Work in Brief

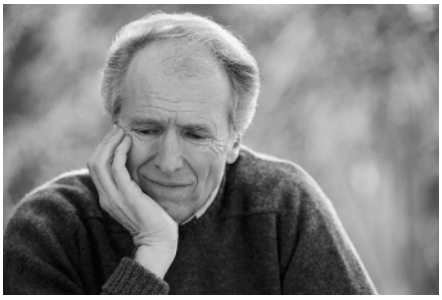
Keith Palmer, *Editor*

Organochlorine compounds and thyroid function

Organochlorine compounds (OCs), such as polychlorinated biphenyls (PCBs) and dioxins, have been linked with hypothyroidism both in animal and human studies but the relationship is not clearly established. OCs can be found in human milk, blood and adipose tissue and their potential effects in young children and adolescents are of special concern given the role of thyroid hormones in myelination and neurodevelopment. Álvarez-Pedrerol and colleagues have evaluated the relationship between certain OCs (p,p'-DDT, ß-HCH, PCB congeners) and concentrations of free T4, total T3 and thyrotropin in the blood of 259 preschool children from a Spanish general population birth cohort.[1] Higher OC levels tended to be associated with lower total T3 levels and free T4 was inversely related to PCB-118. The authors raise a concern that the thyroid system, notably total T3 level, may be affected even at background levels of exposure in vulnerable youngsters from the general population.

Work and depression

In this issue, Bonde reviews the epidemiological evidence relating psychosocial factors at work to risk of major depression.[2] A systematic search identified 16 company- or population-based studies covering some 63 000 workers, in which perceived psychosocial stresses were measured using validated multi-item scales. Adjusted relative risks for onset of a new major depressive episode were mostly in the range of 0.5–1.5 but were strongest and most consistent for the combination of high demand and low decision latitude (job strain) among men. A common limitation of studies was the lack of independence in measurement of exposures and outcomes and the authors call for research aimed specifically at addressing this methodological problem.



Asthma, cardiorespiratory disease and very small particles

Ambient aerosols of particulate matter (PM) are associated with mortality and morbidity but the role of particle size as compared with particle numbers and mass continues to attract research interest. Ultrafine particles (<0.1 μm diameter) have featured in fewer investigations than PM_{10} and $PM_{2.5}$ subfractions, although contributing very much higher particle numbers and—in toxicological studies—much stronger inflammatory effects per unit PM mass. Andersen and co-authors have measured the number concentration of particles at various sizes in Copenhagen and their association with hospital admissions for cardiorespiratory disease in the elderly and for asthma in children.[3] NC_{100}, the number concentration of particles <100 nm in diameter, was associated with admissions for paediatric asthma, whereas PM_{10} had relatively little effect. However, for cardiorespiratory admissions in the elderly, the pattern was reversed. The authors suggest that public health control measures need to address exposures to PM across the full range of particle sizes.

Elsewhere in the Journal

This month's Journal also includes guidelines for practice in relation to bloodborne infections,[4] an education article on options for estimating prevalence ratios in research enquiries[5] and a study aimed at developing common metrics of mechanical exposure, to aid meta-analysis in back pain inquiries.[6]

References

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6. **Griffith LE,** Wells RP, Shannon HS, *et al*. Developing common metrics of mechanical exposures across aetiological studies of low back pain in working populations for use in meta-analysis. *Occup Environ Med* 2008;**65**:467–81.