

Hand washing for outdoor work

The use of ordinary soap and warm running water is the most effective method of reducing hand-borne microbial contamination in outdoor work, such as agriculture, waste recycling and construction, according to this critical review (eight papers met inclusion criteria). Soap and cold running water is also effective in removing contamination, though is thought likely to deter some workers in cold conditions. Impregnated hand wipes can reduce hand contamination – and are useful where hand-washing facilities are absent – but their effectiveness depends on the type and concentration of active ingredient and the way they are used. Alcohol gels and rubs are effective under certain conditions, but limitations to their use in outdoor work include that: visible organic soiling can neutralise their effect; they do not physically remove hand soiling; and at least 3ml of product must be applied to each hand to be effective. There is some evidence that water alone provides better physical removal of contaminants than hand wipes or alcohol hand rubs. (Note: the findings only relate to outdoor work and not to the use of alcohol gels where the hands are visibly clean, for example in healthcare.)

- *HSE Research Report 1007. Bootle: HSE, 2014*
- <http://www.hse.gov.uk/research/rrhtm/rr1007.htm>

Return to military work after cancer

The likelihood of a return to work (RTW) in the Royal Air Force after a cancer diagnosis depends on both clinical and occupational factors, according to this retrospective cohort study of 194 serving personnel – 90% male, median age 39 years. Testicular, melanoma, haematological and gastrointestinal cancers accounted for two-thirds of the cases. The median RTW time was 107 days (range 0–547 days) but varied with cancer site: eg two days for melanoma; 75 days for testicular; 255 days for gastrointestinal and 264 days for breast cancer. Of those who underwent surgery half (51%) returned to work within one month. Predictors of RTW at 18 months were: no treatment received (hazard ratio (HR) = 174; 95% confidence interval (CI) 42–723); diagnosis of melanoma (HR = 9.7; 5.0–19.1); and being a commissioned officer (HR = 2.31; 1.46–2.65). A diagnosis of intra-cranial cancer (HR = 0.11; 0.03–0.34) and undergoing chemotherapy (HR = 0.18; 0.10–0.32) reduced the likelihood of RTW at 18 months. Smoking status and having taken one to four days' absence prior to diagnosis were not predictive of RTW.

- *Journal of Occupational Rehabilitation 2014; online first: doi: 10.1007/s10926-014-9516-7*
- <http://link.springer.com/article/10.1007%2Fs10926-014-9516-7>

Pushing and pulling

There is strong evidence, with consistent findings, that jobs involving pushing and pulling increase the risk of occupational shoulder symptoms, according to this systematic review. Two cross-sectional studies, one case-control study and four prospective cohort studies, together covering more than 8,000 participants, met inclusion criteria. There is moderate evidence – defined here as 'consistent findings in at least two prospective cohort studies with low risk of bias and effect sizes in the same direction' – that high exposure to occupational pushing and pulling are associated with neck/shoulder symptoms, but insufficient or conflicting evidence for a link with upper-arm, elbow, forearm, wrist or hand symptoms. Exposure levels were often defined in the included studies in terms of frequency of pushing/pulling tasks as well as load mass and duration.

- *Occupational and Environmental Medicine 2014; online first: doi: 10.1136/oemed-2013-101837*
- <http://oem.bmj.com/content/early/2014/07/17/oemed-2013-101837.abstract>

Respirable quartz

A meta-analysis and systematic review finds a significant decline in respiratory function in workers exposed to respirable quartz dust (eg in quarrying and construction). Eight out of 10 included studies found significant reductions in both mean forced expiratory volume in one second (FEV1) and in the ratio of FEV1 to forced vital capacity (FVC) with increased occupational exposure to crystalline quartz. In the meta-analysis of six studies, mean FEV1 was reduced by 4.6% in dust-exposed workers (CI 2.1%–7.2%) compared with workers with no or low exposure. The recorded declines in lung function are likely to have been underestimated owing to a 'survivor effect' in cross-sectional and longitudinal studies – that is, those who leave their jobs, including through ill health, are no longer being monitored.

