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

**Baasner AL, Petrak S, Albersmann L, Grohl S, Lemke S, and Bethge M. A meta-synthesis of qualitative research on effective return to work counseling for individuals with work participation restrictions: a systematic review. *Journal of Occupational Rehabilitation*. 2025; 35(4):725-740.**

<https://doi.org/10.1007/s10926-024-10250-7>

Abstract: PURPOSE: The aim of this systematic review was to summarize the qualitative evidence on factors of effective counseling aiming at work participation for people with chronic diseases and/or disabilities. METHODS: We conducted a systematic literature search in MEDLINE (PubMed), CINAHL, Web of Science, PsycINFO, and PubPsych in March 2023. Our inclusion criteria stipulated that counseling should be specifically designed for individuals experiencing constraints in work participation and published in German or English between 2013 and 2023. To assess the quality of the included studies, we used the checklist of the Critical Appraisal Skills Programme. We synthesized our findings according to the meta-ethnographic methodology by Noblit and Hare. RESULTS: Of the 2901 papers found in the systematic search, we included 16 qualitative studies in our meta-synthesis. Studies were conducted in Australia, the USA, Canada, Nordic countries, and Germany. Our "model of the effectiveness of counseling for work participation" consists of four levels. At the extended organizational level, potential factors include the provision of sufficient time and work resources for counselors or contact persons. At the team and stakeholder level, structural collaboration, for example, is crucial. In the counseling dyad, counselors can employ shared decision-making and at the individual level, personal character traits and the client's motivation are exemplary factors. CONCLUSION: This study provides a comprehensive overview of factors contributing to effective counseling in the context of work participation. The delineation across various levels underscores that

effectiveness in counseling is a collective outcome, involving not only the advisor but also other stakeholders

**Condie E, Weale V, and Oakman J. Workplace based interventions which apply the stages of change framework to their design: a scoping review. *Applied Ergonomics*. 2025; 130:104646.**

<https://doi.org/10.1016/j.apergo.2025.104646> [open access]

**Abstract:** OBJECTIVE: This scoping review summarises the amount and types of evidence available for workplace-based interventions that include the Stages of Change (SOC) framework in their design. METHODS: Seven electronic databases were searched for studies of workplace-based interventions that included SOC in their design. Studies were classified according to how SOC was incorporated into the intervention, the intervention target (individual or the organisation), which SOC measurement tools were used, and outcome measures. RESULTS: Thirty-six articles met the inclusion criteria. Four focused on organisational level ergonomics changes to work systems, the work environment, and/or work practices. The remaining three organisationally focused articles aimed to influence behaviours such as nutrition choices and smoking cessation, by modifying workplace factors such as the display of information and environmental changes. The remaining 29 articles focused on modifying individual behaviours, primarily through the provision of information and/or coaching to participants. None of the included studies targeted managers or other workplace decision makers. CONCLUSIONS: Four articles used SOC to implement ergonomics changes. Opportunities exist for further research evaluating how SOC could support organisational change, with particular regard to implementation of ergonomists' advice and recommendations

**Elling JM, Sanger N, Schwarz B, Seifert N, and Hetzel C. Return to work after medical rehabilitation for musculoskeletal disorders in times of the COVID-19 pandemic: a retrospective cohort study. *Archives of Physical Medicine & Rehabilitation*. 2025; 106(11):1685-1693.**

<https://doi.org/10.1016/j.apmr.2025.04.001> [open access]

**Abstract:** OBJECTIVE: To describe and explain the effect of the coronavirus disease 2019 pandemic and its related measures on return to work (RTW) outcomes after multimodal medical rehabilitation for musculoskeletal disorders. DESIGN: Retrospective cohort study. SETTING: Three cohorts: reference (rehabilitation and RTW prepandemic), pandemic 1 (rehabilitation prepandemic, RTW during pandemic), and pandemic 2 (rehabilitation and RTW during pandemic). PARTICIPANTS: Individuals who underwent multimodal medical rehabilitation for musculoskeletal disorders through the German Pension Insurance system between January 2018 and December 2021 (N=688,127). INTERVENTIONS: Not applicable. MAIN OUTCOME MEASURES: A successful and stable RTW was operationalized as having employment subject to social insurance contributions from 9 to 12 months after rehabilitation. RESULTS: Descriptive analysis revealed an RTW rate of 67.2% in the reference cohort, a slight decline in pandemic cohort 1 (66.3%), and a more pronounced decrease in pandemic cohort 2 (63.1%). In contrast, average marginal predictions from a logistic model including various covariates showed that both pandemic cohorts (63.8% and 64.4%) exhibited similarly reduced predicted probabilities of RTW compared with the reference cohort (66.5%). Individuals with sick leave durations exceeding 6 months, compared with those with shorter sick leaves, were more negatively affected by pandemic cohort 1; however, this effect recovered in pandemic cohort 2. The interaction between cohort and income did not show any amplifying effect of the pandemic. CONCLUSIONS: The logistic model revealed no differences in predicted probabilities of RTW between pandemic cohort 2 and pandemic

