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**October 26, 2018**

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**\*Mustard C, Tompa E, Landsman V, and Lay M. What do employers spend to protect the health of workers? *Scandinavian Journal of Work, Environment & Health*. 2018; [epub ahead of print].**

<https://doi.org/10.5271/sjweh.3778>

**Flovik L, Knardahl S, and Christensen JO. Organizational change and employee mental health: a prospective multilevel study of the associations between organizational changes and clinically relevant mental distress. *Scandinavian Journal of Work, Environment & Health*. 2018; [epub ahead of print].**

<https://doi.org/10.5271/sjweh.3777>

**Abstract:** Objective The goal of this paper was to elucidate the relationship between exposure to separate, multiple or repeated organizational change at both individual- and work-unit level and subsequent clinically relevant mental distress amongst employees two years after change had taken place. Methods A full panel, prospective design was utilized. Data were collected at two time-points two years apart, by self-administered, online questionnaires. Organizational change was measured by six items pertaining to separate types of change. Mental distress was measured using HSCL-10, with cut-off set to  $\geq 1.85$  to identify clinically relevant distress. Baseline sample consisted of 7985 respondents, of whom 5297 participated at follow-up. A multilevel analytic strategy was chosen as data were nested within work-units. Effects associated with exposure to organizational change at both individual- and work-unit level were estimated. Results Separate change: At the individual level, company reorganization [odds ratio (OR) 1.29, 95% confidence interval (CI) 1.011.65], downsizing (1.51, 95% CI 1.122.03) and layoffs (OR 1.46, 95% CI 1.012.12)

were prospectively associated with mental distress. At work-unit level, company reorganization (OR 1.46, 95% CI 1.04-2.04) was associated with mental distress, but the statistically significant association diminished when adjusting for the work factors job control, job demands and support. Multiple changes: At the individual level, exposure to multiple organizational changes at baseline were associated with mental distress at follow-up (OR 1.75, 95% CI 1.282.38). Repeated change: At the individual level, exposure to repeated organizational change was associated with mental distress at follow-up (OR 1.84, 95% CI 1.292.63).  
Conclusions Exposure to organizational changes at the individual level indicated an elevated risk of subsequent clinically relevant mental distress following both separate, multiple and repeated organizational changes. These associations were also present at work-unit level, but diminished when adjusting for certain work factors, indicating a possible mediating effect

**Genin PM, Dessenne P, Finaud J, Pereira B, Dutheil F, Thivel D, and Duclos M. Effect of work-related sedentary time on overall health profile in active vs. inactive office workers. *Frontiers in Public Health*. 2018; 6:279.**

<https://doi.org/10.3389/fpubh.2018.00279> [open access]

Abstract: Objective: While public health strategies are developed to fight sedentary behaviors and promote physical activity, some professional activities, and especially tertiary ones, have been pointed out for their highly sedentary nature. Although workplace physical activity programs are increasingly proposed by companies to their employees in order to increase their physical activity levels, sitting and screen time remain extremely high. The main aim of this work was to compare health indicators between active and inactive tertiary employees with similar high levels of sedentariness. Secondly, we questioned the effects of a 5-month workplace physical activity program on overall health indicators among initially active and inactive tertiary employees. Methods: Anthropometric measurements, body composition (bio-impedance), physical fitness (cardiorespiratory and musculoskeletal fitness) and health-related quality of life and perception of health status (self-reported questionnaires) were assessed among 193 active and inactive tertiary employees before (T0) and after a 5-month workplace physical activity intervention (T1), composed of 2 physical sessions per week. Results: Significant improvements were found in performance of push-ups ( $p < 0.001$ ), back muscle strength ( $p < 0.001$ ) fat mass ( $p < 0.01$ ) and waist circumference ( $p < 0.05$ ) in active compared with inactive employees both at baseline and at the end of the program. Health perception ( $p < 0.001$ ) was significantly different between groups at T0 but not at T1. However, no significant difference was observed for fat-free mass, BMI, workplace well-being and lower and upper limbs muscle strength. The variations between T0 and T1 demonstrate that, while all the studied parameters progressed positively during the 5-month program, health perception ( $p < 0.001$ ), back muscle strength ( $p < 0.05$ ) and BMI (tendency) showed a significantly higher progression in the inactive compared with the active group. Conclusion: Health indicators might not be improved among active tertiary employees compared with inactive ones,

which might be due to the high level of sedentariness characterizing their occupational task. Structured on-site physical activity programs can improve health in both initially active and inactive employees