- *Occupational and Environmental Medicine* 2014; 2014; 71: 583–589
- <http://oem.bmj.com/content/71/8/583.abstract>

Supportive leadership key to preventing long-term absence

A prospective cohort study involving 6,758 workers in Norway identifies three psychosocial factors as predictive of long-term sickness absence (LTSA), together accounting for 15% of all LTSA at population level. Participants had all been in paid work during a reference week at the beginning of the study and had worked at least 100 days in the previous year. Psychosocial risk factors were assessed using standard questionnaires. In total, 635 individuals (9.4%) had been on LTSA (at least 40 days) in the year after the initial survey. After controlling for confounding factors – such as age, sex, education, health conditions and smoking status – significant psychosocial factors predicting LTSA were: role conflict (odds ratio (OR) = 1.58; CI 1.20–2.09), emotional demands (OR = 1.32; CI 1.03–1.69), and low supportive leadership (OR = 1.50; CI 1.15–1.96). There were three elements to the measurement of supportive leadership – does the employee's immediate supervisor: provide help when needed; show appreciation for work done; and treat employees fairly and equally? Bullying and job strain were not predictive of LTSA after controlling for other factors.

- *Journal of Occupational and Environmental Medicine* 2014; 56(8): 787–793
- http://journals.lww.com/joem/Fulltext/2014/08000/Work_Related_Psychosocial_Risk_Factors_for.1.aspx

Pre-placement nerve conduction studies for CTS

Post-offer pre-placement nerve-conduction studies (NCS) for carpal tunnel syndrome (CTS) are neither sufficiently sensitive nor cost effective to be of practical value, this prospective longitudinal study finds. CTS is a common upper-limb disorder causing considerable time off work, with direct medical costs of over \$1 billion in the US (where healthcare costs are generally borne by the employer's workers' compensation scheme). After excluding those with a previous history of CTS or peripheral neuropathy a total of 1,027 new recruits (65% male, mean age 30 years) doing hand-intensive work in construction, healthcare, service and clerical jobs were included in the study. They were given baseline physical examinations and NCS of the median and ulnar nerves, and completed surveys at baseline and at six, 18 and 36 months. Thirty-three CTS cases were identified during the follow up. Although abnormal NCS results at baseline were statistically significant predictors of future CTS, sensitivity was low and positive predictive value poor. Various cost-benefit analyses were carried out, assuming \$150 for the cost of screening and \$20,000 treatment costs, but none showed screening to be cost effective.

- *Journal of Occupational and Environmental Medicine* 2014; 56(8): 840–847
- http://journals.lww.com/joem/Fulltext/2014/08000/The_Effectiveness_of_Post_Offer_Pre_Placement.8.aspx

Improving sleep after nightwork

There is low quality evidence from nine studies that taking melatonin improves sleep length after nightshift work, but does not alter other sleep parameters, including length of time needed to fall asleep and objective sleep quality, this Cochrane systematic review finds. Sleep length increased by about 25 minutes for daytime sleep and 15 minutes for night sleep following the nightshift. There were no differences in reported side effects due to melatonin compared to placebo. There is moderate quality evidence that the vigilance-promoting drugs modafinil and armodafinil – both approved in the US to treat shiftwork disorder –improve alertness and reduce sleepiness, but they are also associated with adverse effects, such as headaches and nausea. There is low quality evidence, from one trial, that pre-shift caffeine and pre-shift naps increase alertness on the nightshift. Evidence on the use of hypnotic drugs was unclear or insufficient (low quality evidence). Fifteen randomised placebo-controlled studies were included.

