

ABOUT RESEARCH ALERT

Research Alert is a service provided to you by the Institute for Work & Health (IWH) to help you keep abreast of recent literature in the areas of occupational health and safety, epidemiology, public health and others within the IWH mandate. Please note that these articles have not been reviewed by Institute scientists to assess the quality of the studies. Research Alerts should not be considered an endorsement of the findings. Readers are cautioned not to act on the results of single studies, but rather to seek bodies of evidence. It should also be noted that the Institute for Work & Health cannot provide full-text of articles listed in Research Alerts to individuals outside of the organization, as this violates copyright legislation.

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

***Elsman EBM, Mokkink LB, Terwee CB, Beaton D, Gagnier JJ, Tricco AC, et al. Guideline for reporting systematic reviews of outcome measurement instruments (OMIs): PRISMA-COSMIN for OMIs 2024. *Journal of Clinical Epidemiology*. 2024; [epub ahead of print].**

<https://doi.org/10.1016/j.jclinepi.2024.111422>

Abstract: BACKGROUND AND OBJECTIVE: Although comprehensive and widespread guidelines on how to conduct systematic reviews of outcome measurement instruments (OMIs) exist, for example from the COSMIN (Consensus-based Standards for the selection of health Measurement INstruments) initiative, key information is often missing in published reports. This article describes the development of an extension of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guideline: PRISMA-COSMIN for OMIs 2024. METHODS: The development process followed the Enhancing the QUALity and Transparency Of health Research (EQUATOR) guidelines and included a literature search, expert consultations, a Delphi study, a hybrid workgroup meeting, pilot testing, and an end-of-project meeting, with integrated patient/public involvement. RESULTS: From the literature and expert consultation, 49 potentially relevant reporting items were identified. Round 1 of the Delphi study was completed by 103 panelists, whereas round 2 and 3 were completed by 78 panelists. After 3 rounds, agreement ($\geq 67\%$) on inclusion and wording was reached for 44 items. Eleven items without consensus for inclusion and/or wording were discussed at a workgroup meeting attended by 24 participants. Agreement was reached for the inclusion and wording of 10 items, and the deletion of 1 item. Pilot testing with 65 authors of OMI systematic reviews further improved the guideline through minor changes in wording and structure, finalized during the end-of-project meeting. The final checklist to facilitate the reporting of full systematic review reports contains 54 (sub)items addressing the review's title, abstract, plain language summary, open science, introduction, methods, results, and discussion. Thirteen items pertaining to the title and abstract are also included in a

separate abstract checklist, guiding authors in reporting for example conference abstracts. CONCLUSION: PRISMA-COSMIN for OMIs 2024 consists of two checklists (full reports; abstracts), their corresponding explanation and elaboration documents detailing the rationale and examples for each item, and a data flow diagram. PRISMA-COSMIN for OMIs 2024 can improve the reporting of systematic reviews of OMIs, fostering their reproducibility and allowing end-users to appraise the quality of OMIs and select the most appropriate OMI for a specific application. NOTE: This paper was jointly developed by Journal of Clinical Epidemiology, Quality of Life Research, Journal of Patient Reported Outcomes, Health and Quality of Life Outcomes and jointly published by Elsevier Inc, Springer Nature Switzerland AG, and BioMed Central Ltd., part of Springer Nature. The articles are identical except for minor stylistic and spelling differences in keeping with each journal's style. Either citation can be used when citing this article

Alexander L, Cooper K, Peters MDJ, Tricco AC, Khalil H, Evans C, et al. Large scoping reviews: managing volume and potential chaos in a pool of evidence sources. Journal of Clinical Epidemiology. 2024; 170:111343.

<https://doi.org/10.1016/j.jclinepi.2024.111343> [open access]

Abstract: Scoping reviews can identify a large number of evidence sources. This commentary describes and provides guidance on planning, conducting, and reporting large scoping reviews. This guidance is informed by experts in scoping review methodology, including JBI (formerly Joanna Briggs Institute) Scoping Review Methodology group members, who have also conducted and reported large scoping reviews. We propose a working definition for large scoping reviews that includes approximately 100 sources of evidence but must also consider the volume of data to be extracted, the complexity of the analyses, and purpose. We pose 6 core questions for scoping review authors to consider when planning, developing, conducting, and reporting large scoping reviews. By considering and addressing these questions, scoping review authors might better streamline and manage the conduct and reporting of large scoping reviews from the planning to publishing stage

Bayona A, Hallowell MR, and Bhandari S. The things that hurt people are not the same as the things that kill people: key differences in the proximal causes of low- and high-severity construction injuries. Journal of Construction Engineering and Management. 2024; 150(8):04024089.

