

Strenuous healthcare work predicts absence

The risk of long-term sickness absence (LTSA) – defined here as at least eight consecutive weeks off work in a one-year follow-up – increases with perceived physical exertion during healthcare work, according to a large prospective study of Danish healthcare workers. Importantly, there was a dose–response relationship. A total of 8,592 healthcare workers (97% female) were asked to rate their perceived physical activity at work on a seven-point scale (from very light to extremely strenuous). Sickness absence data was taken from the national social security register. Just over 6% of subjects had at least one period of LTSA. The strongest predictor of LTSA in the one-year follow-up was LTSA in the previous year (hazard ratio (HR) = 7.69); however, there was also a significant increased risk for every one-point rise on the physical exertion scale. Sickness absence prevalence for those doing light, moderate and strenuous physical work activity was 4.6%, 6.4% and 8.9%, respectively, with a significant dose–response relationship ($p < 0.0001$). Similar results were found for shorter absence periods (those of at least three weeks).

- Scandinavian Journal of Work, Environment and Health 2012; online first: doi: 10.5271/sjweh.3310
- http://www.sjweh.fi/show_abstract.php?abstract_id=3310

Shiftwork link to healthcare worker absence

There is evidence for some association between shiftwork and sick leave in healthcare workers, but the relationship appears to depend on the nature of the shift. This systematic review included 24 studies; nine were of high methodological quality, the rest were low quality. There is inconsistent evidence for an association between shiftwork (defined as work outside the hours of 6am to 6pm) and sick leave per se; however, four high-quality studies found that shiftwork excluding nights was significantly associated with an increased risk of absence, with strong evidence for a positive association between absence and fixed evening work in women. There was inconsistent evidence for associations between absence and nightwork or rotating shifts, and inconclusive evidence from two low-quality studies on the impact of shift duration on absence. More manual handling, lower management support and evening work as a coping mechanism for those with existing health problems (on grounds that evening work is associated with lower overall workload) are suggested as possible mechanisms for the association between fixed evening work and absence.

- Occupational & Environmental Medicine 2012; online first: doi: 10.1136/oemed-2011-100488
- <http://oem.bmj.com/content/early/2012/07/04/oemed-2011-100488.abstract>

Physical work and pregnancy

Long working hours and work involving extensive periods of standing may result in lower foetal growth rates, but are not associated with adverse pregnancy outcomes, according to a large population-based cohort study in the Netherlands. The study population of 4,680 women with singleton pregnancies were in paid employment at the time they completed an occupational questionnaire sent out at 30 weeks' gestation. Birth outcomes were obtained from medical records and hospital registers. Long periods of standing in the third trimester were significantly associated with lower foetal growth rate (head circumference reduced by approximately 1cm or 3%). Working more than 25 hours a week in the third trimester was also associated with reduced head circumference and with lower foetal growth rate (150g–200g lower weight at birth). There were no associations with adverse pregnancy outcomes (low birth weight, small for gestational age or preterm birth).

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- Occupational & Environmental Medicine 2012; online first: doi: 10.1136/oemed-2011-100615
- <http://oem.bmj.com/content/69/8/543>

Awkward postures and the risk of back pain

There is no clear dose–response relationship between cumulative exposure to working in a flexed (and thus awkward) posture and low back pain (LBP), a systematic review has found (eight included studies). Three domains were considered (from the literature) to be important for cumulative exposure: duration of exposure; trunk range of motion (ROM – essentially, a measure of the extent of the trunk flexion); and frequency of trunk flexion. Most of the studies examined risk of LBP with increased duration of exposure and increased ROM; however, no studies considered frequency of trunk flexion. Although increased LBP risks were observed, confidence intervals were generally wide and there was only limited evidence for ROM or duration as risk factors for LBP, and no clear dose–response relationships. Methodological limitations in the included studies mean that relationships between these potential risk factors and LBP cannot be ruled out.

- Annals of Occupational Hygiene 2012; 56(6): 684–696
- <http://annhyg.oxfordjournals.org/content/56/6/684.abstract>

Low back pain risks

Previous reviews have failed to find convincing evidence for a relationship between low back pain (LBP) and physical risk factors. However, a prospective study of 1,086 workers in both blue- and white-collar jobs in 34 Dutch companies finds that cumulative low back load (CLBL) is a significant risk factor for the development of low back pain and is more consistently associated with LBP than are individual risk factors – ie lifting (repetition and load) or time in a fixed posture. Physical load – taking into account trunk flexion, trunk rotation and arm elevation – was assessed in the workplace using video observations and force measurements, and used to calculate CLBL. Personal, leisure-time, occupational and psychosocial factors were assessed by questionnaire. LBP was assessed at baseline and annually for three years. Workers in the highest of five CLBL exposure groups were at significantly higher risk of LBP compared with those in the lower-exposure groups. The study concludes that ergonomic interventions should be targeted at workers in this group – ie those whose work involves combinations of awkward postures and/or high exposure tasks.