cohort 1, suggesting that orthopedic rehabilitation remained robust in maintaining RTW outcomes despite pandemic-related challenges. The findings offer mixed evidence regarding the question of whether the pandemic amplified preexisting barriers to RTW

**Frankel HN, Flachs EM, Sejbaek CS, Petersen JA, Bonde JP, Mehlum IS, et al. Development of a quantitative job exposure matrix for standing, walking, and forward bending among pregnant workers: the PRECISE JEM. *Scandinavian Journal of Work, Environment & Health*. 2025; 51(6):526-536.**

<https://doi.org/10.5271/sjweh.4252> [open access]

Abstract: OBJECTIVES: Occupational physical activity (OPA) during pregnancy has been linked to adverse pregnancy outcomes, but crude exposure assessment remains an issue in causal inference. We aimed to develop a quantitative trimester-specific job exposure matrix (JEM) for standing, walking, and forward bending among pregnant workers. METHODS: Accelerometer measurements from 403 female workers across 109 DISCO-08 job codes were obtained in Denmark between January 2023 and June 2024. Full workdays were measured during two weeks among pregnant workers and one week among non-pregnant workers. We used linear mixed-effects models to estimate exposure levels of occupational standing, walking, and forward bending for all 1171 DISCO-08 codes, including age, trimester, and expert ratings as fixed effects, and job codes and workers as random effects. RESULTS: The between-job variances relative to total variances were 56% for standing, 51% for walking, and 45% for forward bending. The fixed effect trimester reduced standing time by 0.38 hours during the 3rd trimester compared to non-pregnant participants, whereas no differences were observed for walking or forward bending. Based on the trimester-specific JEM for occupational standing time, bakers had the highest exposure (range from non-pregnant to 3rd trimester, 5.41-5.03 hours/workday). For walking and forward bending, the highest exposed jobs from the pregnancy-specific JEM were waiters (1.76 hours/workday) and livestock/dairy producers (1.24 hours/workday), respectively. CONCLUSIONS: The JEM enhances independent objective exposure assessment in epidemiological studies of OPA and pregnancy outcomes and may advance guidelines and potentially prevent adverse pregnancy outcomes

**He T, Wei L, Goodman MS, Pagan JA, Cuevas AG, and Bather JR. Remote work and loneliness: evidence from a nationally representative sample of employed U.S. adults. *Journal of Affective Disorders*. 2026; 393(Pt B):120456.**

<https://doi.org/10.1016/j.jad.2025.120456>

Abstract: Objectives: To examine whether remote workdays are associated with loneliness among employed adults in the United States. Methods: Data were drawn from the 2024 Household Pulse Survey. Remote work frequency was measured as (0, 1-2, 3-4, or 5+ days/week). Loneliness was assessed with a single-item measure adapted from the UCLA Loneliness Scale. Weighted ordinal logistic regression was used to estimate the odds of loneliness. We adjusted for demographic variables and social isolation indicators. Results: Among 87,317 respondents (representing 33,233,325 employed U.S. adults), those working remotely 3-4 days per week had higher adjusted odds (adjusted odds ratio [aOR] = 1.16, 95 % CI = 1.08-1.26) for reporting a higher category of loneliness than those not working remotely. Similarly, individuals who worked remotely 5 or more days per week also had increased odds (aOR = 1.09, 95 % CI = 1.02-1.17) of falling into a higher category of loneliness relative to those who did not work remotely. In contrast, working remotely 1-2 days per week was not

significantly linked to loneliness. Conclusions: A high frequency of remote work (>3 days per week) appears to increase the likelihood of loneliness, potentially because of fewer in-person interactions. However, a lower remote work frequency (1-2 days) may offer flexibility without significantly increasing loneliness. Future research should investigate the long-term effects of frequent remote work on social well-being and identify effective interventions to mitigate loneliness.

