



## Information Statement

### Second Hand Mattresses

There has been recent media attention in relation to a theory that there may be a link between sudden infant death syndrome (SIDS) and the bacteria *Staphylococcus aureus* (*S. aureus*). 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.<sup>1,2</sup>

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 their back and on a firm, clean, well fitting mattress that is in good condition.

#### To Reduce the Risks of SIDS and Fatal Sleep Accidents

1. Sleep baby on the back from birth and **not** on the tummy or side
2. Sleep baby with face uncovered
3. Avoid exposing infants to cigarette smoke before birth and after
4. Provide a safe cot, safe mattress, safe bedding and safe sleeping place

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 infants.**<sup>3</sup>

It has been reported by Blackwell *et al.* (2002) that toxins released from *Staphylococcus aureus* were identified in tissues of 53% of SIDS infants in five different countries.<sup>3,4</sup> Although toxins were isolated in these infants it is not known whether they contributed to their deaths.

A study by Molony *et al.* (1999) found that laying infants 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 infants are more at risk of SIDS in the tummy position.<sup>4</sup>

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.<sup>5</sup> In a separate study these same researchers found that simulated infant movement can influence the release of bacteria from cot mattress materials.<sup>6</sup> As it is normal for the airways of infants 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*.<sup>7</sup>

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).<sup>8</sup>

## Conclusion

*S. aureus* is a common organism that normally lives on the skin and in the nose and throats of healthy infants. 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 infants.

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.

Prior to 1990, around 500 babies died from SIDS each year. In the early 1990's SIDS and Kids introduced a health promotion campaign to inform parents about reducing the risks. Since then SIDS rates have dropped 84% saving the lives of over 4,000 babies. The dramatic fall in SIDS rates is testament to the success of the SIDS and Kids Safe Sleeping Program.

The dramatic reduction in SIDS has come about because most parents have learned to sleep babies on their backs, with their faces uncovered and by keeping them in a smoke free environment before birth and after.

The SIDS and Kids Safe Sleeping program is based on **strong scientific evidence**, has been developed in consultation with major health authorities, SIDS researchers and Paediatric experts in Australasia and overseas.

## REFERENCES

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