

IWH Research Alert
November 2, 2018

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

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.

Adamecz-Volgyi A, Levay PZ, Bordos K, and Scharle A. Impact of a personalised active labour market programme for persons with disabilities. *Scandinavian Journal of Public Health*. 2018; 46(19_suppl):32-48.

<https://doi.org/10.1177/1403494817738421>

Abstract: AIMS: The paper estimates the impact of a supported employment programme implemented in Hungary. **METHODS:** This is a non-experimental evaluation using a matching identification strategy supported by rich data on individual characteristics, personal employment and unemployment history and the local labour market situation. We use a time-window approach to ensure that programme participants and matched controls entered unemployment at the same point in time, and thus faced very similar labour market conditions. **RESULTS:** We find that the programme had a positive effect of 16 percentage points on the probability of finding a job among men and 25 percentage points among women. The alternative outcome indicator of not re-entering the unemployment registry shows somewhat smaller effects in the case of women. **CONCLUSIONS:** In comparison to similarly costly programmes that do not facilitate employment in the primary labour market, rehabilitation services represent a viable alternative

Andersen JH, Malmros P, Ebbelhoej NE, Flachs EM, Bengtsen E, and Bonde JP. Systematic literature review on the effects of occupational safety and health (OSH) interventions at the workplace. *Scandinavian Journal of Work, Environment & Health*. 2018; [Epub ahead of print].

<https://doi.org/10.5271/sjweh.3775> [open access]

Abstract: Objectives The aim of this review was to assess the evidence that occupational safety and health (OSH) legislative and regulatory policy could

improve the working environment in terms of reduced levels of industrial injuries and fatalities, musculoskeletal disorders, worker complaints, sick leave and adverse occupational exposures. Methods A systematic literature review covering the years 1966-2017 (February) was undertaken to capture both published and gray literature studies of OSH work environment interventions with quantitative measures of intervention effects. Studies that met specified in- and exclusion criteria went through an assessment of methodological quality. Included studies were grouped into five thematic domains: (i) introduction of OHS legislation, (ii) inspection/enforcement activity, (iii) training, such as improving knowledge, (iv), campaigns, and (v) introduction of technical device, such as mechanical lifting aids. The evidence synthesis was based on meta-analysis and a modified Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach. Results The search for peer-reviewed literature identified 14 743 journal articles of which 45 fulfilled the inclusion criteria and were eligible for meta-analysis. We identified 5181 articles and reports in the gray literature, of which 16 were evaluated qualitatively. There was moderately strong evidence for improvement by OHS legislation and inspections with respect to injuries and compliance. Conclusions This review indicates that legislative and regulatory policy may reduce injuries and fatalities and improve compliance with OHS regulation. A major research gap was identified with respect to the effects of OSH regulation targeting psychological and musculoskeletal disorders

Bowen P, Govender R, and Edwards P. Validation of the Schieman and Young measurement scales for work contact, work-family conflict, working conditions, psychological distress and sleep problems in construction industry professionals. BMC Public Health. 2018; 18(1):1199.

<https://doi.org/10.1186/s12889-018-6100-7> [open access]

Abstract: BACKGROUND: This study examined the construct validity and internal consistency of modified versions of the job autonomy and control, job pressure, work contact, work-family conflict, psychological distress, and sleep problems scales developed by Schieman and Young (2013) among construction professionals through confirmatory factor analysis and tests of internal consistency. METHODS: Using a cross-sectional design, survey data were collected from 942 South African construction professionals, of which 630 responses were considered for analysis. Confirmatory factor analysis was used to examine construct validity. Cronbach's coefficient alpha was used to determine the internal consistency, and convergent validity was tested using correlation analysis. RESULTS: The final CFA indicated very good model fit to the data (χ^2/df ratio = 2.11, IFI = .95, CFI = .95, RMSEA = .06, and Hoelter (95%) = 176). The scales demonstrated satisfactory internal consistency: .82; .91; .83; .90; .90; and .73, respectively. Convergent validity was largely demonstrated with respect to direction of association, but not in relation to magnitude. A limitation of the validation study was the lack of available data for a more robust examination of reliability beyond internal consistency, such as test-retest. CONCLUSIONS: The six scales developed by Schieman and Young (2013) hold promise as measures

of work contact, work-family conflict, psychological distress, and sleep problems in relation to working conditions of construction professionals

Chapman MT, Lines RLJ, Crane M, Ducker KJ, Ntoumanis N, Peeling P, Parker SK, Quested E, Temby P, Thøgersen-Ntoumani C, and Gucciardi DF. Team resilience: a scoping review of conceptual and empirical work. *Work and Stress*. 2018; [Epub ahead of print].