<https://doi.org/10.1061/JCEMD4.COENG-14545> [open access]

Abstract: The safety profession has been shaped by the assumption that there is a fixed ratio of low- to high-severity injuries and the notion that injuries of all severity levels share the same general causes. There is now very strong empirical evidence that this ratio is not fixed, which has led to a new hypothesis that serious injuries and fatalities (SIFs) happen for different reasons than lower-severity injuries and the idea that a targeted approach is needed for SIF prevention. To better understand this phenomenon, this study explored the question: what, if anything, is different about the causes of SIFs? To answer this question, a research team of construction safety experts and academics hypothesized seven factors that may be unique to high-severity injuries. Concurrently, details of serious injuries and fatalities (SIF, $n=13$), potential serious injuries and fatalities (PSIF, $n=12$), and low-severity injuries (LSI, $n=13$) were collected from utility, oil and gas, commercial, pipeline, and specialized construction trades. Blind to each injury outcome, the team assessed the presence or absence of the seven potential differentiators. The samples were then compared using Fisher's exact test to determine if any factors explained the differences among the injury types. Although there

were no differences between SIF and PSIF cases, two factors differentiated LSI and PSIF/SIF: (1) absent direct controls; and (2) absent or not followed work plan. Surprisingly, no human factors were significant. The results indicate that the control of high-energy hazards through effective work planning, discipline, and execution is vital for targeting SIFs, supporting the theory that a differentiated approach is needed to avoid the concerning plateau in the rate of construction fatal injuries.

Brijnath B, Muoio R, Feldman P, Ghersi D, Chan AW, Welch V, et al. "We are not invited": Australian focus group results on how to improve ethnic diversity in trials. *Journal of Clinical Epidemiology*. 2024; 170:111366.

<https://doi.org/10.1016/j.jclinepi.2024.111366> [open access]

Abstract: OBJECTIVES: Lack of ethnic diversity in trials may contribute to health disparities and to inequity in health outcomes. The primary objective was to investigate the experiences and perspectives of ethnically diverse populations about how to improve ethnic diversity in trials. STUDY DESIGN AND SETTING: Qualitative data were collected via 16 focus groups with participants from 21 ethnically diverse communities in Australia. Data collection took place between August and September 2022 in community-based settings in six capital cities: Sydney, Melbourne, Perth, Adelaide, Brisbane, and Darwin, and one rural town: Bordertown (South Australia). RESULTS: One hundred and fifty-eight purposively sampled adults (aged 18-85, 49% women) participated in groups speaking Tamil, Greek, Punjabi, Italian, Mandarin, Cantonese, Karin, Vietnamese, Nepalese, and Arabic; or English-language groups (comprising Fijian, Filipino, African, and two multicultural groups). Only 10 participants had previously taken part in medical research including three in trials. There was support for medical research, including trials; however, most participants had never been invited to participate. To increase ethnic diversity in trial populations, participants recommended recruitment via partnering with communities, translating trial materials and making them culturally accessible using audiovisual ways, promoting retention by minimizing participant burden, establishing trust and rapport between participants and researchers, and sharing individual results. Participants were reluctant to join studies on taboo topics in their communities (eg, sexual health) or in which physical specimens (eg, blood) were needed. Participants said these barriers could be mitigated by communicating about the topic in more culturally cognizant and safe ways, explaining how data would be securely stored, and reinforcing the benefit of medical research to humanity. CONCLUSION: Participants recognized the principal benefits of trials and other medical research, were prepared to take part, and offered suggestions on recruitment, consent, data collection mechanisms, and retention to enable this to occur. Researchers should consider these community insights when designing and conducting trials; and government, regulators, funders, and publishers should allow for greater innovation and flexibility in their processes to enable ethnic diversity in trials to improve

Deubner HL, Walendzik G, Ludeke A, and Schluter U. Assessing the impact of authorisation process as a regulatory tool in the European REACH regulation: a study on improving occupational safety for applying companies. *Annals of Work Exposures and Health*. 2024; 68(6):617-625.

