachers' after-hours work-related social media use (WRSMU), work stress, work values, and job burnout. The findings demonstrate that while Work-related public social media use after work hours can enhance communication efficiency, excessive use after work hours increases work stress and contributes to job burnout. In addition, future studies can investigate other moderating or mediating variables that affect teacher job burnout.

Jian et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: After-hours work-related social media use (WRSMU); job burnout; work stress; work values.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-025-20067-w>

Voice disorders among teachers from the perspective of affective temperament and occupational burnout syndrome

Background: Teachers are the occupational group most at risk for dysphonia. Therefore, it is important to introduce effective methods to support the rehabilitation process of occupational voice disorders.

Knowledge about temperamental conditioning responsible for susceptibility or resistance to workplace stress and the occupational burnout syndrome in teachers is very important for the rehabilitation process due to further voice work.

Material and methods: The dependence of subjective voice assessment of professionally active teachers on affective temperament and occupational burnout was analyzed. The study included 174 female teachers who participated in a 24-day inpatient voice rehabilitation program at the Health Resort Hospital in Ciechocinek, Poland, 2019-2021. Subjective voice impairment was assessed using the Voice Handicap Index (VHI) self-assessment questionnaire. Affective temperament types were assessed using the Temperament Evaluation of the Memphis, Pisa, Paris and San Diego Autoquestionnaire (TEMPS-A). The Maslach Burnout Inventory (MBI) questionnaire was used to measure burnout. The VHI, TEMPS-A and MBI questionnaires were administered to the teachers at the beginning of the rehabilitation stay.

Results: Total self-report of voice dysfunction, as assessed by the VHI questionnaire, was shown to be significantly associated with occupational burnout in all its dimensions ($p = 0.00$). The association of the subjective assessment of voice dysfunction in the teachers surveyed with affective temperament types was not confirmed. **Conclusions:** The study could be expanded to include a control group. The research on the relationship between occupational burnout and voice disorders could also be repeated with another group of voice professionals, such as singers. Demonstrating a correlation based on results obtained regardless of occupation would increase the reliability and confirm the universal value of the present study. Prophylaxis

that takes into account temperamental conditioning and occupational burnout, as well as practical preparation of teachers for voice work, may be helpful in preventing voice dysfunction in this professional group. *Med Pr Work Health Saf.* 2025;76(5):361-371.

Nawrocka et al. 2025.

Medycyna Pracy, vol. 76, no. 5.

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(<https://creativecommons.org/licenses/by-nc/4.0/>)

Keywords: Affective temperament; occupational burnout; occupational voice disorders; prophylaxis; teachers; voice rehabilitation.

Evidence Level: 4B

Link: <https://medpr.imp.lodz.pl/Voice-disorders-among-teachers-from-the-perspective-of-affective-temperament-and,205202,0,2.html>

Similar work demands, similar problem solving, but more self-regulation problems in employees with mental disorders as compared to others

Sick leave due to mental disorders is a world-wide problem. The key issue for work ability is a good person-job-fit, i. e., work demands and coping capacities must fit together. Employees with mental disorders perceive similar work demands like mentally healthy employees, but have problems with work-coping. Until now it is not well described which concrete work-coping and problem-solving capacities are similar or different in employees with and without mental disorders. A convenience sample of 372 employed people from heterogenous professions (average age 39 years, range 18-66, 55% female, 30.9% mental disorders) filled in an online questionnaire. Participants were asked about work-related characteristics and socio-demographics, mental disorders, and filled in self-rating questionnaires on psychological capacities (Mini-ICF-APP-S), work demands (Mini-ICF-APP-W), work anxiety (WPS), work coping (JoCoRi) and problem solving (12-WD scale). Employees with and without mental disorders described similar work demand levels. Employees with mental disorders perceived themselves weaker in nine out of thirteen psychological capacity dimensions, reported higher work-anxiety, lower person-job-fit, and longer sick leave duration. Employees with mental disorders were weaker in self-regulation, i. e., stress and symptom management. In contrast, there were no differences in general problem solving: both groups were similarly convinced about their ability to handle tasks, colleagues and supervisors. Support for employees with mental health problems (in prevention and reintegration) should be directed to their individual specific needs. Education in self-regulation of problems might be more in need than general problem solving education.

Muschalla 2025.

Die Rehabilitation, vol. 64, no. 5.

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Keywords: Work demands; problem solving; self-regulation; mental disorders.

Evidence Level: 5B

Link: <https://www.thieme-connect.com/products/ejournals/abstract/10.1055/a-2663-0619>

Bullying, Harassment and Occupational Violence

Workplace violence and patient management time in the emergency department: An observational study

Background: Workplace violence is steadily rising, and the healthcare sector is one of the most impacted areas. Several studies have shown that patients' long management times are a key factor in workplace violence in this setting. **Objective:** This study aims to analyze the prevalence and characteristics of aggressions against healthcare workers (HCWs) that occurred in 2023 in the Emergency Rooms (ER) of a large university hospital and to evaluate the potential relationship between the management time of a patient in the ER and the risk of violence incidents. **Methods:** To evaluate the prevalence and characteristics of aggressive events against HCWs that occurred in 2023, data from the "incident reporting" form were analyzed. Then, using the 2023 report on daily ER accesses, the management time of a patient at

the ER was calculated. Finally, the average management times of patients on days when there were no aggressions were compared with those on days when there was one or more assaults against HCWs to evaluate the potential relationship between the average length of stay of a patient at the ER and the risk of aggression. **Results:** In 2023, 271 violent incidents were reported. Verbal aggressiveness was the most common (82.7%), and working the night shift was riskier (42.8%). In 36.2% of cases, patient management time was identified as a potential predictor of aggression. Other identified potential predictors included the patient and/or caregiver relationship with HCW (30.6%), the refusal to accept diagnostic-therapeutic protocols (27.3%), and the cultural background and temperamental traits of the patient or caregiver (18.8% and 11.8%, respectively). According to the logistic regression analysis, the likelihood of a violent incident during a 150-minute stay was less than 10%; it increased to 53% after 650 minutes. **Conclusion:** Workplace violence in healthcare settings results from a complex interaction of internal and external factors. Understanding how these elements interact and contribute to the development of incidents is essential for identifying key actions to reduce and mitigate violence.

Di Giorgio et al. 2025.

La Medicina del Lavoro, vol. 116, no. 5.

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Keywords: Workplace violence; patient management; emergency department.

Evidence Level: 4B

Link: <https://www.mattioli1885journals.com/index.php/lamedicinadellavoro/article/view/17113>

Prototypes of victims of workplace harassment

What do people think of when they think of workplace harassment? In 13 pre-registered studies with French, British, and U.S. American adult participants (N = 3,892), we conducted a multi-method investigation into people's social prototypes of victims of workplace harassment. We found people imagined such victims in physically, socially, psychologically, and economically different ways compared with non-victims: for example, as less attractive, more introverted, and paid less. In addition, we found ambiguous harassment leveled against a prototypical (vs. non-prototypical) victim was more likely to be classified as harassment, and perceived to cause the victim more psychological pain. As such, both lay-people and professionals wanted to punish harassers of victims who "fit the prototype" more. Notably, providing people with instructions to ignore a victim's personal description and instead assess the harassment behavior did not reduce the prototype effect.

Ziano et al. 2025.

Personality and Social Psychology Bulletin, vol. 51, no. 10.

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Keywords: Punishment; social prototype; stereotyping; workplace harassment.

Evidence Level: 5B

Link: <https://pubmed.ncbi.nlm.nih.gov/38491913/>

Psychosocial Issues

Influence of psychosocial work factors on male fertility and sperm quality: A scoping review

Background: While much research is available on the implications of environmental and occupational exposures to chemicals on infertility and sperm quality, less is known about the impact of psychosocial work exposures on male reproductive health, including sperm quality. Therefore, this scoping review maps evidence of the psychosocial work factors and their effects on male fertility, including sperm quality.