<https://doi.org/10.1080/02678373.2018.1529064>

Demou E, MacLean A, Cheripelli LJ, Hunt K, and Gray CM. Group-based healthy lifestyle workplace interventions for shift workers: a systematic review. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(6):568-584.

<https://doi.org/10.5271/sjweh.3763> [open access]

Abstract: Objective Shift work is a risk factor for many chronic diseases and has been associated with unhealthy lifestyle behaviors. Workplaces have great potential for promoting and supporting behavior change. We conducted a systematic review of group-based lifestyle workplace interventions for shift workers to (i) identify adaptations and intervention components that accommodate shift working and (ii) assess their impact on weight, physical activity, sedentary behavior and healthy eating. **Methods** A systematic search was conducted in Scopus, Web of Knowledge, EBSCO and Ovid databases. Using pre-established criteria, independent pairs of researchers conducted the study selection, quality appraisal and data extraction. **Results** In total, 22 studies on group-based workplace interventions for shift workers were included. Many demonstrated organizational level adaptations, such as flexible delivery times and paying employees' time for their involvement. Delivery locations near the workplace and management support were other key features. Common intervention components included competitive group activities, individualized goal setting, self-monitoring and feedback, staff involvement in intervention delivery, and incentives. There was moderate evidence for effectiveness on weight and physical activity outcomes, but insufficient evidence for healthy eating outcomes. No interventions focusing on sedentary behavior among shift workers were found. **Conclusion** Current evidence demonstrates that group-based workplace interventions can be effective for supporting shift workers to lose weight and increase physical activity, while further research is needed to change healthy eating and sedentary behaviors. Our findings offer decision support on organizational-level adaptations and intervention components that are important to make interventions that promote healthy lifestyles more accessible to shift workers

Felicitas Elisabeth Goecke T and Kunze F. The contextual role of subjective age in the chronological age/absenteeism relationship in blue and white collar teams. *European Journal of Work and Organizational Psychology*. 2018; 27(4):520-534.

<https://doi.org/10.1080/1359432X.2018.1485651>

Juvanhol LL, Melo ECP, Chor D, Fonseca MJM, Rotenberg L, Bastos LS, Mill JG, and Griep RH. Association between demand-control model components and blood pressure in the ELSA-Brasil study: exploring heterogeneity using quantile regression analyses. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(6):601-612.

<https://doi.org/10.5271/sjweh.3755> [open access]

Abstract: Objectives This study aimed to investigate which components of the demand-control model (DCM) are associated with blood pressure (BP) and ascertain whether these associations vary over the BP distribution. Methods We evaluated the baseline data of 11 647 current workers enrolled in the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil) (2008-2010), a multicenter cohort study of 35-74-year-old civil servants. Job demands, skill discretion and decision authority were measured using the Brazilian version of the Demand-Control-Support Questionnaire. The associations between DCM components and systolic and diastolic BP (SBP and DBP, respectively) were examined by gamma regression, indicated for modelling skewed continuous variables, and quantile regression. Tests were conducted for interaction with gender and use of antihypertensives. Results In the adjusted gamma models, no association was observed between DCM components and BP in the total study population. Among non-users of antihypertensives, high decision authority was marginally associated with an increase of 0.59 mmHg (95% CI 0.00-1.18) in SBP. In the quantile models, this association was found to be significant from quantiles 35-60. Further significant but inconsistent positive associations were observed between decision authority and DBP among users of antihypertensives (quantiles 5 and 10) and between skill discretion and SBP in the total study population (quantile 5). The results did not differ by gender. Conclusions Decision authority associates positively with SBP, but only in the central portion of the SBP distribution and among non-users of antihypertensives. No consistent associations were observed for skill discretion or job demands

Klevanger NE, Fimland MS, Johnsen R, and Rise MB. Unfolding the values of work: therapists experience of addressing the return to work process in occupational rehabilitation based on Acceptance and Commitment Therapy. *BMC Health Services Research*. 2018; 18(1):303.

