Work in brief

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BRAIN HAEMORRHAGE AND PM7

Environmental concentrations of inhaled particulate matter (PM) can vary rapidly; PM can also affect blood and vagal tone within a matter of minutes. However, little is known about the transient risks to health over such short time frames. Yamazaki *et al*[1] examine the relation between hourly time-lagged concentrations of PM in 13 urban areas of Japan and deaths due to stoke, ascertained from the official records. In case-crossover analysis, the 1-h mean concentration of PM7, measured 2 h before death, was associated with deaths due to intracerebral haemorrhage (odds ratio 2.4 for PM7 $\geqslant$200 $\mu g/m^3$), but not deaths due to ischaemic stroke. An important implication is that air quality standards may need to reflect hourly data as well as daily mean concentrations of PM.

AIR POLLUTION AND CHILDREN'S HEALTH

One important challenge in assessing the health effects of traffic-related air pollution is obtaining a firm measure of personal exposure. In this respect, Geographical Information Systems (GIS) based modelling offers advantages over questionnaire responses, being less vulnerable to misclassification bias. The study by Morgenstern *et al*[2] relates GIS-assessed estimates of exposure to health data from two birth cohorts of young German children. Positive associations with $PM_{2.5}$ and NO_2 were found for various respiratory symptoms–wheeze, cough without infection, dry cough at night, bronchial asthma, bronchitis and respiratory infections, as well as upper respiratory tract symptoms in the first 2 years of life. Further work is planned to assess associations with air pollution as young members of the cohorts grow up.

NOISE AND HEARING LOSS IN THE MODERN WORKPLACE

Although the relationship between excessive noise and hearing loss has been recognised over many years, much of the knowledge on exposure-response relationships derives from cross-sectional surveys predating implementation of workplace hearing conservation programmes. Rabinowitz *et al*[3] have explored the situation in a contemporary industrial cohort. Ten-year hearing loss rates were assessed in some 6000 aluminium workers. Paradoxically, high frequency hearing loss was found less often in workers with very noisy jobs than in those who worked at lower noise levels (85 dBA or less). The authors attribute their findings to intensive hearing conservation efforts and differential wearing of hearing protection in certain jobs. They suggest that more preventive effort is now needed to protect workers whose jobs expose them at relatively lower ambient levels of noise.

RISK FACTORS FOR ACUTE HAND INJURY

The hand is a common site of occupational injury. Risk factors tend to be transient, and so increasingly have been studied by the case-crossover approach (in which activities preceding injury are compared with activities in control (non-injury) intervals for the same worker). Chow *et al*[4] use this method to identify remedial short-lived risk factors among subjects with acute hand injury presenting for compensation. Exposure information was obtained for the 1 h preceding injury and the same time interval on the day prior to injury. Seven significant risk factors were identified (all with very high odds ratios): using malfunctioning equipment; using a different work method; performing unusual tasks; working overtime; feeling ill; and being distracted and rushed. Wearing gloves had a non-significant protective effect. The study is of value in highlighting some potential targets for prevention by engineering and administrative controls, education and training.

References

1 **Yamazaki S**, Nitta H, Ono M, *et al*. Intracerebral haemorrhage associated with hourly concentration of ambient particulate matter: case-crossover analysis. *Occup Environ Med* 2007;**64**:18–25.
2 **Morgenstern V**, Zutavern A, Cyrys J, *et al*. Respiratory health and individual estimated exposure to traffic-related air pollutants in a cohort of young children. *Occup Environ Med* 2007;**64**:9–17.
3 **Rabinowitz PM**, Galusha D, Dixon-Ernst C, *et al*. Do ambient noise exposure levels predict hearing loss in a modern industrial cohort? *Occup Environ Med* 2007;**64**:54–61.
4 **Chow CY**, Lee H, Lau J, *et al*. Transient risk factors for acute traumatic hand injuries: a case-crossover study in Hong Kong. *Occup Environ Med* 2007;**64**:48–53.