Methods: Searches were conducted in JSTOR, Central, PubMed, and Web of Science, with additional searches carried out in Google and Google Scholar. The study included only peer-reviewed articles published in the English language, conducted among male working population between January 1990 and January 2024. Two authors independently extracted data from eligible full-text records, which the other two authors reviewed the extracted data. **Results:** The search conducted in the selected databases produced 1,322 records, and through a rigorous screening process, 18 full-text peer reviewed articles were

included in this review. The findings about the influence of shift work, long working hours, and job strain on male fertility and sperm quality remain inconclusive. Unfortunately, job stress and cognitive weariness reduce male fertility by lowering sperm quality. Fortunately, social support at work is found to buffer the effect of high job demands on sperm quality. Moreover, workers who smoke tobacco, have poor sleep quality, and have history of depression and diabetes are more likely to suffer infertility and have poor sperm quality. **Conclusion:** Workplace interventions are needed to match high job demands with adequate job resources such as social support, job control, adequate breaks and rest periods, and to encourage healthy lifestyles for improved reproductive health outcomes among male workers. More quality studies are needed to explore the influence of psychosocial working conditions on sperm quality.

Ansah et al. 2025.

Reproductive Biology and Endocrinology, vol. 23, no. 1.

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(<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: Infertility; men health; psychosocial work factors; sperm quality.

Evidence Level: 1A

Link: <https://rbej.biomedcentral.com/articles/10.1186/s12958-025-01369-0>

Understanding what really drives trust in the workplace and the importance of trustor characteristics as predictors of co-worker trust

Most interpersonal trust models attribute outcomes primarily to effects of trustee characteristics (e.g., ability, benevolence and integrity), yet Jones & Shah's 2016 variance partitioning study remarkably observed that variance in between-trustors influences affected trustworthiness outcomes more than between-trustees influences. Effects of trustor characteristics are rarely explored by trust psychology scholars (even though most readily acknowledge that trust outcomes are rooted in trustors' information availability), so little is known about how trustor characteristics explain trust. A core issue has been the absence of a continuous measure of trustor information availability, which has limited the scope of research inquiry and left extant trust models unable to generalize across many common situations. Moreover, extant trust psychology models treat trustee characteristics as exogenous (independent) trust predictors, even though they are measured by trustor observations and thus are necessarily endogenous to some degree of between-trustor variability. This study bridges these gaps in trust literature by employing a continuous variable representing trustors' contextual information (CI) availability (Funder, 1995; Hawthorne, 2022, 2024), as a trust predictor, and by including relationships between trustor and trustee characteristics (mediation effects) as indirect trust predictors. The examination process comprised an exploratory study (N = 334) that developed and analyzed four explanatory models, which in turn were cross-verified and validated by an independent study (N = 815). When both direct and indirect effects were taken into account, total unique between-trustors effects on trust outcomes were observed to be much greater than total unique between-trustees effects, which, contrary to the tenets of extant trust psychology literature, suggests that trust outcomes are not explained primarily by the perceived trustworthiness of potential trustees.

Hawthorne 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Co-worker trust; contextual information; information asymmetry; information availability; people perception; personality perception; trust; trust model; trustworthiness.

Evidence Level: 5B

Link: <https://www.nature.com/articles/s41598-025-17397-0>

'Are they just putting up with me'? How diversity approaches impact LGBTQ+ employees' sense of being tolerated at work

This research investigates whether and how workplace diversity approaches-identity-conscious versus identity-blind-are associated with LGBTQ+ employees' perceptions of tolerance. Whilst tolerance is widely regarded as an important virtue for the harmonious functioning of diverse societies, it can inadvertently

harm minoritized individuals. In workplace settings, perceptions of tolerance may hinder the benefits of diversity by discouraging minoritized employees from sharing their perspectives and prompting individuals with relatively concealable stigmas, such as LGBTQ+ employees, to conceal their identities. Across two studies (n = 907), we examine the conditions under which tolerance perceptions may arise. Study 1 explores LGBTQ+ prospective employees' anticipated tolerance in organizations with identity-blind versus identity-conscious mission statements. Study 2 examines LGBTQ+ employees' workplace experiences, focussing on how organizational and leadership diversity approaches are related to perceptions of tolerance. Findings reveal that relatively identity-blind approaches are associated with increased feelings of being tolerated. Moreover, identity-conscious leadership strategies, when coupled with identity-conscious organizational approaches, further diminish perceptions of being merely tolerated. Our findings underscore an un-intended correlate of identity-blind diversity approaches, which may perpetuate tolerance-focussed climates and indirectly undermine inclusion for LGBTQ+ employees.

Mor et al. 2025.

British Journal of Social Psychology, vol. 64, no. 4.

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Keywords: LGBTQ+; diversity approach; leadership; tolerance.

Evidence Level: 5B

Link: <https://bpspsychub.onlinelibrary.wiley.com/doi/10.1111/bjso.70006>

Conceptualizing workplace loneliness: A qualitative investigation with UK workers

Purpose: Loneliness has been identified as an important risk factor for mental health problems, and concern about its impact on workers' health and wellbeing has grown in recent years. While a body of workplace loneliness research is emerging, the degree to which existing definitions of the phenomenon reflect workers' experiences has not been investigated. This study aims to develop an evidence-based conceptualisation of workplace loneliness that can inform future research and interventions aiming to improve workers' mental health and wellbeing. **Methods:** Semi-structured interviews exploring experiences of social connection, loneliness and work were conducted with a diverse sample of 31 UK-based workers. The interviews were supplemented with a social mapping task. Interview data were analysed inductively using reflexive thematic analysis. Social maps were analysed using a thematic analysis approach informed by a visual semiology framework. **Results:** Three themes were identified, in which loneliness was conceptualised as disconnection from (1) colleagues, (2) one's organisation, and (3) society. Across each theme, disconnection and loneliness were experienced as an unfulfilled desire to feel that one's authentic self was understood, valued or belonged as a result of one's work or occupation. **Conclusions:** Workplace loneliness comprises not only dissatisfaction with interpersonal relationships at work, but also a sense of disconnection from larger social groups and structures, particularly one's employing organisation and society as a whole. Definitions of workplace loneliness that acknowledge the role of the social and organisational context, as well as professional relationships, are needed to better reflect the lived experience of loneliness at work.

Bryan et al. 2025.

Social Psychiatry and Psychiatric Epidemiology, vol. 60, no. 10.

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Keywords: Employment conditions; loneliness; psychosocial workplace exposure; qualitative research; work.

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1007/s00127-025-02925-0>

Coworker phubbing and links to the psychosocial work environment among electricians in Sweden

A "Phubbing" (phone snubbing) has been consistently associated with negative intra- and interpersonal outcomes across various social contexts. However, the potential impact of phubbing on horizontal workplace relationships has not been extensively explored. The present study aimed to examine associations between coworker phubbing during breaks and social support and community, horizontal trust, and organizational commitment among electricians in Sweden. An auxiliary aim was to adapt and

validate a coworker phubbing scale. In Studies 1a and 1b, confirmatory factor analysis was used to assess and validate the coworker phubbing scale in two samples. In Study 2, structural equation modeling was used to examine the relationship between phubbing and included psychosocial work environment measures. Exposure to phubbing from coworkers was associated with lower perceived support and community, trust, and commitment. The associations were stronger for more severe phubbing behaviors. Engaging in phubbing others was not considerably linked to the psychosocial measures. Younger participants reported engaging in more phubbing and lower perceived exposure to more severe phubbing. Smartphone habits at work may have implications for the psychosocial work environment and, by extension, important outcomes such as well-being, job satisfaction, performance, and turnover.

Martinsson et al. 2025.

Scandinavian Journal of Psychology, vol. 66, no. 5.

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Keywords: Coworker phubbing; psychosocial work environment; smartphones at work; work breaks; workplace phubbing.