**Gomes T, Khuu W, Martins D, Tadrous M, Mamdani MM, Paterson JM, and Juurlink DN. Contributions of prescribed and non-prescribed opioids to opioid related deaths: population based cohort study in Ontario, Canada. British Medical Journal. 2018; 362:k3207.**

<https://doi.org/10.1136/bmj.k3207> [open access]

**Abstract:** OBJECTIVE: To describe the contributions of prescribed and non-prescribed opioids to opioid related deaths. DESIGN: Population based cohort study. SETTING: Ontario, Canada, from 1 January 2013 to 31 December 2016. PARTICIPANTS: All Ontarians who died of an opioid related cause. EXPOSURE: Active opioid prescriptions, defined as those with a duration overlapping the date of death, and recent opioid prescriptions, defined as those dispensed in the 30 and 180 days preceding death. Postmortem toxicology results from the Drug and Drug/Alcohol Related Death database were used to characterise deaths on the basis of presence of prescribed and non-prescribed (that is, diverted or illicit) opioids, overall and stratified by year and age. RESULTS: 2833 opioid related deaths occurred. An active opioid prescription on the date of death was relatively common but declined slightly throughout the study period (38.2% (241/631) in 2013 and 32.5% (278/855) in 2016; P for trend=0.03). Older people and women were relatively more likely to have an active opioid prescription at time of death. In 2016, 46% (169/364) of people aged 45-64 had an active opioid prescription compared with only 12% (8/69) among those aged 24 or younger (P for trend<0.001). Similarly, 46% (124/272) of women had an active opioid prescription at time of death compared with 26.4% (154/583) of men (P<0.001). Among people with active opioid prescriptions at time of death, 37.8% (375/993) also had evidence of a non-prescribed opioid on postmortem toxicology. By 2016, the non-prescribed opioid most commonly identified after death was fentanyl (41%; 47 of 115 cases). Among people without an active opioid prescription at time of death, fentanyl was detected in 20% (78/390) of deaths in 2013, increasing to 47.5% (274/577) by 2016 (P<0.001). CONCLUSIONS: Prescribed, diverted, and illicit opioids all play an important role in opioid related deaths. Although more than half of all opioid related deaths still involved prescription drugs (either dispensed or diverted) in 2016, the increased rate of deaths involving fentanyl between 2015 and 2016 is concerning and suggests the need for a multifactorial approach to this problem that considers both the prescribed and illicit opioid environments

**Hara KW, Bjorngaard JH, Jacobsen HB, Borchgrevink PC, Johnsen R, Stiles TC, Brage S, and Woodhouse A. Biopsychosocial predictors and trajectories of work participation after transdiagnostic occupational rehabilitation of participants with mental and somatic disorders: a cohort study. BMC Public Health. 2018; 18(1):1014.**

<https://doi.org/10.1186/s12889-018-5803-0> [open access]