<https://doi.org/10.1186/s12913-018-3035-8> [open access]

Abstract: BACKGROUND: Facilitating return to work can be challenging due to the complexity of work disability. Few studies have examined rehabilitation programs based on Acceptance and Commitment Therapy that intend to support return to work, and none have investigated therapists' experience with providing such programs. The aim of this study was therefore to explore therapists' experience of addressing the return to work process in an inpatient occupational rehabilitation program based on Acceptance and Commitment Therapy. METHODS: This was a qualitative interview study supported by participant observation. Therapists were interviewed regarding their experiences with addressing return to work in an inpatient occupational rehabilitation program

based on Acceptance and Commitment Therapy. In addition, the rehabilitation program was investigated through participant observation. The interviews were analysed according to Interpretative Phenomenological Analysis and informed by an analysis of field notes from the participant observation. RESULTS: Acceptance and Commitment Therapy was experienced as a meaningful approach to facilitate return to work, as it allowed therapists to address all relevant aspects of the individual participant's life that might influence work participation. The therapists' twofold goal was to support participants in building both a meaningful life and sustainable work participation. To do so, they attempted to instil long-term and interrelated processes concerning ownership, causes of sick leave, relation to expectations, the values of work, and the scope of agency. CONCLUSION: Unfolding values connected to work participation might reconcile the tension between work and family life by integrating work with other areas of life. Providing work participation with personal meaning also seems especially commensurable with a context where economy presents a poor incentive for return to work. Therapists should, however, be attentive to the need to secure the prominence of return to work by relating participants' chosen themes explicitly to their return to work process. Therapists should also be aware of the dilemma that may arise when they attempt to refrain from providing advice while simultaneously encouraging actions they consider appropriate to facilitate sustainable work participation. In addition, having an individual-oriented approach to occupational rehabilitation may obscure the extent to which return to work is a multi-stakeholder process

Lee JW, Lim YH, Won YH, and Kim DH. Effect of gel seat cushion on chronic low back pain in occupational drivers: a double-blind randomized controlled trial. *Medicine*. 2018; 97(40):e12598.

<https://doi.org/10.1097/MD.0000000000012598> [open access]

Abstract: BACKGROUND: Low back pain (LBP) is an exceedingly common medical condition that results in significant medical and social burden. Sitting for a long period is a common aggravating factor for LBP. Although seat cushion is known to promote comfort, relieve pressure, and correct posture, its effect on chronic LBP has not yet been investigated. This study aimed to evaluate the clinical effect of gel seat cushion on chronic LBP in occupational drivers. METHODS: Occupational drivers with chronic LBP lasting for >6 months were recruited. Subjects were double-blinded, randomly assigned to 2 groups (gel and foam cushion groups), and instructed to use the provided cushions while driving. Pain threshold and tissue hardness were measured at tender points using a digital algometer. Numeric pain intensity scale (NPIS), Roland-Morris Disability Questionnaire (RMDQ), and Oswestry Disability Index (ODI) were used to analyze the primary endpoint, whereas the Beck Depression Inventory and Short Form-6D were used for the secondary endpoint. RESULTS: Of 80 enrolled subjects, 75 (gel cushion group, 40; foam cushion group, 35) were included for analysis. Both groups showed significant improvement in NPIS and ODI scores following cushion use. Results for Beck Depression Inventory and Short Form-6D

scores indicated that gel cushion use was significantly helpful. Change in NPIS score was significantly greater in the gel cushion group than in the foam cushion group. CONCLUSION: Gel cushion use may be effective in relieving LBP in occupational drivers seated for a long period compared with foam cushion use

Lesener T, Gusy B, and Wolter C. The job demands-resources model: a meta-analytic review of longitudinal studies. *Work and Stress*. 2018; [Epub ahead of print].

<https://doi.org/10.1080/02678373.2018.1529065>

Meneton P, Hoertel N, Wiernik E, Lemogne C, Ribet C, Bonenfant S, Menard J, Goldberg M, and Zins M. Work environment mediates a large part of social inequalities in the incidence of several common cardiovascular risk factors: findings from the Gazel cohort. *Social Science & Medicine*. 2018; 216:59-66.