Evidence Level: 5B

Link: <https://onlinelibrary.wiley.com/doi/10.1111/sjop.13121>

Neural predictors of hidden, persistent psychological states at work

Common workplace challenges such as feeling overwhelmed, burned out, or disengaged often remain hidden due to fear of judgment or social norms, contributing to rising mental health crises and organizational dysfunction. This study presents a brain-based framework for predicting these hidden and persistent psychological states through noninvasive neuroimaging. We used functional near-infrared spectroscopy to record neural activity from 67 executives in the field as they watched a video about workplace attitudes. We then applied a multitimepoint pattern analysis (MTPA) approach to reduce timeseries dimensionality and successfully classify whether individuals were feeling overwhelmed (72.8% accuracy) or in need of a new or different challenge (79.1% accuracy) in their careers using the temporal parietal junction (TPJ) and dorsal medial prefrontal cortex (dmPFC), respectively. The MTPA framework also allowed us to reverse-engineer specific thematic properties of the stimulus that evoked differential neural responses linked to these predicted outcomes. Emotional content in the video (e.g., reported distress) corresponded to the selected TPJ features that predicted whether someone was overwhelmed, while socially relevant content (e.g., missing social gatherings) aligned with the selected features from the dmPFC that predicted the need for a new or different challenge. These findings demonstrate the ability of neural measures to unobtrusively identify hidden and persistent psychological states in real-world settings, enabling targeted interventions that can improve well-being and engagement.

Goldstein et al. 2025.

Proceedings of the National Academy of Sciences of the United States of America, vol. 122, no. 42.

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Keywords: Default mode network; fNIRS; machine learning; neural synchrony; psychological lenses.

Evidence Level: 5B

Link: <https://www.pnas.org/doi/10.1073/pnas.2504382122>

Improving staff enjoyment at work in a community mental health team: A quality improvement project

Background: Staffing has been a significant problem for our community rehabilitation team in the past with high vacancy rates, sickness and turnover, impacting negatively on patient care at times. Our project aim was to improve staff enjoyment at work, in the hope that this might also improve staff retention. **Method:** We measured enjoyment levels by distributing an anonymous questionnaire weekly at team meetings, scoring enjoyment levels on a scale 1-10 and collecting qualitative feedback. We also calculated monthly staffing levels. The team developed a driver diagram and interventions were introduced from this including reflective practice sessions, monthly teaching sessions, staff social events and a cross-cover/duty policy with guidance on flexible working. **Results:** After the interventions were implemented, the median staff enjoyment score increased slightly from 6.75/10 to 7/10 and the median staffing levels increased from 61% to 89% over a period of 18 months. We found that staffing levels and enjoyment levels correlated with

each other. From analysis of the qualitative feedback over the duration of the project, the number of negative comments received did reduce. It should be noted that the number of comments around the intensity of workload remained the same when comparing the baseline period to the final weeks of the project. **Conclusion:** There was little change in staff enjoyment levels at work. This may be reflective of the general state of the National Health Service with poor levels of morale nationally but may also be linked to ongoing concerns in the qualitative feedback from the team about high workloads. Despite this, we made positive changes and the project helped bring the team together. The project further emphasises the link between staffing levels and enjoyment levels. Overall, our project helped to increase staffing levels and highlight the importance of well-being in the workplace.

Greenslade et al. 2025.

BMJ Open Quality, vol. 14, no. 4.

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Keywords: Mental health; quality improvement; teams.

Evidence Level: 5B

Link: <https://bmjopenquality.bmj.com/content/14/4/e003247>

Moral injury prevention and intervention

Background: Those working in high-risk occupations may often face ethical dilemmas that violate their moral code which can lead to moral injury (MI). While research into the impact of MI is growing, evidence for effective treatment interventions and prevention approaches remains limited. **Objective:** To review recent developments in treatment and prevention approaches for MI-related mental health difficulties.

Method: We synthesised emerging treatments, including trauma focused therapies and spiritual approaches, as well as possible prevention strategies. **Results:** Conventional treatments for post-traumatic stress disorder (PTSD) (e.g. prolonged exposure) often inadequately address MI and may exacerbate symptoms. Adapted or novel approaches, including Impact of Killing, Adaptive Disclosure, and Restore and Rebuild, show promise, particularly when co-produced with patients and clinicians. Spiritual interventions demonstrate mixed outcomes. Prevention research remains very limited but highlights the potential of systemic reforms, leadership fostering psychological safety, preparedness training, structured reflection, and peer support. Evidence remains constrained by small samples, military-focused populations, and inconsistent measurement of MI. **Conclusions:** While no gold-standard intervention exists, values-based and compassion-focused approaches appear promising. Prevention strategies targeting organisational culture and fostering preparedness are urgently needed, particularly for civilian and diverse occupational groups, to better support and protect those exposed to potentially morally injurious events.

Williamson et al. 2025.

European Journal of Psychotraumatology, vol. 16, no. 1.

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Keywords: Moral injury; intervention; occupational; prevention; trauma; wellbeing.

Evidence Level: 6B

Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12541919/>

Fostering Work Participation

Return to Work

Long-term follow-up of participants with mental ill health in the Danish return-to-work program: A secondary analysis of a controlled trial

Background: The Danish return-to-work (RTW) program was a coordinated, tailored and multidisciplinary intervention aimed at improving sickness benefit management at municipal jobs and benefits offices in Denmark. **Objective:** To estimate long-term effects of the Danish RTW program for participants with mental ill health. **Methods:** The study population consisted of 8655 20-54 year-old citizens in 21 Danish municipalities who were sick-listed due to self-reported mental health problems (anxiety (4%), depression (47%), stress/ burnout (37%), or other (12%)) in 2010-2012. Of these, 5252 received the intervention while

3403 (the control group) received ordinary case management. Multinomial logistic regression was used to estimate odds ratios (intervention vs. control) for health and non-health related welfare dependency at a 1, 3 and 5-year follow-up in national registers. **Results:** We did not find effects on the odds of receiving health related welfare benefits at 1 (OR = 0.90, 99% CI: 0.78-1.05), 3 (1.00, 0.85-1.17) and 5 years (0.98, 0.85-1.14). We did also not find effects on the odds of receiving non-health related welfare benefits at 1 (1.11, 0.95-1.29) and 3 years (0.94, 0.81-1.09), but found an effect at the 5-year follow-up OR = 0.81 (0.69-0.96). **Conclusion:** For persons with mental ill health at baseline, a structured RTW program reduced the risk of unemployment at 5-year follow-up, suggesting an impact on a process that can only be measured after several years. The intervention did not have long-term effects on the odds of receiving health related welfare benefits.

Hannerz et al. 2025.

WORK: A Journal of Prevention, Assessment & Rehabilitation, vol. 82, no. 2.

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Keywords: Mental health problems; multidisciplinary intervention study; return to work; sickness absence; welfare benefits; workability assessment.

Evidence Level: 2B

Link: <https://pubmed.ncbi.nlm.nih.gov/40421480/>

Long-term return to work and income trajectories after major trauma: A 10-year nationwide retrospective cohort study in Taiwan

Objectives: The financial impact on trauma patients can be devastating. Although Taiwan has universal health insurance coverage, medical bill reimbursement cannot compensate for the damage to a person's ability to work. The aim of this study was to investigate personal financial outcomes after major trauma.

Design: A retrospective cohort study. **Setting:** Nationwide data from Taiwan's National Health Insurance Research Database. **Participants:** This study included all patients with major trauma (injury severity score ≥ 16) in Taiwan from 2003 to 2007, and a 10-year follow-up was conducted. Patients aged 18-70 were enrolled. Patients who returned to work after trauma (RTW) and those who did not return to work (non-RTW) were compared. Basic demographics and short-term outcomes were analysed, and the 10-year trend of income variation was calculated. **Primary and secondary outcome measures:** The primary outcomes are the ratio of non-RTW after major trauma, and the independent risk factors for non-RTW. The secondary outcome is the 10-year trend of income variation of major trauma patients. **Results:** 5965 patients were included, with 4741 (79.5%) in the RTW group and 1224 (20.5%) in the non-RTW group. Hospital-acquired pneumonia, urinary tract infection, prolonged intensive care unit length of stay (LOS) and prolonged hospital LOS were identified as independent risk factors for future non-RTW. The mean monthly income of all patients declined in the three consecutive years postinjury and slowly returned to the preinjury level 9 years after the injury. **Conclusions:** Loss of working ability was noted in 20.5% of major trauma patients, and the income level for all patients did not recover to the preinjury level until 9 years after the injury. Further welfare planning beyond the extent of the National Health Insurance programme should be made to protect the financial shortcomings experienced by these patients.

Kuo et al. 2025.

BMJ Open, vol. 15, no. 10.

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Keywords: Health economics; health policy; trauma management.

