

Keep room temperature at 20°-22°C and refrain from overdressing and excessive use of blankets and covers

The possible role of thermal stress in the etiology of the sudden infant deaths syndrome has been suggested by many authors and Wailoo et al showed that many babies are put to bed under excessive amounts of bedding.¹ Infants sleeping in the prone position with an excess of bedding are more likely to become hyperthermic than infants in the supine position with equal bedding.² Raising the environmental temperature around healthy infants aged 3 months or less increases respiratory oscillations, suggesting an effect on the respiratory control system.³ Thus, infants in this age range, which is the age of peak incidence of sudden infant death syndrome (SIDS) would be at increased risk of the consequences of overwrapping. The effect of overwrapping would likely to be greater at the time of acute viral infection, when the metabolic rate rises. Two studies have shown that many parents respond to infections by increasing the amount of clothing and bedding.^{4,5} In a case control study on 67 infants who died of SIDS and 144 controls, infants dying of SIDS were more likely to have been more heavily wrapped and had the heating on all night. The differences were more pronounced in the younger infants (less than 70 days) than in the older ones.⁶ In an epidemiological study from New Zealand, parents of 393 infants who died of SIDS were interviewed at home and compared to 1592 control, a representative sample of all hospital births.⁷ Temperatures of the infant's bedroom estimated from the outside temperature and a model were used to predict the appropriate insulation for the lower critical temperature (temperature below which the metabolic rate is likely to increase). Thermal resistance of bedding and clothing items is measured in tog. Values for a variety of clothing and bedding items and the thermal model used was based upon that described by Ponsonby.⁸ If the thermal insulation for a healthy infant in a room at 8°C were under 7.2 tog the metabolic rate would be likely to rise in response to cold stress. Insulation of 3.8 tog would be required if the bedroom temperature were 20°C and 1.5 tog if it were 28°C. A decrease in 3.5°C in bedroom temperature requires an extra tog of thermal insulation. One blanket is the equivalent of 1.2 tog, so an extra blanket would be required for a 4°C drop in temperature. The results showed that SIDS was associated with extra thermal insulation of >2 tog above the lower critical value. Also associated with SIDS was too little thermal insulation. The interaction effect between infants sleeping prone and >2 tog extra thermal insulation was highly significant. The main conclusion of the article was that more thermal insulation than was necessary to maintain the lower critical temperature, increase the risk of SIDS primarily among infants in the prone sleep position. The authors suggest that parents should be made more aware that hyperthermia may develop during illness and that appropriate bedding and clothing may help to reduce the incidence of SIDS further. The authors also state that SIDS is also associated with too little thermal insulation and this is particularly the case when the babies are not firmly tucked in. The advice to parents to keep their babies cool must be tempered with advice to provide enough clothing and bedding for their baby to be comfortable.

¹ Wailoo MP, Peterson SA, Whittaker H et al. The thermal environment in which 3-4 month old infants sleep at home. *Arch Dis Child* 1989; 64:600-4.

² Nelson EAS, Taylor BJ, Weatherall IL. Sleeping position and infant bedding may predispose to hyperthermia and the sudden infant death syndrome. *Lancet* 1989; 1:199-201.

³ Levine MR, Flemming PJ, Azaz Y et al. Changes in breathing pattern accompanying environmental cooling in human infants (abstract). *Early Hum Dev* 1989; 19:216.

⁴ Eiser C, Town C, Tripp J. Dress and care of infants in health and illness. *Arch Dis Child* 1985; 60:465-70.

⁵ Nelson EAS, Taylor BJ. Infant clothing, bedding and room heating in an area of high postneonatal mortality. *Pediatric and Perinatal Epidemiology* 1989; 3:146-156.

⁶ Fleming PJ, Gilbert R, Azaz Y et al. Interaction between Bedding and sleeping position in the sudden infant death syndrome: a population based case-control study. *BMJ* 1990; 301:86-89.

⁷ Williams SM, Taylor BJ, Mitchell EA et al. Sudden infant death syndrome: insulation from bedding and clothing and its effect modifiers. *Int J Epidemiol* 1996; 25:366-375.

⁸ Ponsonby AL, Dwyer T, Gibbons LE et al. Thermal environment and sudden infant death syndrome: case control study. *BMJ* 1992; 304:277-283.