<https://doi.org/10.1016/j.socscimed.2018.09.042>

Abstract: Whether working conditions contribute to social inequalities in cardiovascular disease is still a matter of debate. The present study investigates the extent to which the social gradient in the incidence of common behavioral and clinical risk factors is explained by work environment. In a well-characterized cohort of 20,625 middle-aged French civil servants followed for 25 years, social status and work environment were globally measured at baseline by combining respectively four socioeconomic indicators (education, wealth, income, occupational grade) and 25 physical, biomechanical, organizational and psychosocial occupational exposures. These 2 global measures are strongly correlated with each other ($p < 0.0001$), lower is social status, worse is work environment. In proportional hazard regression models adjusted for sex, age and parental cardiovascular disease, low social status increases the incidence of 9 risk factors with hazard ratios ranging from 1.12 to 1.72 while bad work environment increases the incidence of 7 risk factors with hazard ratios ranging from 1.15 to 2.02. Structural equation models to discrete-time survival analysis with moderated mediation show that bad work environment explains nearly 50% of the global effect of low social status on the incidence of the 9 risk factors ($p < 0.01$). This mediating effect varies substantially from one risk factor to another, explaining 32-39% of social gradients in the risk of physical inactivity, obesity, diabetes, dyslipidemia and 64-90% of gradients in the risk of hypertension, sleep complaints and depression (all $p < 0.01$). No significant mediating effect of work environment is found for social gradients in the incidence of non-moderate alcohol consumption and smoking. These results suggest that work environment mediates a large part of the social gradient in the incidence of several common cardiovascular risk factors, emphasizing the necessity to include working conditions in policies aimed to reduce social inequalities in health

Micheli GJL, Cagno E, and Calabrese A. The transition from occupational safety and health (OSH) interventions to OSH outcomes: an empirical

analysis of mechanisms and contextual factors within small and medium-sized enterprises. *International Journal of Environmental Research and Public Health*. 2018; 15(8):E1621.

<https://doi.org/10.3390/ijerph15081621> [open access]

Abstract: Many Occupational Safety and Health (OSH) interventions have proven to be effective only under controlled conditions; during the implementation in practice, the interventions may not work as expected, especially in small and medium-sized enterprises (SMEs). SMEs are affected by different contextual factors than larger enterprises and these factors can influence the outcome of the OSH programs. Three different phases of an OSH intervention (design, implementation, and control) have been considered. The aim of this research is to understand what are the mechanisms by which an OSH intervention works or does not work as expected, together with barriers and drivers, and the related contextual factors. The research was designed following multiple case study research, which enables an in depth understanding of the intervention process and the identification of the most relevant factors for OSH. Data were collected through interviews with owner-managers or OSH managers of SMEs. Finally, the data were analysed through an analytical research framework that enabled the identification of the main mechanisms and contextual factors for the interventions that had an expected outcome and for those which had an unexpected outcome

Newington L, Stevens M, Warwick D, Adams J, and Walker-Bone K. Sickness absence after carpal tunnel release: a systematic review of the literature. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(6):557-567.

<https://doi.org/10.5271/sjweh.3762> [open access]

Abstract: Objectives The aim of this systematic review was to provide an overview of time to return to work (RTW) after carpal tunnel release (CTR), including return to different occupations and working patterns. Methods A systematic search from inception to 2016 was conducted using nine electronic databases, trial registries and grey literature repositories. Randomized controlled trials and observational studies reporting RTW times after CTR were included. Study risk of bias was assessed using Cochrane risk of bias assessment tools. Time to RTW was summarized using median and range. Results A total of 56 relevant studies were identified: 18 randomized controlled trials and 38 observational studies. Only 4 studies were rated as having a low risk of bias. Reported RTW times ranged from 4-168 days. Few studies reported occupational information. Among 6 studies, median time to return to non-manual work was 21 days (range 7-41), compared with 39 days for manual work (range 18-101). Median time to return to modified or full duties was 23 days (ranges 12-50 and 17-64, respectively), as reported by 3 studies. There was no common method of defining, collecting or reporting RTW data. Conclusions This review highlights wide variation in reported RTW times after CTR. Whilst occupational factors may play a role, these were poorly reported, and there is currently limited evidence to inform individual patients of their expected duration of work absence

after CTR. A standardized definition of RTW is needed, as well as an agreed method of collecting and reporting related data

Verbeek J, Ruotsalainen J, Laitinen J, Korkiakangas E, Lusa S, Manttari S, and Oksanen T. Interventions to enhance recovery in healthy workers: a scoping review. Occupational Medicine. 2018; [Epub ahead of print].