Evidence Level: 4B

Link: <https://bmjopen.bmj.com/content/15/10/e090783.long>

Return to work and factors influencing recovery after endoscopic transsphenoidal surgery for hypothalamic and pituitary tumors

This study investigated the return-to-work (RTW) rates and associated factors following endoscopic transsphenoidal surgery (eTSS) among patients with pituitary and hypothalamic tumors in Japan. The primary research question aimed to determine the variables affecting early RTW post-surgery. A retrospective analysis was conducted on 44 preoperatively employed patients who underwent eTSS at a

single center between April 2018 and January 2025. Clinical data, including demographics, tumor characteristics, comorbidities, and perioperative variables, were extracted from the medical records. The primary outcome was RTW within 3 months of surgery. Statistical analyses were performed using t-tests and Fisher's exact tests. The median time to RTW was 5 weeks, and the RTW rates were 38.6%, 69.5%, and 75.0% at 1, 3, and 6 months, respectively, with an overall RTW rate of 84.1%. Factors such as a prolonged length of hospital stay (LOS), mental disorders, and the absence of prior TSS were significantly linked to delayed RTW at 3 months. Mental disorders also tended to decrease RTW at 6 months. No significant associations were found between adequate hormone replacement and age, sex, tumor type, or endocrinological dysfunction. Patients receiving multidisciplinary support for RTW tended to experience longer recovery periods, possibly reflecting a greater need. In patients undergoing eTSS for pituitary region tumors, a history of mental disorders, prolonged LOS, and no history of prior TSS were key factors could be associated with delayed RTW. Early identification of these factors may facilitate tailored multidisciplinary RTW support strategies.

Suzuki et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Craniopharyngioma; endoscopic transsphenoidal surgery; multidisciplinary support; pituitary adenoma; pituitary neuroendocrine tumor; return to work.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-025-19132-1>

Return to work after sick leave due to mental illness: A qualitative study on the perspective of workplace integration managers

Background and aim: Increasing numbers of people are unable to work due to mental illness and this is an increasing problem on both a personal and societal level. In Germany, a workplace integration management system (BEM) has been legally required since 2004 to support return to work (RTW). However, its uptake and success, especially regarding mental illnesses, is still unclear. This study was conducted to identify the current state of RTW after episodes of mental illnesses from the perspective of workplace integration managers and explore potential barriers and facilitators that influence the course and outcome of the BEM process. **Methods:** Semi-structured interviews with BEM managers (N = 14) from the greater Munich area were performed and analyzed using Thematic Analysis. **Results:** In their work, BEM managers tend to find themselves in a field of tension between the personal concerns of returning employees and the employer's business interests. They experience mistrust and lack of openness on the part of the returnees, while employers show little willingness to fully invest in the process. Lack of or incorrect information about BEM and on mental illness seems to promote these disruptive factors, as well as others. **Conclusion:** Broad education on BEM appears to be a promising means to reduce fear among returnees and to better reach the processes potential. In addition, a more open approach to mental illness could simplify the process for all involved.

Pelizäus et al. 2025.

Social Psychiatry and Psychiatric Epidemiology, vol. 60, no. 10.

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Keywords: BEM manager; mental disorders; qualitative research; return to work; thematic analysis; workplace.

Evidence Level: 5B

Link: <https://link.springer.com/article/10.1007/s00127-025-02906-3>

Obstacles and facilitators of return to work among people with persistent pain who receive benefit payments: An in-depth interview study

Background: Persistent pain is a major cause of work disability and early retirement, posing considerable challenges to welfare systems. The process of returning to work is complex and multifaceted, often becoming more difficult as the duration of absence increases. Most research on facilitators and obstacles for returning to work has focused on individuals on sick leave; less is known about those who are unemployed and receiving benefit payments. The aim in this study was to explore the obstacles and

facilitators faced by participants with persistent pain, who are attempting to return to work while receiving benefit payments. **Methods:** In this descriptive qualitative study, we used purposive sampling from a cohort study on the impact of being unemployed due to persistent pain. Semi-structured interviews were conducted using a topic guide, audio-recorded, transcribed verbatim and analysed using the Framework method. **Results:** We interviewed 29 participants, of whom 12 had partly or fully returned to work, while 17 had not. Themes emerged around participants' experiences of obstacles and facilitators: (1) Norwegian Labour and Welfare Administration, (2) healthcare, (3) psychological, (4) pain, and (5) perceptions of work. For facilitators, additional themes of 'luck' and 'disability pension' emerged. **Conclusion:** While struggling with pain and coexisting health issues, participants experienced overwhelming system and contextual obstacles. Key facilitators included fortuitous encounters with supportive welfare system staff and personal attributes such as psychological flexibility and determination. Our findings highlight areas of the welfare system that could be improved to provide more empathetic and person-centred pathways for people with persistent pain wanting to return to work.

Amundsen et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Chronic pain; health service research; persistent pain; qualitative research; return to work; semi-structured interviews.

Evidence Level: 5B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24747-0>

Presenteeism and Absenteeism

Factors influencing employment and absenteeism in working age people with multiple sclerosis

To examine employment status amongst people with multiple sclerosis (pwMS) in Israel, identify predictors of employment status, and investigate factors contributing to absenteeism amongst employed individuals. This cross-sectional study included 119 pwMS (65 women, mean age, 40.1 years, mean disease duration, 10.0 years). Participants completed self-reported questionnaires assessing employment status, absenteeism, work-related difficulties, perceived fatigue, perceived mobility, bladder and bowel function, fear of falling, and psychological and cognitive factors. The level of disability and information processing speed were also evaluated. Statistical analyses included ANOVA, t-tests, and regression models. Almost half of the participants (49.6%) were fully employed, 29.4% were partially employed, and 21.0% were unemployed. Unemployed pwMS reported higher levels of fatigue, mobility challenges, bladder and bowel dysfunction, and fear of falling. Perceived fatigue, specifically the physical and cognitive subscales, distinguished fully employed from partially employed individuals and was the most significant predictor of absenteeism (52.7%) of employed participants reported missing work due to multiple sclerosis. No significant differences were observed in depression, anxiety, or cognitive function across employment groups. Fatigue emerged as a critical determinant of employment status and absenteeism in pwMS, in conjunction with physical and functional barriers. Interventions addressing fatigue, mobility, bladder issues, and workplace accommodations are essential for improving employment outcomes. Longitudinal research is warranted to explore causal relationships and guide comprehensive strategies for employment retention.

Iron et al. 2025.

Scientific Reports, vol. 15, no. 1.

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Keywords: Absenteeism; employment; fatigue; multiple sclerosis; original research; work.

Evidence Level: 4B

Link: <https://www.nature.com/articles/s41598-025-20165-9>

Incidence rates of medically certified long-term sickness absence among Japanese employees: A focus on sex differences

Background: Long-term sickness absence (LTSA) is an important public health challenge, yet limited data exist on its incidence in Japan. We aimed to describe the incidence of all-cause and cause-specific LTSA by sex and age using 10-year data from a large Japanese working population, with a focus on sex differences.

Methods: The study participants were employees from 16 worksites in the Japan Epidemiology Collaboration on Occupational Health Study between April 2012 and March 2022. LTSA, defined as sickness absence from work lasting 30 days or more, was recorded at each worksite. The causes of LTSA were classified using the International Classification of Diseases, 10th Revision. Incidence rates for all-cause and cause-specific LTSA were calculated based on sex and age. **Results:** During 730,391 and 161,513 person-years of follow-up, 6,518 and 1,866 spells of LTSA were recorded in males and females, respectively. Females had higher incidence rates of all-cause LTSA than males (115.5 vs 89.2 per 10,000 person-years), especially among females in their 20s and 30s. This was partly attributed to younger females experiencing higher LTSA incidence rates due to mental disorders, neoplasms, and pregnancy-related illnesses. In older age, females had higher LTSA incidence rates than males for musculoskeletal diseases and injuries/external causes, whereas LTSA incidence rates due to circulatory diseases were lower than those in males.

Conclusion: The incidence of total and cause-specific LTSA varied greatly by sex and age, highlighting the need to consider employees' characteristics in the prevention and management of LTSA.

Taniyama et al. 2025.

Journal of Epidemiology, vol. 35, no. 10.

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Keywords: Absenteeism; incidence; occupational health; sex characteristics; sick leave.