- Journal of Occupational Rehabilitation 2012; online first: doi: 10.1007/s10926-012-9375-z
- <http://www.springerlink.com/content/c521540110580560/>

Neck pain

A systematic review of 21 longitudinal studies (19 of high quality) finds strong evidence for an association between neck and shoulder complaints with manual material handling, trunk flexion or rotation, repetitive movement, working in awkward or static postures, and working with the hands above the shoulders. There was also strong evidence for an association between shoulder complaints and exposure to vibration at work. There was insufficient evidence for an association between neck and/or shoulder disorders with seated work, or with working with a flexed or rotated neck. The review is unique because of its focus exclusively on longitudinal prospective studies – cross-sectional and case–control studies were excluded – with the intention of highlighting possible cause-and-effect relationships.

- International Archives of Occupational and Environmental Health 2012; 85: 587–603
- <http://www.springerlink.com/content/n53051g116668360/>

Upper-limb disorder prevention

This Cochrane systematic review found relatively sparse evidence for the effectiveness of ergonomic devices and/or training in preventing work-related upper-limb and neck disorders. It included 15 papers covering 13 randomised controlled trials involving a total of 2,397 workers; 11 of the studies were in office environments and two in healthcare settings. The evidence quality was generally low or moderate. There was moderate-quality evidence that use of an arm support with an 'alternative' mouse (for example one designed to give a neutral forearm position, or a trackball) as compared to a conventional mouse, reduces symptoms and incidence of disorders of the neck and shoulder but not those of the right arm (the study did not include outcomes for left upper limbs). These devices used alone were not effective. There was low-quality evidence that supplementary rest breaks were not effective in reducing discomfort in the neck, shoulder, right arm, wrist or hand. Other interventions covered in the review, including training with or without alternative equipment, safe lifting or reduced working hours, did not reduce symptoms or incidence of disorders (low to moderate evidence).

- Cochrane Database of Systematic Reviews 2012, issue 8, article number CD008570; doi: 10.1002/14651858.CD008570.pub2
- <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008570.pub2/pdf/abstract>

Shiftwork increases coronary risks

Shiftwork is associated with a significant, albeit relatively small, increased risk of both myocardial infarction (risk ratio (RR) = 1.23) and ischaemic stroke (RR = 1.05) according to a large systematic review and meta-analysis (34 included studies, covering more than 2 million people). The risk of 'any coronary event' also increases with shiftwork (RR = 1.24), though there was substantial heterogeneity in the data. Nightshifts were associated with the largest increased risk of coronary events (RR = 1.41). The authors suggest that a combination of unhealthy behaviours, impaired sleep quality, poorer work-life balance and disruption to the circadian rhythm may explain the raised risks. 'Shiftworkers should be educated about cardiovascular symptoms in an effort to forestall or avert the earliest clinical manifestations of disease,' they conclude.

- BMJ 2012; 345: e4800 doi: 10.1136/bmj.e4800
- <http://www.bmj.com/content/345/bmj.e4800>

Cost-effectiveness of worksite mental health programmes

There is only tenuous evidence that worksite interventions to treat or prevent mental health problems are cost effective, according to a systematic review of economic evaluations (10 studies met inclusion criteria). All four studies looking at prevention or treatment found a 'potentially favourable return' on investment but only one study was assessed as high quality. The high-quality US study showed significantly improved productivity for workers with depression given enhanced care, with a 302% return on investment over two years. Five of the six studies evaluating return to work found no evidence of cost-effectiveness – one moderate-quality study from the Netherlands reported modest net benefits. The studies were from the US, Netherlands and Denmark and differences in the way healthcare is funded in these countries must be borne in mind when translating the results of economic-evaluation studies to the UK situation.

- Occupational & Environmental Medicine 2012; online first: doi: 10.1136/oemed-2012-100668
- <http://oem.bmj.com/content/early/2012/08/02/oemed-2012-100668.abstract>

Patient handling

The amount of time nurses spend working in a forward-bending posture is positively and significantly associated with the extent of personal basic-care tasks they perform, a German study reveals. Twenty-seven nurses recruited from seven German hospitals and four nursing homes took part. Nurses' postures were assessed throughout their shifts with a computer-assisted personal measuring system – sensors were attached to the worker to give three-dimensional information about lumbar position. Nurse activities, such as patient transfers with or without lifting aids, were measured by video. Nursing home nurses performed four times as many lifts (26.5 per nurse per shift) than their hospital counterparts (6.5 lifts per shift) and spent more time actually lifting patients' body weight (or part of it) – 88 seconds per shift compared with 16 seconds per shift for hospital nurses. Lifting aids (which were available) were used for only 0.4% of the lifts carried out by nursing home nurses and not at all by the hospital nurses. Nursing home nurses performed about one-third more work-related inclinations over 20 degrees than hospital nurses. Working while bending more than 20 degrees was significantly related to work in a nursing home and to the 'basic care intensity score' (a new instrument to assess tasks such as bed preparation, washing and dressing and undressing patients). Study weaknesses include the possible influence of the monitoring equipment on both nurse and patient behaviour and relatively low participant numbers. Its main strength was the use of accurate real-time activity and posture monitoring.

- Annals of Occupational Hygiene 2012; 56(60): 697–707
- <http://annhyg.oxfordjournals.org/content/56/6/697.abstract>