

Letters

Cot mattresses and the sudden infant death syndrome

EDITOR,--P J Fleming and colleagues' editorial on the possibility of a relation between the fire retardants, biocides, and plasticisers in cot mattresses and sudden infant death should help medical professionals understand how the sudden infant death syndrome may be caused by gases generated from mattresses by micro-organisms¹; arsine from wallpaper similarly caused deaths of infants a century ago.²

Scopulariopsis brevicaulis develops through warmth and perspiration on cot mattresses and can convert phosphorus, arsenic, and antimony compounds into toxic trihydride gases, but activity is low for several months; the risk is lowest for firstborn infants, who are most likely to have new mattresses, and with reused mattresses the risk becomes important only after several weeks of fungal reactivation.^{2,3} Poisoning first causes headache and irritation, with dislodgement of bedding by stronger infants, so that risk decreases with age; hyperthermia from fever or overwrapping increases the generation of gas, and analgesics suppress warning headaches.

Emphasis on antimony in the editorial and in the television programmes to which the editorial refers is unfortunate as arsenic and phosphorus are also hazardous; arsenic is rarely found, but phosphorus is common. The normal low antimony concentration in tissue permits chemical detection of stibine poisoning, but phosphine poisoning is not detectable. The editorial criticises the analysis of antimony in hair for the television programmes, but many infants had high antimony concentrations while their mothers had low concentrations, confirming exposure in the infants' environment alone. Antimony is usually found in homes only as a fire retardant in polyvinyl chloride and can transfer to infants only as a gas.

Statistics published by the Office of Population Censuses and Surveys for England and Wales show a reduction in the rate of the sudden infant death syndrome of about 40% after the "back to sleep" campaign in November 1991--the same decrease that occurred after similar interventions in other countries--but the rate had already decreased by about 30% over several years before the campaign started.⁵ The decrease followed recommendations for changes in the manufacture and care of cot mattresses.

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3. Richardson BA. Cot mattress biodeterioration and SIDS. *Lancet* 1990;335:670.
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5. Office of Population Censuses and Surveys. OPCS Monitor DH3 88/3, DH3 91/1, DH3 93/2, DH3 94/1.