<https://doi.org/10.1093/annweh/wxae032> [open access]

Abstract: This study looks into the effectiveness of the authorisation procedure as a regulatory instrument within the framework of the European REACH regulation. It highlights its impact on enhancing occupational safety and health for both applicants and companies utilising the substances.

This procedure encompasses manufacturers, importers, and downstream users of substances, as well as representatives of foreign manufacturers who are also eligible to seek authorisation. When applying for authorisation, the ECHA Risk Assessment Committee (RAC) assesses the risks associated with the intended uses of the substance, including the appropriateness and effectiveness of the Occupational Conditions (OCs) and Risk Management Measures (RMMs) described in the application and the risks posed by potential alternatives. If the RAC determines that the OCs/RMMs are inadequate for managing or controlling the risk, or if the measures to protect workers are deemed insufficient, it may recommend additional measures to enhance occupational safety and health or environmental protection. The 398 processed Applications for Authorisation (AfA) that have been submitted to date were examined to determine these recommended measures, categorised as Conditions for use, Monitoring arrangements, and Recommendations for Review Reports. Overall, a significant improvement concerning occupational safety and health seems necessary, as indicated by the large number of measures recommended by the ECHA Committee for Risk Assessment (RAC) and ECHA Committee for Socio-economic Analysis (SEAC) or supplemented by the European Commission. In addition to the proposed measures, a short assessment provided by the committees as to whether the operational conditions and risk management measures are adequate in controlling the risks is also included in the study

Esteve R, Barrado-Moreno V, Ramirez-Maestre C, Serrano-Ibanez ER, de la Vega R, Ruiz-Parraga GT, et al. Psychological profiles and prescription opioid misuse, craving, and withdrawal in people with chronic pain. *European Journal of Pain*. 2024; 28(6):943-959.

<https://doi.org/10.1002/ejp.2233>

Abstract: BACKGROUND: The negative consequences of prescription opioid misuse and opioid use disorder make it relevant to identify factors associated with this problem in individuals with chronic pain. This cross-sectional study aimed at identifying subgroups of people with chronic pain based on their psychological profiles, prescription opioid misuse, craving, and withdrawal. METHODS: The sample comprised 185 individuals with chronic pain. We performed hierarchical cluster analysis on impulsivity, anxiety sensitivity, pain acceptance, pain intensity, opioid misuse, craving, and withdrawal. RESULTS: The four-cluster solution was the optimal one. Misuse, craving, and anxiety sensitivity were higher among people in the Severe-problems cluster than among people in the other three clusters. Withdrawal was the highest in the High-withdrawal cluster. Impulsivity was higher among people in the Severe-problems and High-withdrawal clusters than those in the Moderate-problems and Mild-problems clusters. Pain acceptance was higher among people in the Mild-problems cluster than among people in the other three clusters. Anxiety sensitivity and misuse were higher among people in the Moderate-problems cluster than among people in the Mild-problems cluster. CONCLUSIONS: These results support that impulsivity, anxiety sensitivity, and pain acceptance are useful constructs to identify subgroups of people with chronic pain according to their level of prescription opioid misuse, craving, and withdrawal. The results of this study may help in selecting the early intervention most suitable for each of the identified profiles. SIGNIFICANCE: The psychological profile of individuals with chronic pain, prescription opioid misuse, craving, and withdrawal is characterized by fearing anxiety-related symptoms due to the catastrophic interpretation of such symptoms and reacting impulsively to negative moods. In contrast, participants with high pain acceptance had less prescription opioid misuse, craving, and withdrawal. The profiles identified in this

study could help clinicians select targets for intervention among profiles with similar needs and facilitate early interventions to prevent opioid misuse onset or aggravation

Gedik Toker O and Kuru E. The effect of occupational exposure to noise and chemical agents on hearing abilities. Archives of Environmental & Occupational Health. 2024; 79(1):1-10.

