

SIDS and the toxic gas theory

Two issues have prompted me to write to readers of the Journal regarding issues that relate to the toxic gas theory and the sudden infant death syndrome (SIDS). Firstly, I have read the recently published Limerick committee report investigating the theory. The report rejects the validity of the toxic gas theory on all counts. However, the conclusion that there is no possibility that toxic gases will be produced from cot mattress materials is incorrect. In fact, the report shows the clear potential for microbiological action on cot mattress materials containing arsenic and/or antimony to produce trimethylarsine and perhaps even trimethylstibine. Logic dictates to me that if there is real potential for infants to be exposed to these gases then the only sensible course of action is to ensure that antimony and arsenic are removed from bedding materials.

Dr Jim Sprott maintains, however, that in New Zealand the most serious problem is with phosphine production from phosphorus in bedding materials. I am undecided as to whether or not phosphine can be produced in the infant's sleeping environment in the manner in which Sprott describes. It would, however, be extremely difficult to remove all phosphorus from an infant's sleeping environment; Sprott advocates wrapping the mattress instead. The recent leading article in the Journal (NZ Med J 1998; 111: 219-21), written by Ed Mitchell, Jim Waters and myself, discusses the use of plastic in an infant's sleeping environment. Dr Sprott has objected to a statement that we made because he felt that it defamed the BabeSafe mattress cover. I wish to clarify for readers of the Journal that, to my knowledge, there have been no reported cases of suffocation on a BabeSafe plastic cover; to state or imply as much would be inaccurate.

With regard to the whole issue of SIDS and the toxic gas theory, I conclude that it is not unreasonable to suggest that some percentage of cot deaths could be due to poisoning by trimethylarsine, trimethylstibine or even phosphine. I do not subscribe to the theory that these gases are responsible for all cot deaths. It seems to me that there may be some common ground towards which the Cot Death Association and Jim Sprott could move.

Mike Fitzpatrick,
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The statement in the leading article referred to by Dr Fitzpatrick noted that there is definite evidence that plastic sheeting in a baby's sleeping environment has caused the death of babies through suffocation. This statement cited the findings of a survey of causes of death for infants and children in California between 1 January 1960 and 31 December 1981 (Public Health Rep 1985; 100: 231-40). The statement should be read as referring solely to this study and should not be taken to imply that there have been deaths of infants due to suffocation on the BabeSafe plastic mattress cover or on plastic of the type specified by Dr T J Sprott for mattress wrapping. We do not know of any such deaths.

Joint Editors.

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Anmerkungen von Dr TJ Sprott zu:

Fitzpatrick M G. "The Evolution of Phosphine from Cot Mattress Materials", Department of Chemistry, University of Auckland, Final Report, December 1997.

With regard to the research by Dr M G Fitzpatrick, I can send you a copy of this paper if you wish. This research (which was commissioned by the NZ Cot Death Association) was to ascertain whether phosphine could be generated from cot mattress materials. Dr Fitzpatrick did not achieve phosphine generation, but he did find evidence of generation of trimethylarsine from PVC cot mattress material. He reported this to NZCDA (in December 1997), but they did not take the matter any further.

In addition to reporting evidence of generation of trimethylarsine, in his report to NZCDA Dr Fitzpatrick also stated:

"Despite conflicting evidence the [toxic gas] theory deserves attention because the toxic gases, trimethylarsine, trimethylstibine and phosphine have all been produced by microbial action on substrates that might be found in infant bedding."

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