

### Early exit for obese workers

This systematic review and meta-analysis (28 included studies) examined the influence of obesity or lack of physical activity on exiting paid employment through disability pension, unemployment or early retirement. Both obesity (body mass index (BMI) at least 30 kg/m<sup>2</sup>) and (to a lesser extent) being overweight (BMI at least 25 kg/m<sup>2</sup> but under 30 kg/m<sup>2</sup>) significantly increased the risk of exiting employment on a disability pension (relative risks 1.53 and 1.16, respectively). However, there were no statistically significant associations with unemployment or early retirement. Lack of physical activity during leisure time was a significant risk factor for exiting work on a disability pension or being made unemployed, but not for early retirement. The meta-analysis was restricted to disability pension outcomes owing to the limited number of studies on unemployment and early retirement.

- *Scandinavian Journal of Work, Environment and Health* 2013; 39(3): 233–240.
- [http://www.sjweh.fi/show\\_abstract.php?abstract\\_id=3354](http://www.sjweh.fi/show_abstract.php?abstract_id=3354)

### Psychosocial factors and weight gain

Given that most working-age people spend up to a third of their time at work, it is not unreasonable to suggest that occupational factors could contribute to rising levels of obesity in the population. This systematic review of 39 included studies published between 1995 and 2012 found only weak and inconsistent evidence for an association between psychosocial work factors and weight-related outcomes, however. There was some evidence for an association between working overtime and weight gain, particularly among male workers. The vast majority of papers (34) looked at job demands, job control or job strain and most weight-related outcomes were non significant. Fourteen studies looked at the impact of long working hours – some with statistically significant associations. It was not feasible to carry out a meta-analysis due to heterogeneity of the studies.

- *Scandinavian Journal of Work, Environment and Health* 2013; 39(3): 241–258.
- [http://www.sjweh.fi/show\\_abstract.php?abstract\\_id=3364](http://www.sjweh.fi/show_abstract.php?abstract_id=3364)

### Fat fighters

Multifaceted interventions are most effective in reducing cardiovascular disease (CVD) risk among emergency service workers, this systematic review finds. Outcome measures included blood pressure, blood lipids, body composition (body fat percentage and BMI), fasting blood glucose, CVD incidence, smoking and physical activity. Methodological quality was weak for all but one of the 15 included studies. Programmes combining behavioural counselling, exercise and nutrition are likely to be more effective than single interventions, though higher quality research is needed before the most effective strategies can be determined. CVD risk factor analysis in isolation is not recommended as an intervention to improve body composition.

- *International Archives of Occupational and Environmental Health* 2013; 86(3): 245–260.
- <http://link.springer.com/article/10.1007%2Fs00420-013-0854-0>

### Integrated RTW programmes

There is a lack of quality evidence on the effectiveness of integrated workplace disability management programmes (WPDM) in helping employees return to work (RTW) following sickness absence, according to this systematic review. Two non-randomised and 11 before-and-after studies were included. WPDM is defined as policies and practices systematically provided by

employers to promote RTW and job retention. Various specific interventions have previously been shown to improve RTW, but this review is unique because it focuses on integrated programmes provided by employers. WPDM programmes were hugely varied, and included any number of components, eg RTW policies, workplace adjustments, on-site physiotherapy, tailored job modification, workplace assessment, RTW coordination or disability case management, early contact when off sick, and education of staff and managers. Evidence quality was low and the review was unable to determine whether any reported effectiveness resulted from specific programme components or the programmes as a whole. Most programmes targeted musculoskeletal disorders and there was a lack of evidence on WPDM for mental health conditions.

- *Campbell Systematic Reviews 2012; 17:* doi: 10.4073/csr.2012.17.
- <http://campbellcollaboration.org/lib/project/136/>

### **Pedometers**

There is insufficient evidence that workplace health promotion programmes that include workers being given pedometers to encourage walking are effective in either increasing physical activity or improving health risk factors, this Cochrane systematic review finds. The four randomised controlled studies provided data for more than 1,800 employees, with the interventions lasting between four and six months; outcomes were measured immediately at the end of the trial. They showed inconsistent results for physical activity – just one study found an improvement – and, while there were improvements in secondary measures such as BMI, waste circumference and plasma glucose, the data were limited. Lack of randomisation was the chief reason for excluding 161 papers from the review.

