



Information Statement

SECOND HAND MATTRESSES

SIDS and Kids recommend babies sleep on the back and on a firm, clean, well fitting mattress that is in good condition.

To Reduce the Risk of Sudden Unexpected Deaths in Infancy (SUDI), including SIDS and Fatal Sleep Accidents

1. Sleep baby on the back from birth, **not on the tummy or side**
2. Sleep baby with face uncovered (no doonas, pillows, lambs wool, bumpers or soft toys)
3. Avoid exposing babies to tobacco smoke before birth and after
4. Provide a safe sleeping environment (safe cot, safe mattress, safe bedding)
5. Sleep baby in their own safe sleeping environment next to the parent's bed for the first six to twelve months of life

- There has been recent media attention in relation to a theory that there may be a link between SIDS and the bacteria *Staphylococcus aureus* (*S. aureus*).
- SIDS and Kids has reviewed the research to date and has found that there is no evidence to show that there is an increased risk of Sudden Infant Death Syndrome (SIDS) for babies who sleep on the back and on a firm, clean, well fitting mattress that is in good condition.

Recent media reports have been warning parents not to re-use cot mattresses in the belief that *S. aureus* in foam mattresses is the trigger behind 50% of cot deaths.¹⁻²

SIDS and Kids has reviewed the research to date and has found that there is no evidence to show that there is an increased risk of SIDS for babies who sleep on the back and on a firm, clean, well fitting mattress that is in good condition.

Sleep baby on a cot mattress that is the right size for the cot, is firm and clean and in good condition with no signs of damage. A soft mattress can increase the risk of SIDS if baby rolls over onto the tummy. Make sure there is no more than a 25mm (1 inch) gap between the mattress, the cot sides and the ends of the cot as a baby or toddler can become trapped between a poor fitting mattress and the cot sides. This is especially dangerous if their face is trapped and covered, or their neck is restricted in any way.

Remove plastic packaging from the mattress. Always make sure the waterproof mattress protector is strong and a tight fit. Never put soft bedding under the bottom sheet as this makes the sleeping surface too soft.

A pillow or cushion is not a safe mattress as they are too soft and may cover baby's face.

Summary of the research

S. aureus is a common bacteria found on the skin and in the nose and throats of healthy human beings including babies.³ It has been reported by Blackwell et al. (2002) that toxins released from *S. aureus* were identified in tissues of 53% of SIDS babies in five different countries.³⁻⁴ Although toxins were isolated in these babies it is not known whether they contributed to their deaths.

A study by Molony et al. (1999) found that laying babies on their tummy raises the airway temperature to a level required for *S. aureus* to produce harmful toxins and postulated that this could explain one reason why babies are more at risk of SIDS in the tummy position.⁴

A recent article by Jenkins and Sherburn (2005) reports that cot mattresses made from polyurethane foam and PVC covers can act as a reservoir for *S. aureus* even whilst the mattress is in storage.⁵ In a separate study these same researchers found that simulated infant movement can influence the release of bacteria from cot mattress materials.⁶ As it is normal for the airways of babies to contain *S. aureus*, it is not known how relevant this is.

An earlier study by Sherburn and Jenkins (2004) found that the frequency of isolation of *S. aureus* from cot mattress (exposed polyurethane foam) was significantly higher than from foams from the integral type i.e. completely covered by polyvinyl chloride, particularly if another child had previously used the mattress. This study also found that the prone sleeping position significantly increased bacterial population of *S. aureus*.⁷ In 2002, a study by Tappin et al. found an association between use of a used infant mattress and increased risk of SIDS, particularly if the mattress was from another home. Unfortunately this paper did not provide details of the condition of the mattresses used in the study (i.e. if the surface was torn, dirty, no longer firm etc).⁸

Summary and conclusion

S. aureus is a common organism that normally lives on the skin and in the nose and throats of healthy babies. It is therefore not surprising that *S. aureus* has been found in the foam of cot mattresses particularly if the foam is exposed and previously used by other babies.

Although there is some evidence to show that there is a higher incidence of SIDS on some second hand mattresses, it is not known what condition these mattresses were in or what position these babies slept in.

There is no evidence to show that the risk of SIDS increases for babies who sleep on their back and on a firm, clean, well fitting mattress that is in good condition.

For further information visit the SIDS and Kids website at www.sidsandkids.org or phone SIDS and Kids in your State or Territory on 1300 308 307.

References:

1. (2005) 'Cot deaths blamed on baby-bed bacteria' *The Daily Courier*, Tuesday, 6 September, p10
2. Gee S. (2005) 'Cot deaths linked to bedding superbug' *The Advertiser*, 12 September.
3. Blackwell C, Gordon A, James V, Mackenzie D, Mogensen-Buchanan M, El Ahmer O, Al Madani O, Törö K, Cuskas Z, Sótonyi P, Weir D, Busuttill A. (2002) The role of bacterial toxins in Sudden Infant Death Syndrome (SIDS) *International Journal of Medical Microbiology*. 291: 561-570.
4. Molony N, Blackwell C, Busuttill A. (1999) The effect of prone posture on nasal temperature in children in relation to induction of staphylococcal toxins implicated in sudden infant death syndrome. *FEMS Immunology and Medical Microbiology* 25: 109-113
5. Jenkins R. and Sherburn R. (2005) Growth and survival of bacteria implicated in sudden infant death syndrome on cot mattress materials. *Journal of Applied Microbiology* 99: 573-579
6. Sherburn R. and Jenkins R. (2005) Aerial release of bacteria from cot mattress materials and the sudden infant death syndrome. *Journal of Applied Microbiology* 98: 293-298
7. Sherburn R, and Jenkins R. (2004) Cot mattresses as reservoirs of potentially harmful bacteria and the sudden infant death syndrome. *FEMS Immunology and Medical Microbiology*. 42: 76-84.
8. Tappin D, Brooke H, Ecob R, and Gibson A. (2002) Used infant mattresses and sudden infant death syndrome in Scotland: case-control study. *British Medical Journal* 325: 1007-1009
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