<https://doi.org/10.1080/19338244.2024.2305803>

Abstract: Exposure to loud noise or chemical agents may cause hearing disorders such as tinnitus and recruitment, known as an increase in the perception of loudness in addition to hearing loss. Our study aims to evaluate the hearing abilities of hairdressers exposed to noise and chemical agents in the working environment. The study included one hundred hairdressers and one hundred participants who do not work as hairdressers or are nonworkers. The participants' demographic characteristics, working conditions, and auditory complaints were questioned, and each participant completed the Speech, Spatial, and Qualities of Hearing Scale (SSQ). A statistically significant difference was found between the two groups in speech perception, spatial perception, hearing quality, and general SSQ scores. Hairdressers' SSQ scores were significantly lower in all sub-dimensions and general scale scores ($p < 0.001$). The auditory complaints of the hairdressers and the low SSQ scores indicate that exposure to noise and chemical agents affects the hairdressers' hearing system

Guth M, Pilorget C, Lefevre M, Coste A, Danjou A, Dananche B, et al. Occupational exposure to organic solvents and the risk of developing testicular germ cell tumors (TESTIS study): effect of combined exposure assessment on risk estimation. Scandinavian Journal of Work, Environment & Health. 2024; 50(5):359-371.

<https://doi.org/10.5271/sjweh.4161> [open access]

Abstract: OBJECTIVES: Etiological factors of testicular germ cell tumors (TGCT) remain largely unknown, but a causal role of occupational exposures to solvents has been suggested. Previous studies analyzing these exposures reported discordant results, potentially related to exposure assessment methods. The aim of this study was to investigate the role of occupational exposure to solvents on the risk of developing TGCT among young men. METHODS: This study examined occupational exposures to solvents and TGCT risk based on the lifetime work histories of 454 cases and 670 controls, aged 18-45 years, of the French national TESTIS case-control study. Solvent exposure was estimated using: (i) exposure assignment by job-exposure matrix (JEM) and (ii) JEM combined with self-reported exposure data from specific questionnaires (SQ) and expert assessment (EA). Odds ratios (OR) and 95% confidence intervals (CI) were estimated using conditional logistic regression models. RESULTS: Both approaches (JEM and JEM+SQ+EA) showed a consistent association between TGCT and trichloroethylene exposure (exposed versus not exposed; JEM=OR 1.80 [95% confidence interval (CI) 1.12-2.90] and JEM+SQ+EA= OR 2.59 (95% CI 1.42-4.72). Both approaches also observed positive associations with ketone esters and fuels & petroleum-based solvents. CONCLUSION: The results suggest that some organic solvents might be involved in the pathogenesis of TGCT among occupationally exposed men. The combined use of JEM+SQ+EA seemed to limit misclassification by considering individual exposure variability and is, therefore, an appealing approach to assess occupational exposures in epidemiological studies

Jahn A, Andersen JH, Seidler A, Christiansen DH, and Dalboge A. Occupational psychosocial exposures and chronic low-back pain: a systematic review and meta-analysis. *Scandinavian Journal of Work, Environment & Health*. 2024; 50(5):329-340.

<https://doi.org/10.5271/sjweh.4165> [open access]

Abstract: Objective: This study aimed to explore the association between occupational psychosocial exposures and chronic low-back pain (LBP) by conducting a systematic review and meta-analysis. **Methods:** The research protocol was registered in PROSPERO. A systematic literature search was performed in six databases, identifying articles complying with predefined inclusion criteria. In our PECOS, we defined outcome as chronic LBP ≥3 months, exposures as occupational psychosocial exposures, and restricted study design to case-control and cohort studies. Two authors independently excluded articles, extracted data, assessed risk of bias, and graded evidence levels. Meta-analyses were performed using random-effects models. **Results:** The 20 included articles encompassed six different occupational psychosocial exposures (job control, demand, strain, support, stress, and satisfaction), only 1 had low risk of bias. For all occupational psychosocial exposures, odds ratios ranged from 0.8 to 1.1. Sensitivity analyses based on risk of bias was conducted for two outcomes ie, job control and job demand, finding no differences between high and low-to-moderate risk of bias studies. Using GRADE, we found a very low level of evidence of the association for all occupational psychosocial exposures. **Conclusion:** In this study, we found no association between occupational psychosocial exposures and chronic LBP. However, it is important to underline that the level of evidence was very low. High quality studies are highly warranted.

