

### Cot death and cot mattresses

I am pleased that Dr Mitchell considers it necessary to continue the debate on this subject (NZ Med J 1995; 108: 444) but he still ignores recent publications on my hypothesis and none of his references takes account of the major changes in mattress composition in the British Isles.

For example, Dr Mitchell refers to studies on liver antimony in SIDS victims by Howatson et al.<sup>1</sup> Cot mattress PVC covering containing antimony has not been in normal use in Britain since 1991 and it is not surprising that antimony residues were not found as it is unlikely that stibine poisoning was involved; phosphine poisoning was more likely as phosphorus fire retardants are now used to an increased extent, but phosphorus residues from this poisoning cannot be found as normal tissue phosphorus levels are too high. In Britain the relationship between SIDS and the prone position is now less marked because the heavier stibines are no longer involved but the lighter phosphines can cause poisoning whatever the position, although the risk is reduced and this is demonstrated by the overall reduction in SIDS rates in England and Wales of about 70% since 1989, a greater reduction than in New Zealand or any other country, half this reduction occurring before avoidance of the prone position was recommended in Britain in November in 1991.<sup>2</sup>

Dr Mitchell refers to the Turner report published in 1991.<sup>3</sup> He quotes a statement that the Laboratory of the Government Chemist failed to find evidence of the generation of gaseous compounds of antimony or phosphorus, but this is not strictly true. The report discloses that the LGC found antimony but not consistently. The generation of arsine is well known and they therefore spiked samples with arsenic, but they again obtained inconsistent results, indicating that their technique was faulty. The Turner group also failed to carry out analyses for antimony in tissue to check for stibine poisoning.

Doubts regarding the reliability of the Turner investigations were highlighted

by a Cook Report on television.<sup>4</sup> These various developments prompted the Department of Health to appoint a new expert group chaired by Lady Limerick. Meanwhile, the SIDS rate in England and Wales has stabilised at about 30% of the 1989 level because there is no current incentive to remove phosphorus compounds from mattress materials. Mitchell suggest that polythene covers on mattresses are dangerous. The mattress surface presented to a sleeping infant by a polythene cover is the same as for a normal PVC (vinyl) cover. Obviously a loose cover of either type should be firmly secured. The advantage of polythene is that it does not contain phosphorus, arsenic or antimony.

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- 1 Howatson AG, Patrick WJA, Fell GS, Lyon TDB, Gibson AAM. Cot mattresses and sudden infant death syndrome. *Lancet* 1995; 345: 1044-5.
- 2 Office of Population Censuses & Surveys. Sudden infant deaths 1990-94. OPCS Monitor DM 95/3.
- 3 Department of Health. Sudden infant death syndrome (SIDS). Report of the expert working group enquiring into the hypothesis that toxic gases evolved from chemicals in cot mattress covers and cot mattresses are a cause of SIDS. Chair P Turner, London; HMSO, 1991.
- 4 Cook Report. The cot death poisonings. Central Television 1994, Nov. 17.