Evidence Level: 4B

Link: https://www.jstage.jst.go.jp/article/jea/35/10/35_JE20240485/_article

Working hours

The association between irregular working hours and cardiovascular diseases in a multi-ethnic population: The HELIUS study

Background: Irregular working hours are a risk factor for cardiovascular diseases (CVD). **Aims:** We studied ethnic disparities in the association between irregular working hours and CVD, as well as the mediating stress-related pathways. **Methods:** Logistic regression was used to study the cross-sectional association between (a history of) irregular working hours and prevalent CVD (self-reported myocardial infarction, dotter/bypass operation or stroke) in 18 284 participants (18-71 years) in a population of Dutch, South-Asian Surinamese, African Surinamese, Ghanaian, Turkish and Moroccan origin from the HELIUS study. We considered three mediator models adjusting for behavioural, physiological and psychosocial stress. We tested for interaction between irregular working hours and ethnicity and stratified the analysis by ethnicity. **Results:** The prevalence of CVD was 18% (717 out of 4041) and 14% (1963 out of 14 243) in individuals with versus without irregular working hours. Working irregular hours was associated with prevalent CVD (OR 1.27, 95% CI 1.15-1.40) after adjusting for sociodemographic confounders. There was a significant interaction between ethnicity and irregular working hours on CVD. Strongest associations with prevalent CVD were found for South-Asian Surinamese (OR 1.47, 95% CI 1.18-1.82), African Surinamese (OR 1.29, 95% CI 1.06-1.57) and Moroccans (OR 1.43, 95% CI 1.11-1.84). There were considerable ethnic differences in the mediating stress-related pathways that associate irregular working hours with prevalent CVD. **Conclusions:** Working irregular hours is associated with an increased prevalence of CVD in a multi-ethnic population. We show ethnic disparities in the associations between irregular working hours and CVD, as well as in the stress-related pathways that mediate these associations.

Wijntjens 1 et al. 2025.

Occupational Medicine, vol. 75, no. 7.

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Keywords: Cardiovascular disease; working hours.

Evidence Level: 4B

Link: <https://academic.oup.com/occmed/article/75/7/442/8281025?login=false>

Wellness Programs

Economic evaluations of eHealth interventions targeting mental health problems in the workplace: A systematic review

Background: Work-related mental health problems impose significant economic and personal burdens. eHealth interventions may offer low-cost, practical solutions, but guidance on their cost-effectiveness in workplace mental health is limited. **Objective:** The objective of this study was to systematically review economic evaluations of workplace eHealth interventions for mental health, offering insights into methodologies and cost-effectiveness outcomes. **Methods:** Adhering to PRISMA guidelines, searches were conducted in Embase, MEDLINE, Web of Science, Google Scholar, Cochrane library, PsycInfo and EconLit databases in May 2022, selecting peer-reviewed papers that performed economic evaluations on workplace eHealth interventions for adult mental health. Quality was assessed using the Drummond checklist. **Results:** From 3213 references, eight met the inclusion criteria. These studies varied in economic perspective, types of economic analysis type, primary outcome measures, intervention focus (e.g. stress, alcohol, insomnia & return-to-work) and direct non-medical costs. Five eHealth interventions were found to be cost-effective and/or have a positive return on investment, with seven studies rated as high quality according to the Drummond checklist. **Conclusions:** The study outcomes unveiled the potential cost-effectiveness of eHealth interventions targeting mental health issues, particularly these focusing on workplace stress. However, generalization is challenging due to variations in the methodologies across studies.

Peeters et al. 2025.

Journal of Mental Health, vol. 34, no. 5.

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Keywords: Digital health; The systematic review was not registered on PROSPERO; as it was a part of the EMPOWER project; cost-benefit; cost-effectiveness; cost-utility; economic evaluation; mental health; systematic review; which maintained its own Intellectual Property and Dissemination Board; workplace.

Evidence Level: 1A

Link: <https://pubmed.ncbi.nlm.nih.gov/39163353/>

Effectiveness of an integrated approach for workplace health promotion on lifestyle of employees: Results of a cluster randomized controlled trial

Background: Evidence for the effectiveness of workplace health promotion programs (WHPPs) is small to moderate. More impact can be expected from an integrated WHPP, including activities at the individual and organizational levels. Since evidence regarding the effectiveness of integrated WHPPs is scarce, the aim of this study was to evaluate the effect of an integrated WHPP on the lifestyle of employees. **Methods:** A two-armed cluster randomized controlled trial with measurements at baseline and at six and twelve months of follow-up was conducted. The intervention consisted of health promotion activities aimed at two (out of six) health behaviors, targeting the individual and organizational levels. The main outcome was an overall lifestyle-score measured using twelve items from the Simple Lifestyle Indicator Questionnaire. The secondary outcome measures were six separate health behaviors, i.e. physical activity, nutrition, mental balance, smoking, alcohol consumption, and sleep. Intervention effects at six and twelve months were analyzed by conducting either longitudinal linear or (ordinal) logistic multilevel analyses, or generalized estimating equations. **Results:** A total of 173 employees from four Dutch organizations participated. No effect was observed for overall lifestyle. The consumption of sugary drinks was higher over time (OR: 2.4, 95%CI: 1.1-5.4) and after twelve months of follow-up (OR: 2.9, 95%CI: 1.03-8.0) for the intervention condition compared to the control condition. **Conclusions:** The integrated WHPP was not effective in improving the lifestyle of employees. The short duration of employees' exposure to activities, poor implementation (i.e., not meeting the criteria of the integrated WHPP), and the minimal implemented

activities may explain the absence of effect. **Trial registration:** LTR (onderzoekmetmensen.nl), NL9526. Registered on 3 June 2021.

Smit et al. 2025.

BMC Public Health, vol. 25, no. 1.

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Keywords: Cluster-randomized controlled trial; health behaviors; integrated approach; simple lifestyle indicator questionnaire; worksite health promotion.

Evidence Level: 2B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24522-1>

Benefits of an innovative 90-day longevity workplace program on health in the United Arab Emirates (UAE)

Unhealthy lifestyle behaviors, such as physical inactivity and an unhealthy diet, can decrease quality of life and increase the risk of obesity, depression, and chronic diseases like diabetes and cardiovascular disease. In workplace settings, these health issues are associated with increased healthcare costs and reduced productivity. The Pure Health 2K Longevity Study (PHLS) evaluated the effectiveness of a 90-day incentive-based lifestyle intervention among working adults in the United Arab Emirates (UAE). A single-arm interventional study was conducted by Abu Dhabi Health Services Company (SEHA) over a 4-month period. A total of 2300 participants aged 18-59 were enrolled, with 1688 (73.4%) completing the program. Participants underwent baseline and endline assessments, including physical measurements (weight, body mass index (BMI), waist circumference), biochemical parameters (blood pressure, glucose, Glycosylated hemoglobin (HbA1c), lipid profile, C-reactive protein (CRP), Gamma-glutamyl transferase (GGT), and self-reported health behaviors and adverse events. Significant reductions were observed in weight (77.0 to 75.9 kg), BMI (26.8 to 26.4 kg/m²), and waist circumference (95 to 93 cm) (all $p < 0.001$). Notably, 4.6% of participants transitioned from overweight to normal weight, and 3.4% from obese to overweight. No adverse events were reported. A short-term, workplace-based lifestyle intervention can produce meaningful improvements in anthropometric and biochemical health indicators, particularly among high-risk individuals.

Al Hassani et al. 2025.

International Journal of Environmental Research and Public Health, vol. 22, no. 10.

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Keywords: Health promotion; health status; lifestyle; longevity; workplace wellness.

Evidence Level: 3B

Link: <https://www.mdpi.com/1660-4601/22/10/1594>

Organisational Issues

What factors influence the retention of workers in NHS mental health crisis services in England? A reflexive thematic analysis

Objectives: To understand factors that influence the intention of workers to remain in or leave employment in National Health Service (NHS) mental health crisis services and to use findings to formulate recommendations for NHS trusts to achieve improved worker stability in mental health crisis services.