Kiema-Junes H, Saarinen A, Ala-Mursula L, and Hintsanen M. Associations of chronotype, work schedule, and sleep problems with work engagement experiences in middle age: the Northern Finland birth cohort 1966. *Journal of Occupational & Environmental Medicine*. 2024; 66(6):450-455.

<https://doi.org/10.1097/JOM.0000000000003070> [open access]

Abstract: OBJECTIVE: The aim of the study is to investigate the role of chronotype for work engagement in middle age. **METHODS:** We used data from the Northern Finland Birth Cohort 1966 study (N = 5341) to analyze associations of self-reported chronotype (morning, intermediate, and evening type) with work engagement and its dimensions (vigor, dedication, absorption). We conducted multivariate analyses of variance to examine whether work schedule or sleep problems moderate these associations. **RESULTS:** Evening types showed lower scores in work engagement and its dimensions than intermediate and morning types, even when work schedule and sleep problems were controlled. Sleep problems emphasized the chronotype-work engagement and chronotype-dedication linkages. **CONCLUSIONS:** Chronotype may play a role in employees' work engagement. In addition, sleep problems seem relevant in terms of chronotype-work engagement linkage

Komp-Leukkunen K. Extended working lives in Denmark and Finland: influences of computerization. *Nordic Journal of Working Life Studies*. 2024; 14(S12):87-104.

<https://doi.org/10.18291/njwls.143480> [open access]

Abstract: Extended working lives become important in aging populations. Yet, for a long time, increasing computer use pushed older individuals out of the workforce. Recently, older workers' computer skills have improved. This article investigates how computer use, experience, and training affect workforce participation in old age in countries with widespread computer use. It conducts regression analyses of Danish and Finnish survey data. Findings show that individuals who used

computers had a higher chance of remaining in the workforce. Computer experience made older Finns marginally more likely to retire. However, computer training had no influence. Findings suggest that the relevance of computer use for extended working lives depends on a country's computerization level: the higher the level, the less of an obstacle to extended working lives computerization presents. Policymakers should facilitate older workers' computer use especially when computers are first introduced, and explore alternative means for extending working lives afterwards.

Polvinen A and Laaksonen M. Contribution of age, gender and occupational group to the higher risk of disability retirement among Finnish public sector employees. *Scandinavian Journal of Public Health*. 2024; 52(4):419-426.

<https://doi.org/10.1177/14034948231153913>

Abstract: BACKGROUND: The aim of this study was to examine the differences in disability retirement between public and private sector employees and to examine the contribution of age, gender and occupational group to the differences between the sectors. METHODS: Our Finnish register data consisted of about two million non-retired men and women aged 30-62 years. Cox proportional hazard models were used to calculate hazard ratios for any, full and partial disability retirement in the public sector compared with the private sector. RESULTS: The risk of any disability retirement was higher in the public sector than in the private sector in all occupational groups. The unadjusted hazard ratio ranged from 1.29 (95% CI 1.16-1.44) among teaching professionals to 2.25 (95% CI 1.95-2.58) among skilled agricultural, forestry and fishery workers. Adjustment for age and gender attenuated the differences between the sectors. After adjusting for age, gender and occupational group, the hazard ratio was 1.29 (95% CI 1.27-1.32) for any disability retirement and 2.02 (95% CI 1.96-2.08) for partial disability retirement, but there was no difference between the public sector and private sector employees for full disability retirement. CONCLUSIONS: Adjustment of age and gender attenuated the higher risk of disability retirement in the public sector, while adjustment for occupational group widened the sector differences in any and full disability retirement. The risk of partial disability retirement was higher in all occupational groups in the public sector than in the private sector. For full disability retirement, the differences between the sectors were small or non-existent

Salas-Nicas S, Esteve-Matali L, Llorens-Serrano C, and Navarro-Gine A. Job insecurity, mental health, and general health over time: a longitudinal update of a cross-sectional study. *Journal of Occupational & Environmental Medicine*. 2024; 66(7):523-527.