<https://doi.org/10.1093/occmed/kqy141>

Abstract: Background: Faster recovery from work may help to prevent work-related ill health. Aims: To provide a preliminary assessment of the range and nature of interventions that aim to improve recovery from cognitive and physical work. Methods: A scoping review to examine the range and nature of the evidence, to identify gaps in the evidence base and to provide input for systematic reviews. We searched for workplace intervention studies that aimed at enhancing recovery. We used an iterative method common in qualitative research to obtain an overview of study elements, including intervention content, design, theory, measurements, effects and cost-effectiveness. Results: We found 28 studies evaluating seven types of interventions mostly using a randomized controlled study design. For person-directed interventions, we found relaxation techniques, training of recovery experiences, promotion of physical activity and stress management. For work-directed interventions, there were participatory changes, work-break schedules and task variation. Most interventions were based on the conservation of resources and affect-regulation theories, none were based on the effort-recovery theory. The need for recovery (NfR) and the recovery experiences questionnaires (REQ) were used most often. Study authors reported a beneficial effect of the intervention in 14 of 26 published studies. None of the studies that used the NfR scale found a beneficial effect, whereas studies that used the REQ showed beneficial effects. Three studies indicated that interventions were not cost-effective. Conclusions: Feasible and possibly effective interventions are available for improving recovery from cognitive and physical workload. Systematic reviews are needed to determine their effectiveness

de Vries H, Fishta A, Weikert B, Rodriguez Sanchez A, and Wegewitz U. Determinants of sickness absence and return to work among employees with common mental disorders: a scoping review. Journal of Occupational Rehabilitation. 2018; 28(3):393-417.

<https://doi.org/10.1007/s10926-017-9730-1> [open access]

Abstract: Purpose To present an overview of the existing evidence on prognostic factors of (recurrent) sickness absence (SA) and return to work (RTW) among workers with a common mental disorder (CMD). This scoping review provides information about determinants for SA and RTW, which could be used to develop better interventions aimed at the prevention of SA and promotion of RTW among workers with a CMD. Methods Relevant articles were identified in PubMed, Embase, PsycINFO, PSYINDEX, and SINGLE up to October 2016. In order to be included, studies should provide insight into prognostic factors of SA or RTW of

workers with a CMD. We classified all factors according to the domains of the International Classification of Functioning, Disability and Health. Results Our searches identified 2447 possible relevant articles, of which 71 were included for data extraction. There is consistent evidence in ≥ 3 studies that previous episodes of CMD, higher symptom severity, previous absenteeism, co-morbidity, high job demands, low job control, high job strain, female gender, lower educational level, smoking behavior, and low perceived general health are predictors of SA in people with CMDs. Earlier RTW is consistently predicted by lower symptom severity, having no previous absenteeism, younger age, and positive expectations concerning sick-leave duration or RTW. Conclusions The amount of research on determinants for SA and RTW in workers with CMD has increased dramatically in recent years, although most studies are from the Netherlands and Scandinavia. There are some research gaps identified in this scoping review that need further attention in primary and secondary studies. Based on the summary of the evidence, we provide guidance for policy, practice and research

de Wind A, van der Noordt M, Deeg DJH, and Boot CRL. Working life expectancy in good and poor self-perceived health among Dutch workers aged 55-65 years with a chronic disease over the period 1992-2016. Occupational and Environmental Medicine. 2018; 75(11):792-797. <https://doi.org/10.1136/oemed-2018-105243>

Abstract: OBJECTIVES: Several governments have taken measures to encourage prolonged working. It is therefore likely that older adults with a chronic disease are required to work longer in poor self-perceived health (SPH) than before. This study examines to what extent working life expectancy (WLE) in good and poor SPH changed between 1992 and 2016 in workers with a chronic disease from age 55 years onwards. METHODS: Three cohorts (1992, 2002 and 2012) of workers with a chronic disease aged 55-65 years were selected from the Longitudinal Aging Study Amsterdam with a 3-year follow-up each (n=705). A three-state survival model was estimated, modelling transitions between states 'working with good SPH', 'working with poor SPH' and 'exit from work'. WLEs were estimated using Multistate Modelling and Estimating Life Expectancies using Continuous Time in R. RESULTS: Of the workers with a chronic disease, total WLEs at age 55 years were 5.2, 5.7 and 6.8 years in cohorts 1992, 2002 and 2012, respectively. Workers initially having poor SPH, had total WLE of 4.7 years of which 2.4 years in poor SPH in cohort 1992. These workers had total WLE of 5.2 years of which 3.3 years in poor SPH in cohort 2002, and total WLE of 6.5 years of which 3.6 years in poor SPH in cohort 2012. CONCLUSIONS: Workers with a chronic disease extended their working lives by approximately 18 months from 1992 to 2016. In the first decade, unhealthy WLE increased, whereas in the second decade, healthy WLE increased, among both workers in general and workers initially having poor SPH