**Abstract:** BACKGROUND: Group-based transdiagnostic occupational rehabilitation programs including participants with mental and somatic disorders have emerged in clinical practice. Knowledge is sparse on subsequent participation in competitive work. This study aimed to investigate trajectories for (re)entry to work for predefined subgroups in a diagnostically heterogeneous sample of sick-listed participants after completing occupational rehabilitation. METHODS: A cohort of 212 participants aged 18-69 on long-term sick leave (> 8 weeks) with chronic pain, chronic fatigue and/or common mental disorders was followed for one year after completing a 3(1/2)-week rehabilitation intervention based on Acceptance and Commitment Therapy. Self-reported, clinical and registry data were used to study the associations between predefined biopsychosocial predictors and trajectories for (re)entry to competitive work (>= 1 day per week on average over 8 weeks). Generalized estimating equations analysis was used to investigate trajectories. RESULTS: For all biopsychosocial subgroups (re)entry to work increased over time. Baseline employment, partial sick leave and higher expectation of return to work (RTW) predicted higher probability of having (re)entered work at any given time after discharge. The odds of increasing reentry over time (statistical interaction with time) was weaker for the group receiving the benefit work assessment allowance compared with those receiving sickness benefit (OR = 0.92, p = 0.048) or for those on partial sick leave compared with full sick leave (OR 0.77, p < 0.001), but higher for those who at baseline had reported having a poor economy versus not (OR 1.16, p = 0.010) or reduced emotional functioning compared with not (OR 1.11, p = 0.012). Health factors did not differentiate substantially between trajectories. CONCLUSIONS: Work participation after completing a transdiagnostic occupational rehabilitation intervention was investigated. Individual and system factors related to work differentiated trajectories for (re)entry to work, while individual health factors did not. Having a mental disorder did not indicate a worse prognosis for (re)entry to work following the intervention. Future trials within occupational rehabilitation are recommended to pivot their focus to work-related factors, and to lesser extent target diagnostic group

**Heinz AJ, Meffert BN, Halvorson MA, Blonigen D, Timko C, and Cronkite R. Employment characteristics, work environment, and the course of depression over 23 years: does employment help foster resilience? Depression and Anxiety. 2018; 35(9):861-867.**

<https://doi.org/10.1002/da.22782> [open access]

**Abstract:** BACKGROUND: Depression is the leading cause of disability and represents a significant challenge to stable employment and professional success. Importantly, employment may also operate as a protective factor against more chronic courses of depression as it can function as a form of behavioral activation and scaffold recovery by facilitating community integration. The current study examined work-related characteristics as protective or risk factors for subsequent long-term depression trajectories. METHODS: Relations

between employment characteristics and lifetime course of depression were examined among 424 adults in the community who entered treatment for depression. The sample was followed for 23 years with assessments at 1, 4, 10, and 23 years post baseline. At baseline, participants were asked about employment history and status along with work-related events and aspects of their work environments. Depression was measured at each assessment, and three different life course trajectories of depression were identified. **RESULTS:** Employment at baseline was associated with lower levels of depression at baseline and less severe life courses of depression. Among employed participants, higher occupational prestige, a more supportive work environment (greater involvement, cohesion, and perceived support), and lower work stress (less pressure and more control, role clarity, and autonomy) may protect against more severe, intractable depression over time and may have bolstered functioning. **CONCLUSIONS:** Findings have potential to be harnessed for clinical translation to better inform vocational rehabilitation counseling and human resources programs. Specifically, clinician assessment of work setting can guide patient decision making about how to reduce vulnerability to depression and foster resilience via employment

**Juvani A, Ia Oksanen T, Virtanen M, Salo P, Pentti J, Kivimaki M, and Vahtera J. Clustering of job strain, effort-reward imbalance, and organizational injustice and the risk of work disability: a cohort study. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(5):485-495. <https://doi.org/10.5271/sjweh.3736>**

**Abstract:** Objectives The aim of this study was to examine the association between co-occurring work stressors and risk of disability pension. Methods The work stressors job strain, effort-reward imbalance (ERI), and organizational injustice were measured by a survey in 2008 of 41 862 employees linked to national records of all-cause and cause-specific disability pensions until 2011. Co-occurring work stressors were examined as risk factors of work disability using Cox regression marginal models. Results Work stressors were clustered: 50.8% had no work stressors [observed-to-expected ratio (O/E)=1.2], 27.4% were exposed to one stressor (O/E=0.61-0.81), 17.7% to two stressors (O/E=0.91-1.73) and 6.4% to all three stressors (O/E=2.59). During a mean follow-up of 3.1 years, 976 disability pensions were granted. Compared to employees with no work stressors, those with (i) co-occurring strain and ERI or (ii) strain, ERI and injustice had a 1.9-2.1-fold [95% confidence interval (CI) 1.7-2.6] increased risk of disability retirement. The corresponding hazard ratios were 1.2 and 1.5 (95% CI 1.0-1.8) for strain and ERI alone. Risk of disability pension from depressive disorders was 4.4-4.7-fold (95% CI 2.4-8.0) for combinations of strain+ERI and strain+ERI+injustice, and 1.9-2.5-fold (95% CI 1.1-4.0) for strain and ERI alone. For musculoskeletal disorders, disability risk was 1.6-1.9-fold (95% CI 1.3-2.3) for strain+ERI and ERI+injustice combinations, and 1.3-fold (95% CI 1.0-1.7) for strain alone. Supplementary analyses with work stressors determined using work-unit aggregates supported these findings. Conclusions

