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OCCUPATIONAL RESPIRATORY DISEASE: HISTORY AND PROSPECTS

Work related respiratory diseases have been recognised since the time of Ramazzini, but they are still not completely understood or controlled. Editorials in this issue consider the history and future prospects for two such diseases. Schencker[1] highlights the "agricultural asthma paradox" emerging from recent research: exposure to farm life early in childhood seems to reduce the incidence of asthma, while exposures to adults on working on farm cause asthma. Meldrum and colleagues[2] discuss the role of occupational exposure in COPD. Studies in several countries suggest that 15–20% of all COPD may be due to occupational exposure to dusts, gases, vapours, and fumes. The authors say there are no parallel data from the UK, however; they call for urgent research to characterise the situation in the UK and for intervention to reduce the levels of harmful dusts. In a comment on this editorial, Christiani[3] draws attention to the global burden of COPD, now ranked among the leading causes of death worldwide and not explained by smoking. He argues that it is time for action and proposes four specific measures to reduce the burden of work related COPD.

TRAFFIC EXHAUST AND DNA DAMAGE

Exposure to vehicle exhaust products is linked to health outcomes that include cardiovascular diseases, respiratory diseases, and cancer. The mechanisms behind these associations remain elusive, however. Lai and colleagues[4] explore one potential mechanism related to oxidative DNA damage. They used biological markers measured in urine and blood of 47 toll collectors and a referent group of 27 office workers, all women, to examine the association of exposure to vehicle exhaust and oxidative DNA damage. The concentration of the marker of oxidative damage, urinary 8-hydroxydeoxyguanosine, increased quantitatively with the concentration of the exposure biomarker in linear regressions. These findings may suggest an avenue for research on the mechanisms of some effects of air pollution.

LONGITUDINAL ASSOCIATIONS OF ANGINA AND EFFORT-REWARD IMBALANCE

Socially disadvantaged groups have been shown to suffer higher risks of cardiovascular diseases, and less-advantaged workers also appear to be disproportionately exposed to adverse psychosocial work environments believed to have detrimental cardiovascular effects. This month's paper by Chandola and colleagues[5] uses data from the Whitehall II study of British civil servants to examine the risk of self-reported incident angina in relation to changes in the imbalance of occupational effort and rewards. The authors report that increases over time in effort relative to rewards were more common in lower grade employees. They also found evidence, but only among men, that increasing effort-reward imbalance (ERI) was associated with higher risk of angina and that employment grade also appeared to affect the risk both directly and through ERI.

TRANSFER OF LEAD FROM MOTHER TO FETUS

While the transfer of lead across the placenta is beyond doubt, the factors that regulate the transfer are not well understood. Harville and colleagues[6] investigated potential predictors of transfer of maternal lead to the infant in data from paired maternal and cord blood samples. In multivariate analyses, mothers' alcohol drinking and higher blood pressure contributed to greater transfer of lead, while higher maternal hemoglobin and sickle cell trait were associated with less transfer. These findings suggest that transfer of lead from mother to fetus could be reduced, in addition to reducing mothers' exposure to lead.

1 **Schenker MB**. Farming and asthma: where do we stand? *Occup Environ Med* 2005;**62**:211.
2 **Meldrum M**, Rawbone R, Curran AD, *et al*. The role of occupation in the development of chronic obstructive pulmonary disease (COPD). *Occup Environ Med* 2005;**62**:212–14.
3 **Christiani DC**. Occupation and COPD: time for action. *Occup Environ Med* 2005;**62**:215.
4 **Lai C-H**, Liou S-H, Lin H-C, *et al*. Exposure to traffic exhausts and oxidative DNA damage. *Occup Environ Med* 2005;**62**:216–22.
5 **Chandola T**, Siegrist J, Marmot M. Do changes in effort-reward imbalance at work contribute to an explanation of the social gradient in angina? *Occup Environ Med* 2005;**62**:223–30.
6 **Harville EW**, Hertz-Picciotto I, Schramm M, *et al*. Factors influencing the difference between maternal and cord blood lead. *Occup Environ Med* 2005;**62**:263–9.