Design: A reflexive thematic analysis was conducted to explore the retention-related experiences of crisis workers. Secondary data was obtained from interviews conducted with crisis workers. This was collected by The University of Sheffield as part of the Retention of Mental Health Staff (RoMHS) study. **Setting:** Six NHS Trusts in England. **Participants:** All crisis worker interviews from the RoMHS study were included, totalling 10 participants: 70% female, 30% male, exclusively White British, and mostly occupying leadership roles. **Results:** Five themes were identified as influencing the retention of crisis workers: resource limitations, organisational culture and leadership, fairness and consistency, personal agency and team working. These themes are comparable to factors known to affect retention of the mental health workforce more widely. However, this study found a greater emphasis on the emotional burden of crisis work, including the

challenges of complex risk management, and a perceived vulnerability of crisis service workers to increased workload and fewer development opportunities compared with other specialist mental health services.

Conclusion: This study identifies that crisis workers face similar retention-related issues compared with the mental health workforce more widely, but with additional challenges related to the emotional intensity of the work and susceptibility of crisis services to resource constraints compared with other specialist mental health services. Further research should focus on employees who left crisis services, under-represented groups within the crisis workforce and the impact of retention-related policy.

Hobbs et al. 2025.

BMJ Open, vol. 15, no. 10.

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Keywords: Adult psychiatry; health services; health workforce; mental health; qualitative research.

Evidence Level: 5B

Link: <https://bmjopen.bmj.com/content/15/10/e104551.long>

Shift Work

Impact of artificial light at night and night shift work on brain functions and metabolism

The present review focusses on artificial light at night (ALAN) and night shift work (NSW) as examples for chronodisruption occurring in modern societies. Chronodisruption can lead to significant sleep and health problems and increase the risk of chronic diseases. This pathomechanism involves endocrine systems (glucocorticoids, melatonin). ALAN affects at least 80% of mankind and disturbs physiological, biological and behavioral processes in wildlife. In humans, the nighttime use of illuminated screens contributes to ALAN, with as yet unforeseeable consequences for body and brain. Acute continuous light exposure triggers pro-inflammatory responses in the brain which may make it more vulnerable to additional aversive stimuli. Moreover, acute continuous light impairs cognitive function and synaptic plasticity and leads to an increase in corticosterone, a stress hormone and an important mediator in the circadian system. Several studies on NSW reported increased risk for sleep disorders, cancer, cardiovascular disease, type 2 diabetes, obesity, and depression. However, objective imaging analyses supplemented by neuropsychological examinations revealed that NSW has only minor effects on brain functions. Moreover, a recent study showed that NSW was not accompanied by metabolic, cardiovascular or immunological problems. In conclusion, ALAN may be considered a relevant factor influencing human health and biodiversity and should be avoided whenever possible. Studies on the effects of NSW report varying results. This may be due to differences in light intensity during shift, the quality of the occupational health service and the shift work schedule. All these aspects need further investigations to prevent or mitigate the health risk of NSW.

Korf et al. 2025.

General and Comparative Endocrinology, vol. 373.

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Keywords: Blood cells; body mass index; circadian misalignment; glucocorticoids; LDL/HDL ratio; melatonin; resting-state functional connectivity.

Evidence Level: 1A

Link: <https://www.sciencedirect.com/science/article/pii/S0016648025001625?via%3Dihub>

Is night shift work associated with ovarian cancer? A systematic review and meta-analysis

Background: Night shift work has been classified as a probable carcinogen due to its disruption of circadian rhythms. However, whether night shift work can increase the risk of ovarian cancer remains unclear.

Herein, we investigated this association using a systematic review and meta-analysis. **Methods:** We systematically searched several databases until June 2025 for relevant studies. Effect estimates were extracted and pooled using a random-effects model to calculate odds ratios (ORs) with 95% confidence intervals (CIs). Heterogeneity across studies was assessed using the I² statistic, and publication bias was assessed using Egger's regression test and funnel plot asymmetry. **Results:** Seven studies (eight cohorts) involving >2.5 million women were included. Overall, night shift work was not significantly associated with ovarian cancer (OR = 1.13; 95% CI: 0.96, 1.32; I² = 49%). However, significant associations were observed in

case-control studies (OR = 1.36; 95% CI: 1.12, 1.66; I² = 0.8%) and in high-quality studies (OR = 1.17; 95% CI: 1.00, 1.37; I² = 52%). Sensitivity analyses suggested that exposure misclassification in some cohort studies attenuated risk estimates. No publication bias was detected ($z = -0.63$, $p = 0.53$). **Conclusions:** While the overall findings did not demonstrate a statistically significant association, evidence from case-control studies that collected detailed information about night shift work suggests an increased ovarian cancer risk in night shift workers. Future large-scale prospective studies with detailed exposure assessments are warranted to confirm these findings.

Arafa et al. 2025.

Medical Sciences, vol. 13, no. 4.

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Keywords: Cancer prevention; epidemiological evidence; meta-analysis; night shift; occupational risk; ovarian cancer; systematic review.

Evidence Level: 1A

Link: <https://www.mdpi.com/2076-3271/13/4/228>

The acute effect of night work-related circadian misalignment on headache episodes: Results from the 1001 nights-cohort

Objectives: We aimed to investigate the prevalence of headaches on days with night shifts compared with days with day shifts within the same individuals, accounting for work-related psychosocial stressors, physical job demands, and sleep duration and quality. This approach allowed us to isolate the impact of circadian misalignment due to night work from other potential headache triggers. **Background:** Night work has been suggested to increase the risk of headaches, primarily due to circadian misalignment and disturbed sleep. Most previous studies compare night workers with day workers, but differences in job characteristics and tasks between these groups may introduce bias. To minimize this potential bias, we examined headache occurrence under different working conditions (night vs. day shifts) within the same individuals. **Methods:** We used data from 14 days of repeated measurements in the 1001 nights-cohort, which includes female employees from the Danish hospital sector. Data were collected from September 2022 to April 2024. Participants completed diaries for 14 consecutive days, providing daily information on working hours, sleep, work-related psychosocial stressors, physical job demands, and headache occurrence (yes/no). Participants with data from at least one day shift and at least one night shift were eligible for inclusion in the analyses. In total, 522 participants contributed 3348 measurement days (1926 day shifts and 1422 night shifts). We estimated prevalence ratios (PRs) for headache occurrence while accounting for repeated measures within individuals and with adjustment for possible confounders (adjusted prevalence ratio [aPR]). **Results:** Headache was reported on 21.5% of measurement days with day shifts and on 27.9% of measurement days with night shifts. Working a night shift was associated with a significantly higher headache prevalence (aPR, 1.31; 95% confidence interval, 1.13-1.52) compared with day shifts when adjusting for work-related psychosocial stressors, physical job demands, and sleep duration and quality. For consecutive night shifts, the similarly adjusted headache prevalence was highest on the measurement day with the second night shift (aPR, 1.20; 95% confidence interval, 1.02-1.42), using the first night shift as a reference. **Conclusion:** This study is the first to investigate the headache prevalence when working night shifts compared with day shifts while accounting for work-related psychosocial stressors and physical job demands. Neither these factors, nor shorter sleep duration or lower sleep quality, explained the increased headache prevalence observed when participants worked night shifts. Thus, other (cascading) effects and underlying mechanisms of night work-related circadian misalignment may be the primary drivers of headache in night shift workers.

Harmsen et al. 2025.

Headache, vol. 65, no. 9.

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Keywords: Healthcare; migraine; occupation; rotating shifts; shift work.