Work stressors tend to cluster in the same individuals. The highest risk of disability pension was observed among those with work stressor combinations strain+ERI or strain+ERI+injustice, rather than for those with single stressors

**Keown GA and Tuchin PA. Workplace factors associated with neck pain experienced by computer users: a systematic review. Journal of Manipulative and Physiological Therapy. 2018; 41(6):508-529.**

<https://doi.org/10.1016/j.jmpt.2018.01.005>

Abstract: INTRODUCTION: The purpose of this systematic review was to examine literature on workplace factors associated with neck pain or symptoms in computer users performing clerical functions. METHODS: A systematic search of the Cochrane, Medline, CINAHL, and EMBASE databases was conducted for observational and experimental studies published since 2000. This review applied the case definition of The Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. RESULTS: Seven hundred twenty-nine studies were identified. Seven hundred and two studies were excluded. Twenty-seven studies fulfilled inclusion criteria and were assessed for risk of bias. Cross-sectional studies were commonly at risk from nonresponse bias and lack of adequate case definitions. Experimental studies were mostly at risk of bias due to confounding and participant recruitment methods. CONCLUSIONS: Neck pain was not significantly associated with high job demands, low skill discretion, low decision authority, or low peer support. However, when these variables were combined with increased duration of computing tasks, or ergonomic demands, they reached significance. Supervisor support was found to be the only significant buffer capable of preventing these variables reaching significance in female office workers

**Lin K, Lee W, Azari R, and Migliaccio GC. Training of low-literacy and low-English-proficiency Hispanic workers on construction fall fatality. Journal of Management in Engineering. 2018; 34(2):05017009.**

[https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000573](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000573)

**Nogues S and Finucan J. Economic evaluations of workplace mental health interventions: a critical review. Canadian Journal of Administrative Sciences. 2018; [epub ahead of print].**

<https://doi.org/10.1002/cjas.1502>

**Pinto AD, Hassen N, and Craig-Neil A. Employment interventions in health settings: a systematic review and synthesis. Annals of Family Medicine. 2018; 16(5):447-460.**

<https://doi.org/10.1370/afm.2286> [open access]

Abstract: PURPOSE: Employment is a key social determinant of health. People who are unemployed typically have worse health than those employed. Illness and disability can result in unemployment and be a barrier to regaining employment. We combined a systematic review and knowledge synthesis to identify both studies of employment interventions in health care settings and

common characteristics of successful interventions. **METHODS:** We searched the peer-reviewed literature (1995-2017), and titles and abstracts were screened for inclusion and exclusion criteria by 2 independent reviewers. We extracted data on the study setting, participants, intervention, methods, and findings. We also conducted a narrative synthesis and iteratively developed a conceptual model to inform future primary care interventions. **RESULTS:** Of 6,729 unique citations, 88 articles met our criteria. Most articles (89%) focused on people with mental illness. The majority of articles (74%) tested interventions that succeeded in helping participants gain employment. We identified 5 key features of successful interventions: (1) a multidisciplinary team that communicates regularly and collaborates, (2) a comprehensive package of services, (3) one-on-one and tailored components, (4) a holistic view of health and social needs, and (5) prospective engagement with employers. **CONCLUSIONS:** Our findings can inform new interventions that focus on employment as a social determinant of health. Although hiring a dedicated employment specialist may not be feasible for most primary care organizations, pathways using existing resources with links to external agencies can be created. As precarious work becomes more common, helping patients engage in safe and productive employment could improve health, access to health care, and well-being