**Holzwarth B, Webendorfer S, and Claus M. Prevalence of chronic musculoskeletal pain among different occupational groups of a large German chemical company: results of a cross-sectional study. *International Journal of Occupational Safety & Ergonomics*. 2025; 31(3):780-787.**

<https://doi.org/10.1080/10803548.2025.2461911>

**Abstract:** Objectives. This study aimed to examine the prevalence of chronic musculoskeletal pain among employees of a large German chemical company and how it varies depending on occupational group. Methods. Cross-sectional data were collected between 2019 and 2022 during a voluntary occupational health check-up, including a written questionnaire. Chronic musculoskeletal pain was defined as lasting at least 3 months in the past year. Occupational group was operationalized either by self-reported work area or by the International Standard Classification of Occupations 2008 (ISCO-08). Associations between occupational group and chronic musculoskeletal pain were analyzed using robust Poisson regression. Results. The final sample included 13,705 employees. The 12-month prevalence of chronic musculoskeletal pain was 18.6% for the whole sample, and 22.0, 21.9, 20.2 and 15.0% for employees in the work areas other, office, research/laboratory and production/craft, respectively. Regression analyses showed that the prevalence was 24.1% ( $p < 0.001$ ) lower for employees in production/craft and 11.2% ( $p < 0.05$ ) lower for employees in research/laboratory compared to office employees in the fully adjusted model. Conclusions. The high prevalence of chronic musculoskeletal pain underscores the importance of both the prevention and management of chronic musculoskeletal pain. Thereby, workplace-specific needs-based offerings could play an important role.

**Jung AM, Jahnke SA, Dennis LK, Bell ML, Burgess JL, and Farland LV. Infertility burden among women firefighters: a cross-sectional exploratory analysis. *Occupational & Environmental Medicine*. 2025; 82(8):403-405.**

<https://doi.org/10.1136/oemed-2024-109967> [open access]

**Abstract:** 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

**Kersey J, Le C, Evans E, Ahonle ZJ, Garcia P, Lequerica AH, et al. Inclusion of racially and ethnically diverse samples in cognitive rehabilitation research: an ethnographic study of recruitment and retention practices. Archives of Physical Medicine & Rehabilitation. 2025; 106(11):1665-1671.**

<https://doi.org/10.1016/j.apmr.2025.03.043>

Abstract: OBJECTIVE: To describe the recruitment and retention practices of brain injury rehabilitation researchers and factors affecting the inclusion of racially and ethnically diverse research participants. DESIGN: Ethnographic study using surveys and qualitative interviews. SETTING: Virtual. PARTICIPANTS: Eleven investigators (N=11) who published cognitive rehabilitation intervention studies. INTERVENTIONS: Not applicable. MAIN OUTCOME MEASURES: Participants completed a survey describing strategies that have shown promise for the recruitment and retention of diverse participants. They then completed a qualitative interview to describe their priorities, the perceived effectiveness of their practices, and the challenges to recruiting representative samples. Interviews were analyzed using thematic analysis. RESULTS: Investigators reported moderate confidence in their knowledge of promising recruitment strategies but low confidence in implementing those strategies. Qualitative themes were balancing competing recruitment and retention priorities, building relationships with participants and communities, and research infrastructure and policies. Key factors influencing recruitment and retention practices included research study and research team characteristics, institutional infrastructure and policies, local contextual factors, and national academic community infrastructure and norms. CONCLUSIONS: Brain injury rehabilitation research faces significant challenges in achieving representation of racially and ethnically diverse participants. Systemic changes are needed at the study, institutional, and national levels to support more equitable clinical trial enrollment and reduce health disparities for marginalized brain injury survivors

**Lehmann AI and Bauer GF. Occupational health of employees with mental health issues: the role of the psychosocial working conditions and sense of coherence. International Archives of Occupational & Environmental Health. 2025; 98(7):573-585.**

<https://doi.org/10.1007/s00420-025-02154-7> [open access]

Abstract: Background: The high prevalence of mental health issues (MHI) among employees poses significant societal challenges. However, little is known about factors that influence their ability to remain employed, maintain productivity, and thrive at work. Objective: This study examines differences in occupational health outcomes (burnout, work engagement, and work ability) between employees with and without MHI and the applicability of the Job Demands-Resources model (including job demands, job resources as psychosocial working conditions and sense of coherence (SOC) as a personal resource) among employees with MHI, while particularly controlling for disease-specific factors. Methods: Pooled data from two measurement waves were analyzed, including employees with current MHI (N = 92) and those without MHI (N = 877) from German-speaking countries. Mixed-effects models examined relationships between sociodemographic, disease-specific factors, psychosocial working conditions, SOC, and occupational health outcomes. Results: Employees with MHI showed lower occupational health levels (higher burnout, reduced work ability) than those without. Among employees with MHI, SOC and job resources were significantly associated with all occupational health outcomes, while job demands primarily predicted burnout. Sickness absence

correlated negatively with both burnout and work ability. The association between SOC and work ability was stronger for employees with MHI than for those without. Conclusions: Job resources and SOC play a role for occupational health in employees with MHI. Targeted interventions to strengthen these resources should be prioritized.