Evidence Level: 4B

Link: <https://headachejournal.onlinelibrary.wiley.com/doi/10.1111/head.15054>

Time worked in shifts and occurrence of drowsiness events while driving: Attenuating effect of physical activity

Background: Shift work disrupts circadian rhythms and is associated with adverse sleep outcomes, such as daytime sleepiness and drowsiness while driving. This study aimed to investigate the relationship between history of shift work, drowsiness events during driving, and the potential moderating effect of physical activity. **Methods:** A cross-sectional investigation involved 1,413 male shift workers in an iron ore mining firm. Heavy machinery essential to the mining process was operated. A specific question from the Berlin Questionnaire was used to evaluate drowsiness while driving, asking whether participants had ever felt drowsy or fallen asleep while driving, regardless of whether the episode occurred during work-related or leisure-time driving. The main explanatory variable was the shift in working hours. The levels of physical activity were classified as low, moderate, and high using the IPAQ. Multivariate and descriptive logistic regression analyses were conducted. **Results:** The majority of workers were aged 20 to 34 (45.1%), self-identified as non-white (77.2%), and had completed high school (76.0%). The average history of shift work time was 9.56 years (95% CI: 9.23-9.90), with 76% working for five years or more. Drowsiness events while driving were reported by 17.3% of workers. Multivariate analysis showed a significant association between history of shift work and drowsiness events, indicating a dose-response relationship, where longer history of shift work time increased the likelihood of drowsiness events (OR: 2.93 for 10-15 years; OR: 4.34 for > 15 years). However, physical activity acted as a moderating factor, demonstrating a dose-response effect in reducing this chance, with a reduction of 27.6% and 30.9% for moderate and high levels, respectively, compared to participants with a low level of activity. **Conclusion:** A longer history of shift work time increases the chance of drowsiness events during driving, but higher physical activity levels mitigate them.

de Menezes-Júnior et al. 2025.

BMC Public Health, vol. 25, no. 1.

User License: Creative Commons Attribution (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/>)

Keywords: Circadian rhythm; occupational risks; physical activity; sedentary behaviors; sleep.

Evidence Level: 4B

Link: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-025-24644-6>

Bladder health in U.S. shift workers: A cross-sectional study (NHANES)

Purpose: Working during non-traditional hours is becoming more prevalent in modern societies and presents a significant hurdle to an individual's circadian rhythm. We examined the bladder health of shift workers in the United States by analyzing information obtained from the National Health and Nutrition Examination Survey. **Materials and methods:** National Health and Nutrition Examination Survey (NHANES) datasets from 2005 to 2010 were utilized. Regression analyses were used to assess the association between shift work and bladder health (stress incontinence, urge incontinence, and nocturia) by adjusting for age, race, education, smoking, and other factors. **Results:** The percentage of non-Hispanic Black individuals was notably higher among shift workers (25.8% vs. 17.8%). Among shift workers, there was a lower percentage of individuals with a college degree or higher compared to day workers. Shift work was found to be associated with nocturia in men in the unadjusted model (OR=1.2, 95%CI=1.0-1.5, p = 0.038). However, the adjusted results indicate that the connection is not statistically significant (Adjusted Model II: OR=1.2, 95%CI=1.0-1.5, p = 0.105). Similarly, no statistically significant association was observed between shift work and nocturia in women. There was also no significant relationship between shift work and Stress Urinary Incontinence (SUI) in men or women. The results from the fully adjusted model (Adjusted Model II) indicate a significant association between shift work and the prevalence of Urgency Urinary Incontinence (UUI) in women (OR=1.2, 95%CI=1.0-1.5, p = 0.041). **Conclusion:** Results of this cross-sectional study indicated that shift work was associated with a higher risk of UUI in women. Further research is needed to explore this relationship.

Diao et al. 2025.

Urology Journal, vol. 22, no. 4.

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Keywords: Bladder health; U.S; shift workers.

Evidence Level: 4B

Link: <https://journals.sbmu.ac.ir/urolj/index.php/uj/article/view/8265>

Occupational and driving challenges within sleep medicine

Shift work is a necessity for a society that requires 24/7 services. However, working around the clock can cause a misalignment with our sleep-wake cycle, resulting in sleepiness, impaired cognition and poor health. Due to the prevalence of shift work within safety-critical contexts, there is a need to further understand the causes and consequences of non-typical work on sleep, wellbeing, health and safety, as well as ways to effectively reduce this risk. Furthermore, disorders such as obstructive sleep apnoea, which is the most prevalent medical cause of sleepiness, compound the adverse health and safety consequences of shift work. This article provides an overview of some of the key occupational and sleep health challenges related to shift work: accurate measurement of sleepiness, mitigation, long-term sustainability and work/life balance. We conclude by proposing four directions for future work in this area to consider, with the overall aim of improving the sleep, health and wellbeing of the shift-working population.

Pilkington-Cheney et al. 2025.

Journal of Sleep Research, vol. 34, no. 5.

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Keywords: Driving regulations; obstructive sleep apnoea; safety; shift work; sleep health; sleepiness.

Evidence Level: 6A

Link: <https://onlinelibrary.wiley.com/doi/10.1111/jsr.70063>

Shift work, gut dysbiosis, and circadian misalignment: The combined impact of nighttime light exposure, nutrients, and microbiota rhythmicity

Disruption of circadian rhythms, particularly in shift workers, has been increasingly associated with a wide range of adverse health outcomes, including metabolic, immune, cardiovascular, and neurobehavioral impairments. This review explores the intricate bidirectional interactions between the circadian clock and the gut microbiota, highlighting how nighttime exposure to artificial light and irregular nutritional timing affect microbial composition, rhythmicity, and microbial-derived metabolite production. We summarize current evidence linking circadian misalignment to gut dysbiosis, inflammation, and metabolic dysfunction, and discuss emerging strategies such as chrononutrition, light modulation, and targeted microbial interventions (e.g. targeted probiotics). Understanding this complex network of light exposure, food intake, circadian regulation, and microbial dynamics could pave the way for personalized preventive and therapeutic strategies in populations vulnerable to circadian disruption, such as night shift workers. These strategies have the potential to mitigate health risks and improve overall well-being in affected individuals.

Touitou et al. 2025.

Chronobiology International, vol. 42, no. 10.

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Keywords: Microbiome; circadian desynchronization; diet; dysbiosis; light; melatonin; night work; nutrients.

Evidence Level: 6B

Link: <https://pubmed.ncbi.nlm.nih.gov/40772701/>

Management and Leadership

Building health: Motivational factors to enhance systematic work environment management in the construction industry

Objective: The aim of the study was to investigate whether and how the interventions have been beneficial in developing a well-functioning systematic OSH management. The aim was also to investigate whether and how the interventions have facilitated or impeded autonomous motivation to develop a well-functioning systematic OSH management. **Method:** Data were collected through individual interviews with participants in the Health Construction intervention project and audio recordings from the concluding workshop for each batch. The data were analyzed using an inductive thematic analysis. **Results:** The seven themes from the analysis yielded the following results. Participation in the project was highlighted as a key factor for

development, as it offered opportunities to collaborate and share experiences and insights about the domain of the occupational environment with representatives from other companies. Establishing a development team within participating companies appears to have influenced the legitimacy of occupational safety and health, as well as the assigned safety priority. A process consultative approach by external consultants seems to have contributed to an enhanced ability to articulate thoughts, identify solutions, synthesize discussions, and work effectively within the development team. The results suggest that the assigned safety priority of the respective participating companies has increased. Additionally, there are indications that autonomous motivation to continue and deepen efforts to address safety and health issues in a structured way has increased within the participating companies. **Conclusions:** The results of this study indicate that the interventions implemented in the project have been beneficial in fostering the development of a well-functioning systematic occupational safety and health management. This may have been achieved by enhancing the autonomous motivation to prioritize and develop a healthy and safe work environment within the participating companies.

Rydbo et al. 2025.

PLoS One, vol. 20, no. 10.

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Keywords: Health; work environment; management; construction industry.

Evidence Level: 5B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0333178>

Fostering learning goals at work: The interplay of dispositional and workplace learning goal orientation and supervisor appraisal behavior

A workplace that emphasizes personal learning and task mastery fosters employee development and performance. However, it is yet unclear which specific factors support such a learning goal-oriented workplace. Based on research in the educational domain, we investigated the reciprocal effects of dispositional learning goal orientation, supervisor's appraisal behavior, and a learning goal-oriented workplace. In a study with a repeated measurement design (N = 144 employees), we did not find support for an effect of supervisor's appraisal behavior (operationalized by the perceived use of self-reference norms and constructive handling of errors by employees) on workplace learning goal orientation over time. However, we found that a dispositional learning goal orientation of employees supports a learning goal-oriented work environment. Furthermore, workplace learning goal orientation had a cross-lagged effect on dispositional learning goal orientation and supervisor's appraisal behavior. By comparing our results from work to findings from the educational context, our results convey important theoretical implications about the construct of workplace goal orientation and suggest practical applications to foster a learning goal-oriented workplace in terms of personnel development and performance management.

Schelp et al. 2025.

Psychological Reports, vol. 128, no. 5.