**Sinyai C, MacArthur B, and Roccotagliata T. Evaluating the readability and suitability of construction occupational safety and health materials designed for workers. American Journal of Industrial Medicine. 2018; 61(10):842-848.**

<https://doi.org/10.1002/ajim.22901>

**Abstract:** **INTRODUCTION:** Printed materials for training and hazard communication are an essential part of occupational safety and health programs, but must be understood by their intended audience. **METHODS:** Researchers collected 103 safety training handouts, brochures, and Safety Data Sheets and scored them for readability and suitability using four standard health communication instruments: the SMOG test, the Flesch-Kincaid Reading Ease Assessment, the SAM (Suitability Assessment of Materials), and CCI (the CDC Clear Communication Index). **RESULTS:** Some of the materials used unfamiliar and technical terms. The SAM and CCI checklists revealed several elements of design and layout known to facilitate communication and comprehension, but missing from most of the materials scored. **CONCLUSION:** Occupational safety and health professionals preparing curricula and handouts for distribution to workers should incorporate some form of readability and suitability assessment to help ensure their written materials are clear and comprehensible to all segments of their audience

**Sveinsdottir V, Eriksen HR, Baste V, Hetland J, and Reme SE. Young adults at risk of early work disability: who are they? BMC Public Health. 2018; 18(1):1176.**

<https://doi.org/10.1186/s12889-018-6095-0> [open access]

**Abstract:** **BACKGROUND:** Young adults that are not in education, training or employment represent a problem across European countries. While some are cases of temporary transitions or short-term inactivity, others represent a more vulnerable group at risk of early work disability. Early exclusion from the labor market represents long lives exposed to detrimental effects of unemployment on health and well-being, and constitutes an economic burden for society. There is need for more knowledge about young adults who are at risk of early work disability but have not yet reached the point of more permanent exclusion. This study aims to investigate social and health-related problems in a Norwegian sample of young adults at risk of early work disability, and their self-perceived causes of illness. **METHODS:** Baseline data from participants in the SEED-trial (N = 96), a randomized controlled trial comparing individual placement and support to traditional vocational rehabilitation in young adults at risk of early work disability, were analyzed. Background, health behaviors, adverse social experiences, disability level, physical and mental health, social support, coping, and self-perceived causal attributions of illness were measured. Gender differences were analyzed using chi-square and t-tests. **RESULTS:** Mean age was 24, and 68% were men. One third reported reading and writing difficulties, and 40% had less than high-school education. The majority had experienced bullying (66%) or violence (39%), and 53% reported hazardous alcohol use. Psychological distress was the most prevalent health problem (52%), and women generally had more physical and mental health problems than men. Self-perceived causal attributions of illness were mainly related to relational problems, followed by health behaviors, heredity/genetics, and external environmental factors. **CONCLUSIONS:** The study provides a deeper insight into a vulnerable group with substantial challenges related to adverse social experiences, psychological distress, and alcohol use, who emphasized relational problems as the main causal factor for their illness. Findings suggest a need for broader focus on psychological and social factors in vocational rehabilitation efforts targeting young adults at risk of early work disability. Furthermore, gender-specific approaches may be warranted and should be followed up in future studies. **TRIAL REGISTRATION:** Clinicaltrials.gov: NCT02375074 . Retrospectively registered December 3rd 2014

**Viikari-Juntura E, Leinonen T, Virta LJ, Hiljanen I, Husgafvel-Pursiainen K, Autti-Ramo I, Rissanen P, Burdorf A, and Solovieva S. Early part-time sick leave results in considerable savings in social security costs at national level: an analysis based on a quasi-experiment in Finland. Scandinavian Journal of Work, Environment & Health. 2018; [epub ahead of print].**

