Where babies sleep

Rosie Dodds, senior policy adviser, reviews the evidence on sleep location and associated risks and benefits in babies aged 0-6 months.

Introduction
This article summarises the current evidence concerning different night-time sleep locations for babies in relation to Sudden Infant Death Syndrome (SIDS) and other causes and associations. It describes contemporary practices relating to baby sleeping, considers parents'/babies' preferences and concerns, and touches on the biological basis for proximity in sleep. It focuses primarily on babies aged under six months. This is the time when babies are most vulnerable and at risk of SIDS, when relationships are being established, and when babies experience rapid brain development and learning that can be influenced by the care they experience.

The article is intended to inform NCT practitioners and health professionals, and to form the basis for relevant and reliable information for parents. NCT is committed to providing parent-centred and evidence-based information to enable parents to decide on ways to care for their baby that work for them and their family.

Search process
The overview is not based on a systematic review of the literature. However, the author has identified relevant studies through the MIDIRS and NCT databases, and other searches, by including systematic and other reviews, and going back to original studies to check details in many cases. It has undergone a peer review process, and is regarded as reliable, drawing on over 50 years of NCT experience and detailed knowledge of the literature.

Background
There are a variety of locations for babies to sleep, including cots, Moses baskets, bedside cots, travel cots, slings and their parents’ bed. Young babies often fall asleep in a car seat or buggy, but these are not recommended for prolonged sleep. Most babies do not consistently sleep in one place as this varies according to the setting, time of day, age of the baby and parental activity. It is clear that no one location or even combination of places will suit all parents and babies all of the time.

The safety of sleep locations is often in the media and in parents’ minds. This is because around 300 babies in the UK die as a result of SIDS each year, as well as a small number from accidents, while sleeping or having been asleep. In some of these tragic deaths, the place and position of the baby may have been a factor, though numerous other causes and associations are identified or suggested for SIDS.

In order to reduce the risk of SIDS, advisory bodies and world governments have produced guidance for parents on safe sleep arrangements, focusing on cot sleeping and the benefits of room-sharing with their parents for babies under six months. There have also been strong prohibitions in some countries, such as the US, against bed-sharing. NCT is concerned that, because in practice many parents find bed-sharing convenient, inevitable or enjoyable, official discouragement and disapproval may be leading to:

- Parents feeling concerned about disapproval and sometimes concealing their bed-sharing from health professionals, family, friends and/or researchers
- Parents sleeping with their baby without being aware of guidelines for safe bed-sharing
- Parents and carers seeking to avoid bed-sharing, and consequently being more likely to fall asleep in an armchair or on a sofa, which is much more risky for the baby than white (8%) families to adopt regular bed-sharing. Bed-sharing is also associated with breastfeeding – 61% of breastfeeding mothers sleep with their baby at least occasionally compared with 38% of mothers using only formula milk.

Many UK parents begin the night with their young babies in a cot in their room, bringing the baby into bed for the first night feed, where they remain to feed and sleep for the remainder of the night. Bedside cots are a relatively recent innovation and the prevalence of their use has not yet been assessed.

Safety
NCT aims to provide accurate information and interpretation of evidence for parents so that they can make their own decisions, based on their family circumstances and with safety in mind. These will vary according to the age of the baby and the time of day. The main risks are SIDS and accidental death due to suffocation, for instance in pillows.

Sudden Infant Death syndrome
SIDS is the most common classification for deaths among babies aged one to 12 months in the UK and is most likely to occur between two and four months of age. Both SIDS and accidental deaths are much more common among economically deprived groups, where there may be multiple risk factors. However, associations do not necessarily denote causality. The rate is higher:

- Where families experience overcrowding and a lack of safe housing
- For premature and small-for-dates babies
- Amongst young mothers
- In families where parents smoke, use alcohol or street drugs

Considerations for sleep locations
Sleep location needs to be considered within a cultural context, and against the background of family relationships. It is apparent that factors that are linked to different sleep locations will be seen as an advantage to some parents but may be a disadvantage to others or at different times in the child’s life.

The reasons for keeping babies in the same room apply for daytime sleeps as well as night-time sleep. Some studies have pointed out that the majority of babies who die are not under parental observation/supervision. As the months pass, babies are more resilient, able to lift their head and move around, and at lower risk of suffocation or SIDS.

Cots
A cot, or crib, in the parents’ room is consistently found to be the safest place for...
Reducing the risk

Risk-reduction strategies, drawn from case control studies, include:

- Pregnant women do not smoke.\(^1\)
- Babies sleep on their back, on a firm mattress, never a pillow, sofa, chair, or other soft surface.\(^1\)
- Babies sleep in the same room as their parents.\(^1\)
- No-one smokes in the house or in the same room as the baby.\(^1\)
- Babies are not overheated. The recommended room temperature is 16-20\(^{\circ}\)C.\(^2\)

If the baby is in a cot:

- They are placed to sleep near the bottom of the cot, so blankets cannot cover their face,\(^4\) or a sleep sack keeps the baby warm.\(^13\)
- There are no bumpers and other items in the cot which may be a potential risk for suffocation or strangulation.\(^1\)
- The cot is in the parents’ room for at least the first six months.\(^1\)

If mother and baby are bed-sharing:

- Parents do not smoke at all.\(^1\)
- Parents are not affected by alcohol, or any drugs, including medication, which influence depth of sleep.\(^3,14,15\)
- The bed does not have a soft mattress.\(^1\)
- The baby cannot become buried in pillows or under a duvet and steps are taken to avoid overheating.\(^1\)
- The bed does not have gaps between wall and mattress or headboard and mattress though which a baby could slip.\(^4\)
- The bed is big enough to accommodate the baby as well as the adult(5).\(^2\)