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Keywords: Workplace goal orientation; appraisal; learning; personnel development.

Evidence Level: 5B

Link: <https://pubmed.ncbi.nlm.nih.gov/37641869/>

Work Ability

Use of a digital health benefit to maintain employees' productivity while trying to conceive

Background: Mental health challenges are prevalent at all stages of the journey to conception and people undergoing fertility treatment have frequent medical appointments, both of which may reduce workplace productivity. A comprehensive digital health platform that provides mental health support and access to virtual healthcare providers may improve employee productivity. **Objectives:** This study examined the associations between 1) use of a digital health platform while trying to conceive, workplace productivity, and mental health management; and 2) mental health management and workplace productivity. **Methods:**

This retrospective cohort study used logistic regression to estimate the association between use of Maven, a comprehensive digital women's and reproductive health platform, and workplace productivity and management of mental health among users who were trying to conceive. **Results:** Data were analysed from 1136 users who were trying to conceive. Overall, more time on the platform and reporting that the platform helped with management of mental health were positively associated with odds of reporting maintained productivity (aOR = 1.12, CI = 1.05, 1.19; aOR = 1.52, CI = 1.05, 2.22, respectively). More time on the platform increased the overall odds of reporting better management of mental health (aOR = 1.19, CI = 1.13, 1.26). More time on the platform was associated with maintaining productivity and better management of mental health for users with and without a history of mental health conditions.

Conclusions: A comprehensive digital health platform can help maintain workplace productivity while trying to conceive for employees with and without mental health conditions. Mental health can be supported digitally with mental health-specific supports, educational resources, and access to providers. Digitally accessing resources may also improve productivity by reducing the need to attend in-person provider appointments.

Henrich et al. 2025.

Social Science & Medicine, vol. 382.

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Keywords: Digital health; mental health; productivity; trying to conceive.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0277953625006604?via%3Dihub>

Job accommodations and job loss from unilateral vocal fold paralysis

Objective: Unilateral vocal fold paralysis (UVFP) is a debilitating injury that affects a person's ability to communicate and swallow. Although clinical aspects are understood, how UVFP affects a person's employment and job security is poorly characterized. This study aims to elucidate how frequently patients request job accommodations or experience job loss related to UVFP. **Study design:** Cross-sectional survey. **Setting:** Thirty-four US tertiary care voice centers. **Methods:** We analyzed data from a prospective cohort of patients with UVFP recruited from 34 vocal Cord Paralysis Experience (CoPE) collaborative voice centers. Sociodemographic information, clinical and treatment history, and patient-reported outcome measures were collected. Patients also provided employment information, whether they requested job accommodations, and if they experienced job loss due to UVFP. **Results:** In all, 613 participants (mean age 58 years, 65% women, 84% Caucasian) enrolled in CoPE. In total, 64 (10%) had requested job accommodations, and 46 (7.5%) reported job loss due to UVFP. Women (odds ratio [OR] 2.6, 95% CI: 1.4-5.0, P = .004) and participants with higher levels of education were more likely to request work accommodations (OR 4.5, 95% CI: 1.4-14.7, P = .01). **Conclusion:** UVFP has major impacts on employment with 1 in 10 patients requesting job accommodations and 1 in 13 experiencing job loss. Our results raise awareness of the importance of timely, effective treatment for UVFP and should alert treating clinicians to provide support to patients who may require job accommodations.

Lakpa et al. 2025.

Otolaryngology – Head and Neck Surgery, vol. 173, no. 4.

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Keywords: Accommodations; job loss; unilateral vocal fold paralysis.

Evidence Level: 4B

Link: <https://aao-hnsfjournals.onlinelibrary.wiley.com/doi/10.1002/ohn.1334>

Adapting to the Future of Work

Aging Workforce

Changes in health behaviors and risk of cardiovascular disease among midlife and aging municipal employees with and without metabolic risk factors: A register-linkage cohort study in Finland

Objective: To investigate associations between changes in health behaviors and cardiovascular disease (CVD) risk among municipal employees, stratified by baseline metabolic risk factors (hypertension, hypercholesterolemia, obesity, diabetes). **Methods:** We followed 4470 municipal employees in Helsinki, Finland (74 % women; median age 56.1 years) for an average of 11 years (2007-2022) to assess incident CVD. Survival curves estimated median survival differences, and hazard ratios (HRs) evaluated CVD risk related to changes in smoking, physical activity, alcohol consumption, diet, and sleep. **Results:** During the follow-up, 1879 (42 %) individuals developed CVD. Among those without metabolic risk factors, improvement in health behavior score was linked to reduced CVD risk and an 8.1-year longer median survival (HR = 0.59, 95 % CI = 0.41-0.86). Across metabolic risk-factor groups, the most considerable reductions were observed in the transition from physical inactivity to activity among individuals with hypertension (HR = 0.66, 95 % CI = 0.49-0.87), diabetes (HR = 0.51, 95 % CI = 0.30-0.87), and obesity (HR = 0.63, 95 % CI = 0.43-0.93). **Conclusions:** Changes in health behaviors were associated with CVD risk, varying by metabolic factors. Findings support targeted interventions to promote behavior change, particularly increasing physical activity in those with metabolic risks.

Harkko et al. 2025.

Preventative Medicine, vol. 199.

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Keywords: Cardiovascular disease; cohort studies; health behaviors; metabolic risk-factors; survival analysis.

Evidence Level: 4B

Link: <https://www.sciencedirect.com/science/article/pii/S0091743525001628?via%3Dihub>

Multidimensional health patterns and labor market participation among older workers: Evidence from a European six-year follow-up study

Health is a multidimensional concept and consists of different dimensions such as mental and physical health. In this study, we built on this conception of health by investigating the effects of multidimensional health patterns (MHP) on labor force participation among older workers. We used data from 5'006 older workers (mean age: 55.8 years; 56% female) from the Survey of Health, Ageing and Retirement in Europe. In a first step, we conducted a latent transition analysis with four health indicators (chronic diseases, limitations with activities, self-perceived health, and depressive symptoms) to identify the MHP. In a second step, we assessed the association of the MHP with workers' labor force participation six years after the first point of observation using Wald tests. Our analysis provided us with four MHP: (1) overall healthy workers, (2) workers with moderate activity limitations and low self-perceived health, (3) physically healthy workers with low self-perceived health and depressive symptoms, and (4) workers with overall poor health. We found differences between the MHP in job situation ($p < 0.001$) and changes in working hours ($p < 0.001$) four years later, with MHP 4 showing the highest probability of being permanently sick or disabled and MPH 2 and 3 showing the greatest reductions in working hours. Our results imply that physical health is a better predictor of labor force participation among older workers than other dimensions of health. Using health as a multidimensional construct thus allows to better understand the social implications of poor health.

Baumann et al. 2025.

PLoS One, vol. 20, no. 10.

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Keywords: Older workers; mental health; physical health; health patterns; labor market.

Evidence Level: 4B

Link: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0333659>

Technology

Sick of robots-heterogeneous effects of industrial robots on sickness absence

This paper studies how the introduction of industrial robots affects sickness absence among workers in the manufacturing sector in Norway. We use data on the imports of industrial robots at the firm level, combined with employee-firm linked register data, to investigate the impact of robotization on the duration of sick leave (SL). We find that robotization leads to a statistically significant increase in SL duration of approximately 1.7 days. Workers in blue-collar occupations are especially negatively affected, and among this group those with routine tasks experience even higher levels of SL following robotization, with an average increase of around 5 days. We conduct additional analyses looking at different categories of diagnoses across various occupation groups and find heterogeneous effects. Our results suggest that for blue-collar and routine workers robotization leads to increased musculoskeletal SL, while we only observe an increase in injuries for STEM workers, with maintenance engineers especially negatively affected. Our findings suggest several mechanisms that differ by type of occupation, ranging from musculoskeletal diagnoses caused by repetitive strain to an increase in injuries resulting from working directly with the newly installed industrial robots.

Umblijs et al. 2025.

Health Economics, vol. 34, no. 10.

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Keywords: Firm level analysis; industrial robots; manufacturing; sickness absence.

Evidence Level: 4B

Link: <https://onlinelibrary.wiley.com/doi/10.1002/hec.70010>