<https://doi.org/10.5271/sjweh.3780>

**Abstract:** **Objectives** We analyzed social security costs based on an earlier quasi-experiment that compared work participation between partial sickness beneficiaries and a matched group of full sickness beneficiaries. **Methods** Utilizing a population-based 70% representative sample, 1878 persons with part-time sick leave (intervention group) due to musculoskeletal diseases or mental



disorders at an early stage of work disability and their propensity-score-matched controls with full-time sick leave were followed for two years. The outcome was the difference (absolute and relative) in social security costs between the intervention and control groups during follow-up. Costs of sickness absence, vocational rehabilitation, unemployment, and retirement days were calculated from national administrative registers. Results A cost reduction of euro2395 per person per year [95% confidence interval (CI) -

**Visram S, Hunter DJ, and Kuchenmuller T. Capacity for evidence-informed policymaking across Europe: development and piloting of a multistakeholder survey. Public Health. 2018; 163:54-60.**

<https://doi.org/10.1016/j.puhe.2018.06.007>

Abstract: OBJECTIVES: Evidence-informed policymaking (EIP) is increasingly viewed as a complex endeavour that requires integration of research evidence with available resources and the preferences of those affected by the policy. The first technical expert meeting to enhance EIP in the World Health Organization (WHO) European Region identified the scope to develop and conduct a survey to gather insights into the generation, translation and application of research evidence across the region. This article describes the process of developing and piloting a multistakeholder survey (promoted and technically supported by WHO/Europe) on the topic of capacity for EIP. STUDY DESIGN: Rapid review and pilot cross-sectional survey. METHODS: A survey instrument was developed based on findings from the published literature and refined with input from EIP experts/champions. The online survey was then piloted using various recruitment strategies designed to maximise its reach among the key target groups (senior researchers, knowledge brokers and members of civil society). RESULTS: The rapid review revealed a clear gap in the evidence base in relation to broader surveys of capacity for EIP, as opposed to evidence-based practice at an individual level. Thirteen responses to the pilot survey were received from individuals in 10 European countries. Reported barriers to EIP included a lack of understanding among policymakers and a lack of interaction with researchers. There were examples of efforts to enhance capacity for EIP, both at region or country level and through membership of international networks and collaborations. However, few examples were given of the application and impact of research evidence on the policymaking process. CONCLUSION: This research has demonstrated the feasibility of developing and piloting a multicountry, multistakeholder survey to generate better understanding of evidence use in health policymaking. Next steps include incorporating the lessons learned into a revised version of the survey to be implemented with all 53 WHO/Europe Member States

**Wynne-Jones G, Chen Y, Croft P, Peat G, Wilkie R, Jordan K, and Petersson IF. Secular trends in work disability and its relationship to musculoskeletal pain and mental health: a time-trend analysis using five cross-sectional surveys (2002-2010) in the general population. Occupational and**

**Environmental Medicine. 2018; [epub ahead of print].**

<https://doi.org/10.1136/oemed-2018-105171>

Abstract: OBJECTIVES: International evidence suggests that rates of inability to work because of illness can change over time. We hypothesised that one reason for this is that the link between inability to work and common illnesses, such as musculoskeletal pain and mental illness, may also change over time. We have investigated this in a study based in one UK district. METHODS: Five population surveys (spanning 2002-2010) of working-age people aged >50 years and <=65 years were used. Work disability was defined as a single self-reported item 'not working due to ill-health'. Presence of moderate-severe depressive symptoms was identified from the Mental Component Score of the Short Form-12, and pain from a full-body manikin. Data were analysed with multivariable logistic regression. RESULTS: The proportion of people reporting work disability across the surveys declined, from 17.0% in 2002 to 12.1% in 2010. Those reporting work disability, one-third reported regional pain, one-half widespread pain (53%) and two-thirds moderate-severe depressive symptoms (68%). Both factors were independently associated with work disability; their co-occurrence was associated with an almost 20-fold increase in the odds of reporting work disability compared with those with neither condition. CONCLUSIONS: The association of work disability with musculoskeletal pain was stable over time; depressive symptoms became more prominent in persons reporting work disability, but overall prevalence of work disability declined. The frequency and impact of both musculoskeletal pain and depression highlight the need to move beyond symptom-directed approaches towards a more comprehensive model of health and vocational advice for people unable to work because of illness

\*IWH authored publication.