**O'Connor FK, Janetos KT, Richards BJ, Harris-Mostert RC, Wagar KE, Ioannou LG, et al. Defining sex- and age-specific initial stay times for continuous heavy-intensity work in hot environments before heat-mitigation controls are implemented: part B. *American Journal of Industrial Medicine*. 2025; 68(11):949-964.**

<https://doi.org/10.1002/ajim.70015> [open access]

**Abstract:** Rationale: Industry guidelines recommend work-rest schedules to prevent unsafe core temperature elevations ( $> 38.0^{\circ}\text{C}$  or  $> \Delta 1.0^{\circ}\text{C}$  above baseline resting) in an "average" worker exposed to occupational heat stress. While permissible initial work durations (initial stay times [IST]) before implementing rest schedules have been suggested, existing data are limited to moderate-intensity efforts. Objectives: The objective of this study was to assess whether factors of sex and age influence IST during heavy-intensity work. Methods: We assessed work durations before reaching unsafe core temperature thresholds (i.e.,  $> 38.0^{\circ}\text{C}$  or  $> \Delta 1.0^{\circ}\text{C}$  above baseline resting) among young (18-30 years) and older (50-69 years) males and females during simulated heavy-intensity work at  $26^{\circ}\text{C}$ ,  $29^{\circ}\text{C}$ , and  $32^{\circ}\text{C}$  wet-bulb globe temperatures (WBGT). Findings: The likelihood of surpassing a core temperature of  $38.0^{\circ}\text{C}$  significantly increased at  $32^{\circ}\text{C}$  WBGT (hazard ratio [95% confidence interval]: 2.0 [1.5, 2.7],  $p = 0.001$ ), but not at  $29^{\circ}\text{C}$  WBGT (1.1 [0.9, 1.4],  $p = 0.342$ ), compared to  $26^{\circ}\text{C}$  WBGT. Median (interquartile range) durations to reach  $38.0^{\circ}\text{C}$  across groups were 32 (23-52), 29 (23-47), and 26 (18-35) minutes at  $26^{\circ}\text{C}$ ,  $29^{\circ}\text{C}$ , and  $32^{\circ}\text{C}$  WBGT, respectively. The likelihood of reaching  $\Delta 1.0^{\circ}\text{C}$  above baseline resting significantly increased at both  $32^{\circ}\text{C}$  (3.8 [2.6, 5.4],  $p < 0.001$ ) and  $29^{\circ}\text{C}$  WBGT (1.5 [1.1, 2.0],  $p < 0.001$ ), with median durations being 55 (40-82), 42 (35-56), and 33 (29-42) min, respectively. Older females were more likely to reach  $38.0^{\circ}\text{C}$  (2.4 [1.3, 4.3],  $p = 0.004$ ) and  $\Delta 1.0^{\circ}\text{C}$  above baseline resting (2.5 [1.4, 4.7],  $p = 0.003$ ) compared to young males. No other sex- or age-related differences were detected ( $p > 0.145$ ). Impact: These findings highlight the heightened vulnerability of older females during heavy-intensity occupational heat stress, emphasizing the need for tailored guidelines to ensure equitable workforce protection.

**Prehn J, Remus L, Grope M, and Bethge M. Process evaluation of a case management intervention for people at high risk of permanent work disability to improve rehabilitation coverage and work participation. *International Journal of Rehabilitation Research*. 2025; 48(4):210-216.**

<https://doi.org/10.1097/MRR.0000000000000685>

**Rymenans I, Lauwerier E, Du Bois M, Vanovenberghe C, and Van den Broeck A. Online training improves motivational counseling in health insurance practitioners: a pre-post analysis of return-to-work conversations. *Disability & Rehabilitation*. 2025; 47(22):5934-5942.**

<https://doi.org/10.1080/09638288.2025.2486460>

**Abstract:** PURPOSE: Health insurance practitioners need to evaluate sick-listed workers, motivate them for return-to-work (RTW), and guide them in doing so. This study evaluates the effectiveness of a 10-h, online and interactive training in "motivational counseling," on practitioners' communication behaviors. The training is based on Motivational Interviewing (MI) and Self-Determination Theory (SDT)'s basic psychological need support for autonomy, relatedness, and competence. MATERIALS