- *Cochrane Database of Systematic Reviews 2014; 8: CD009776*
- <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD009776.pub2/abstract;jsessionid=54A6E067650E29B33389D6BD32621D85.f03t04>

Pilots have double the risk of melanoma

A systematic review and meta-analysis of 19 included papers, published between 1990 and 2013, covering more than 266,400 flight personnel from 11 countries, finds that pilots and cabin crew have more than double the risk of melanoma skin cancer than the general population. The meta-analysis reveals a standardised incidence ratio (SIR) for pilots of 2.22 (CI 1.67–2.93) and for cabin crew of 2.09 (CI 1.67–2.62). For pilots the standardised mortality ratio is 1.83 (CI 1.27–2.63), and for cabin crew is 0.90 (CI 0.80–1.01). The summary SIR for males in any flight occupation is slightly higher (2.38; CI 1.75–3.23) than for females (1.93; CI 1.50–2.48). Occupational exposure to cosmic rays is considered a more likely explanation than lifestyle factors on grounds that a large observational study did not find any differences in the prevalence of risk factors, such as history of sunburn, sunbed usage, sunscreen application or taking sunny vacations. Nineteen papers met inclusion criteria, 15 covering pilots and four on cabin crew.

- *JAMA Dermatology 2015; online first: doi: 10.1001/jamadermatol.2014.1077*
- <http://archderm.jamanetwork.com/article.aspx?articleid=1899248>

Antineoplastic drugs

Healthcare workers with long-term exposure to antineoplastic drugs through inhalation and skin absorption are at increased risk of some adverse reproductive outcomes, though effect sizes are relatively small or uncertain, this review finds. Meta-analyses identified a 46% increased risk of miscarriage (CI 11%–92%) but no significant raised risk for all congenital abnormalities combined (crude odds ratio = 1.64; CI 0.91–2.94). Two included studies found an association between drug exposure and subfertility (time to pregnancy in one and infertility in the other) but with relatively small raised risks. There were insufficient numbers of exposed cases for any conclusions on stillbirth. Eighteen studies met inclusion criteria; limitations included a lack of recent occupational exposure and outcomes data and small sample sizes.

- *Journal of Occupational and Environmental Medicine 2014; 56(9): 901–910*
- http://journals.lww.com/joem/Abstract/publishahead/Reproductive_Health_Risks_Associated_With.99090.aspx

Visual impairment reduces chances of being in work

Both visual impairment (VI) (odds ratio (OR) = 3.0; CI 1.9–4.8) and uncorrected refractive error (URE) (OR = 1.4; CI 1.1–1.6) are predictive of not being in work, according to a multivariate analysis of nearly 20,000 participants in the 1999–2008 US National Health and Nutrition Examination Survey. Individuals completed an employment questionnaire and their vision was assessed. More than three-quarters (76%) of men with normal vision (20/40 vision or better) were in work, compared with 66% of those with URE (worse than 20/40 but improving to at least 20/40 with autorefraction) and 59% with VI (worse than 20/40 after autorefraction). The equivalent figures for women were 63%, 56% and 24%, respectively. The risk of not working for women with VI was particularly high (OR = 4.9; CI 2.5–9.6). However, neither VI nor URE were predictive of unemployment (ie seeking work or having been laid off) suggesting that many of those with impaired vision either never join or drop out of the labour force. The researchers call for strategies to improve employment rates for this ‘at risk population’.

- *JAMA Ophthalmology* 2014; online first: doi: 10.1001/jamaophthalmol.2014.2213
- <http://archophth.jamanetwork.com/article.aspx?articleid=1888108&resultClick=3#Abstract>

Returning to work after joint replacement surgery

There is strong evidence that patients who have no restriction on their work activity following hip or knee joint replacement surgery are more likely to return to work sooner than are those with workplace restrictions, according to this systematic literature review. Patients who have good post-operative support from healthcare providers and family, as well as those who are younger and without other health issues are more likely to return to work (both moderate evidence). Motivation (moderate evidence) and being self-employed (strong evidence) are important predictors of early return to work. Predictors of poor work rehabilitation are being unemployed, on benefits or on long-term sick leave before the surgery (all strong evidence). Ten studies, including four from the UK met inclusion criteria. The authors note a lack of qualitative evidence on employment outcomes – particularly on barriers faced by younger workers – and that study participants were generally in their 60s and above.

- *Occupational Medicine* 2014; 64: 402–409
- <http://occmmed.oxfordjournals.org/content/64/6/402.abstract>