<https://doi.org/10.1097/JOM.0000000000003096>

Abstract: OBJECTIVE: The aim of the study is to test the relationship between different conceptualizations of job insecurity and health over time by applying a longitudinal design. METHODS: 543 workers were reinterviewed after 1 year to check if being exposed to job insecurity affected their general and mental health. Robust Poisson regressions were fitted to calculate the incidence rate ratio between job insecurities and two health outcomes. RESULTS: Cognitive job loss insecurity increases the risk of poor mental and general health. Other expressions of job insecurity such as labor market insecurity and working conditions insecurity, as well as affective job insecurity, are not significantly related to health across time. CONCLUSIONS: Caution is needed when interpreting cross-sectional results. Protection against the threat of losing a job would prevent mental health issues and poor general health

Siefert E, Delva F, Paris C, Pairon JC, and Thaon I. Quality of life in retired workers with past exposure to asbestos. *American Journal of Industrial Medicine*. 2024; 67(7):610-623.

<https://doi.org/10.1002/ajim.23592>

Abstract: Background: Asbestos causes cancer and non-cancerous lung and pleural diseases and can also have a negative psychological impact but little is known about its effect on health-related quality of life. Objectives: The aim of this study is to describe the health-related quality of life (HRQoL) of retired men with a history of occupational exposure to asbestos and examine factors linked with low HRQoL. Methods: Retired male workers of the French Asbestos-Related Disease Cohort (ARDCO) completed self-questionnaires that included SF-36v2 and HAD scales, questions about their perception of asbestos (perceived dangers and level of exposure, expectations to fall ill, or knowing someone who is) and their respiratory symptoms. Asbestos exposure was assessed by industrial hygienists. A perceived risk score was created using factorial analysis. Multivariable regressions were performed for all SF-36 subscales. Results: A total of 1266 of 2075 questionnaires (61%) were returned complete and included in analysis. After adjustment for potential confounders, an increase in perceived risk score resulted in a decrease in physical component summary score (PCS), up to 10.7 points ($p = 0.048$) and in mental component summary score (MCS) ($p = 0.044$). Presence of respiratory symptoms was also associated with significantly decreased PCS and MCS ($p < 0.001$). Poor HRQoL was linked to higher perceived risk score with $p = 0.01$ for all SF-36 dimensions. Asbestos exposure assessed by an expert was not associated with any outcome. Conclusions: All dimensions of HRQoL appear to be affected by the perceived risk of incurring asbestos-related disease and respiratory symptoms.

Walsh AL, Washington TS, Petrunoff N, and Heesch KC. "By the time I'm home, I'm not stressed anymore": a qualitative exploration of enablers of active commuting among office workers. *Journal of Transport & Health*. 2024; 37:101841.

<https://doi.org/10.1016/j.jth.2024.101841> [open access]

Abstract: Background and rationale Promoting active commuting (AC; walking, running, or cycling between home and work) is gaining popularity as a strategy for increasing physical activity among working adults. Previous research has identified predictors of AC, with a focus on barriers, with minimal exploration of workers' lived experiences and motivations of office workers who choose active commuting modes. This research aimed to qualitatively explore the factors that enable active commuting among office workers. Methods Fifty-one volunteers were recruited from three office-based workplaces in Brisbane, Australia, via convenience sampling, to participate in focus groups. Thematic analysis was conducted to identify key themes. Results The study included six focus groups of six to 10 participants. They were office workers from a private engineering firm, a government department, and a university campus, with usual commute modes including public transport, cycling, walking, running and private motor vehicle (as driver or passenger). Nearly all commuters, irrespective of their chosen mode of commuting, highlighted that financial cost and travel time considerations played a significant role in determining their mode choice. Physical and mental health (e.g., stress management), convenience, predictability and flexibility were also important factors influencing the choice of active modes. High quality end-of-trip facilities were identified as a potential facilitator of AC, especially among women. Conclusions This research reveals areas of focus for future interventions, both behavioural and built environment. The results suggest that interventions to promote AC should highlight the mental health benefits, substantial money savings through reduced

transport costs, and improvements in predictability of travel time. Improving the quality of end-of-trip facilities, so that users have a “business class” experience, may also encourage uptake of AC.

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