AND METHODS: We observed and rated video recordings of online patient encounters, simulated by experienced actors enacting fictive scenarios. Two-tailed Wilcoxon signed-rank tests compared pre- and post-training outcomes of 31 practitioners using observational instruments based on MI and SDT. RESULTS: After training, the practitioners showed significantly more technical (e.g., using reflections) and relational (i.e., seeking collaboration and taking perspective) MI behaviors. Autonomy- and competence-supportive behaviors increased (e.g., providing rationales or feedback) while autonomy-thwarting behaviors decreased (e.g., using controlling language). CONCLUSIONS: The training in motivational counseling effectively promoted motivating communication behaviors among health insurance practitioners, in line with SDT and MI. The online format makes the training practically more feasible for RTW stakeholders operating in time-restrained contexts. More research is needed on training transfer and implementation barriers, as on the impact on sick-listed workers' motivational processes and RTW trajectories

**Skogstad M, Alsaedi S, Sirnes PA, Mamen A, Skare O, Goffeng E, et al. Rotating shift work, with night shift work, affects cardiovascular risk factors: a 6-year follow-up study in the insulation industry. *Occupational & Environmental Medicine*. 2025; 82(7):326-334.**

<https://doi.org/10.1136/oemed-2025-110191> [open access]

Abstract: Objectives: To assess absolute levels and longitudinal changes in cardiovascular disease (CVD) risk factors over 6 years among rotating shift workers with night shift work and day workers in industry. Methods: We studied three groups, 32 night shift workers in Plant A with a high night load, 23 in Plant B with a low night load and 25 day workers during a 6-year follow-up (FU). We collected demographics by questionnaire, measured blood pressure, resting heart rate, carotid intima-media thickness (cIMT), carotid to femoral pulse wave velocity (cfPWV) and maximal oxygen uptake ( $V\dot{O}_2\text{max}$ ). We analysed blood samples including lipids, glycosylated haemoglobin (HbA1c) and C reactive protein (CRP). Mixed models were used to assess changes and differences in changes of these outcomes between shift and day workers. Results: Over the 6-year FU weight, cfPWV and CRP increased among shift workers with a high night load, and cIMT increased among shift workers with a low night load and among day workers. Over the 6-year FU, a significant decrease in  $V\dot{O}_2\text{max}$  and an increase in HbA1c were found among all workers. The decrease in  $V\dot{O}_2\text{max}$  and increase in HbA1c were associated with number of years in shift work. Conclusions: Rotating shift work with night shift work in industry associates with weight increase, inflammation, arterial stiffness, increase in cIMT and HbA1c but also decreased  $V\dot{O}_2\text{max}$ . Reducing the number of night shifts and including periods of restitution in the shift plan seem to mitigate some of the CVD risk factors.

**Tedone AM, Mesmer-Magnus J, Lanz JJ, and Viswesvaran C. Owing workplace safety: investigating safety locus of control among nurses. *European Journal of Investigation in Health, Psychology and Education*. 2025; 15(10):216.**

<https://doi.org/10.3390/ejihpe15100216> [open access]

Abstract: Workplace accidents and injuries continue to be a challenge in high-risk industries such as healthcare, where safety is a daily critical concern. Although organizational factors such as safety climate have been well-established as predictors of safety-related outcomes, less is known about the role of individual differences in workplace safety. This research investigates safety locus of control, which captures an employee's tendency to believe that their safety-oriented behaviors actually play a role in preventing safety incidents. Individuals with a highly internal safety locus of control tend to

recognize the importance of their own and others' safety actions for promoting workplace safety and preventing safety-related incidents from occurring in their workplace, whereas employees with low internal safety locus of control tend to believe that adverse safety outcomes have less to do with employee behavior and are more the result of luck or chance (i.e., have a more external orientation). Across three studies (with a total of 792 participants), we developed a measure for assessing safety locus of control (Study 1), evaluated its construct validity (Study 2), and measured its incremental validity on workplace safety beyond other important constructs like safety climate (Study 3). Results suggest that safety locus of control helps to explain critical workplace safety outcomes (such as safety performance) beyond environmental factors such as safety climate alone and plays an influential role on well-established safety processes within the workplace. This research highlights the importance of considering individual differences alongside environmental factors in workplace safety models

**Wolf AB, Coelho-Lima F, dos Santos Keppler IL, de Souza Ferreira M, Dall'Asta C, Florez MER, et al. 'Be your own boss?': Explaining variation in worker response to the gig economy's ideology in the global north and south. *British Journal of Industrial Relations*. 2025; 63(4):631-645. <https://doi.org/10.1111/bjir.12887>**

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