- *Cochrane Database of Systematic Reviews 2013; 4: CD009209. DOI: 10.1002/14651858.CD009209.pub2.*
- <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD009209.pub2/abstract>

### **Prognosis screening tool**

A standard psychosocial risk factor ('yellow flag') clinical questionnaire – the Örebro Musculoskeletal Pain Screening Questionnaire (ÖMPSQ) – is a useful tool for predicting long-term sickness absence (LTSA) (over 30 days), presenteeism (going to work when ill) and disability benefits among workers referred to an occupational health service with neck or low back pain (N/LBP), according to Swedish research. The prospective cohort study comprised 195 mainly blue-collar workers from four workplaces followed up for two years. They had all visited the OH service because of N/LBP and completed the ÖMPSQ as well as a medical examination. The ÖMPSQ scores were statistically significant predictors for LTSA at six, 12 and 24 months' follow-up, although predictive ability did diminish with time. Those with an ÖMPSQ score above 90 (from a maximum of 210) had a five-fold increased risk of LTSA during the first six months, while those scoring above 105 had a six-fold higher risk. Setting the cut-off score at 90 improved test sensitivity – ie the lower limit is more likely to capture those who will have LTSA. A higher cut-off score of 105 increased the specificity of the test but reduced its sensitivity – in other words, it improved the ability to eliminate those who would not have LTSA, but at the expense of not identifying some individuals who will have LTSA. The predictive ability was highest for disability benefits, and lowest for presenteeism, although all were statistically significant.

- *Journal of Occupational Rehabilitation 2013; online first: doi: 10.1007/s10926-013-9454-9.*
- <http://link.springer.com/article/10.1007%2Fs10926-013-9454-9>

### **Psychosocial factors in the development of MSDs**

Musculoskeletal disorders (MSDs) of the neck and shoulder are common: for example, nearly half (46%) of employees aged over 56 in Germany report pain during or immediately after work. This systematic review sought to establish if psychosocial factors have an independent and incremental effect on the development of such conditions over time. Eighteen longitudinal studies met inclusion criteria (16 of high evidence quality) with follow-up ranging from six months to three years. There is strong evidence for an incremental effect of high job demands, low job control, high job strain and low social support at work (particularly co-worker support) on neck and/or shoulder conditions. There is moderate evidence for an incremental effect of low decision authority (a component of decision latitude) on neck/shoulder MSDs, but insufficient evidence on the impact of mental stress. More evidence is needed to quantify the observed effects.

- *International Archives of Occupational and Environmental Health* 2013; 86: 375–395.
- <http://link.springer.com/article/10.1007%2Fs00420-013-0848-y>

### **Cataracts from exposure to ionising radiation**

In 2007, the International Committee on Radiation Protection published revised estimates for cataract development due to exposure to ionising radiation – 0.5–2 Gy for a single exposure and 5–6 Gy for prolonged exposure – but warned that these figures might need further revision. This systematic review of 24 included papers concludes that there is in fact insufficient current evidence to establish a threshold and inconclusive evidence regarding a dose–response relationship. Most studies are on acute exposure – including from atomic bomb survivors and the Chernobyl nuclear plant disaster – though there is also evidence from occupational studies involving medical workers, flight personnel and astronauts. There is relatively little published evidence on exposure to low doses of ionising radiation and the development of cataracts, and just six papers gave a quantitative risk estimate. Three studies specified a dose threshold, which ranged between 0.34 Sv and 1.0 Sv. The latency period between radiation exposure and the development of lens opacity is also uncertain. Possible confounding factors for cataract development include age, sex, smoking, UV exposure, BMI, diabetes and family predisposition. (Grays express the physical absorbed dose of ionizing radiation, while sieverts indicate the biological effect on tissue. Both are in joules/kg, but sieverts are weighted according to the type of radiation and tissue.)

- *Radiation and Exposure Biophysics* 2013; online first: doi: 10.1007/s00411-013-0477-6.
- <http://link.springer.com/article/10.1007%2Fs00411-013-0477-6>

### **Nightshift and breast cancer**

There is insufficient current evidence to support a causal link between nightwork and breast cancer, according to this systematic review and meta-analysis. Sixteen studies of women doing nightwork met inclusion criteria (12 case–control and four cohort studies) – research on airline crew were among those excluded from the review, on grounds of possible exposure to cosmic radiation and time zone changes. The meta-analysis (12 included studies) showed a small, but significant raised risk for working at night for every five years' nightwork (relative risk 1.05; 95% confidence interval 1.01–1.10). Meta-analysis of the cohort studies alone showed no increased risk, while there was an elevated risk when only case–control studies were included (RR 1.09; CI 1.02–1.20). Although there is insufficient evidence to establish a definite link, the authors point out that a causal relationship cannot be ruled out. None of the studies had a low risk of bias for all the study characteristics, and better exposure data is required.

## Research Plus August/September 2013

- *Scandinavian Journal of Work, Environment and Health* 2013; online first: doi: 10.5271/sjweh.3371.
- [http://www.sjweh.fi/show\\_abstract.php?abstract\\_id=3371](http://www.sjweh.fi/show_abstract.php?abstract_id=3371)