Bed-sharing

Alcohol and illicit drugs affecting sleep have been shown in multiple studies to substantially increase the risk of unexpected death, over and above the risk associated with parental smoking.\(^10,18,19\) Sleeping on a sofa or in a chair is also associated with a greatly increased risk.\(^10,18\) In addition there is an increased risk of SIDS for bed-sharing babies who were premature or low birth weight (<2.5 kg).\(^20\)

Low rates of unexpected infant deaths in some societies in which bed-sharing is a routine cultural practice, such as Hong Kong, Chile and China\(^11,22\) as well as among Pakistani families in the UK,\(^23\) raise doubts about universal recommendations against bed-sharing. The low rates of maternal smoking and parental alcohol consumption may be a factor as well as the firm mattresses more common in these societies.\(^21\)

The preponderance of evidence is that bed-sharing for non-smoking mothers who are not affected by alcohol or drugs, and comply with other safe sleeping recommendations (see box), does not increase the risk for SIDS among full-term babies older than three months.\(^10,15\)

Bed-sharing with babies under three months

Several studies have found an increased risk of death for bed-sharing babies younger than about three months.\(^19,24,25,26\) However, few of these considered alcohol and drugs that affect the depth of sleep, making it hard to assess whether there is a real increase in risk for younger babies whose parents follow the safe-sleep practices listed above. In UK studies, most bed-sharing SIDS babies slept with parents who smoked or drank alcohol.\(^10,13,18,19\) So while many risk factors are known, estimating the size of the risk for babies of different ages, or for families in specific socio-demographic groups or adopting particular lifestyle behaviours is difficult.

Carpenter et al combined data from selected previous international studies and found an increased risk of bed-sharing for breastfed babies even in the absence of known risk factors including smoking.\(^14\) There has been criticism of the methodology of this paper as the criteria for selection of studies was not clear and imputed data was used for some variables, including alcohol consumption, which have been associated with an increased risk.\(^14\) More recently, a combined analysis of UK studies confirmed that the highest risks were for babies sleeping with their parent on a sofa, and parental drug or alcohol consumption prior to bed-sharing.\(^15\)

In addition to SIDS, for babies in an adult bed there is a risk of accidental suffocation, overheating, entrapment and falls. Babies in the first three months of life, born prematurely or with low birth weight, are at higher risk than babies aged three-to-six months, and babies over six months have a still lower risk.\(^1\)

Bedside cots

Bedside cots attach to the parents’ bed, with a removable side to provide access for the mother to the baby, for reassurance, observation, and for breastfeeding. The base can be adjusted so the baby’s mattress is at the same level as the parents’.

There are few studies of this style of co-sleeping\(^2\) though it is clearly important that the cot is securely attached to the side of the adult bed and cot safety factors are applied, such as using a firm mattress and avoiding pillows. Until such evidence is available, it’s reasonable to assume that eliminating known hazards from the sleep environment will reduce risk to the baby.

In the immediate postnatal period, studies comparing bedside to separate cot found mothers preferred using the bedside cot\(^27,28\) and women who had a caesarean section reported that the bedside cot enabled them to reach their babies and cope with breastfeeding better than those using the separate cot.\(^29\) In a subsequent RCT of bed-sharing in a hospital bed, bedside cots and separate cots on postnatal wards, babies in separate cots fed less often than the other two groups. None of the three sleep locations were associated with adverse events, although infrequent, potential risks may have occurred in the bed group.\(^29\)
A biological basis for night-time proximity?

Until relatively recently, babies generally shared the same sleeping environment with their parents and mother-baby co-sleeping is a common practice in the majority of world cultures.\textsuperscript{21,30} Observational studies in the UK and US with babies younger than five months find mother-baby dyads who regularly bed share and breastfeed tend to arouse at the same time.\textsuperscript{21} Mothers are observed to sleep on their side, curled around the baby, with their arm generally above the baby’s head and their knees drawn up, making it less likely for the baby to slip under the covers or into pillows.\textsuperscript{32,33} It is also observed that in the first few months breastfed babies who bed-share feed more frequently at night.\textsuperscript{23,34} This is noteworthy because when breastfeeding is becoming established feeds need to be frequent to maintain milk production. Perceived milk insufficiency is one of the most common reasons for stopping breastfeeding in the first few weeks.\textsuperscript{7} It is also important to note that according to a recent meta-analysis, breastfed babies have half the risk of SIDS compared with babies who are not breastfed and the effect is stronger for exclusive breastfeeding.\textsuperscript{25}

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Numerous epidemiological studies have found an association between bed-sharing and an increase in the rate and duration of breastfeeding.\textsuperscript{2,3,6,36,37} This evidence cannot determine causality. It is possible that the data reflect the tendency for women who are most likely to continue breastfeeding to also prefer to bed-share. However, sharing a sleep surface makes breastfeeding at night less disruptive, and mothers who bed-share and breastfeed may get more sleep than mothers who breastfeed but sleep separately or mothers who bottle-feed.\textsuperscript{32} To help elucidate the relationships a large, longitudinal UK study considered bed-sharing and breastfeeding over time. Some families bed-shared in the first few months of their babies’ life and later stopped. These mothers were more likely to stop breastfeeding during the time they stopped bed-sharing than mothers who continued to bed-share. In contrast, other families started to bed-share when their baby was around six months old and these mothers were more likely to continue breastfeeding than mothers who had never bed-shared or who had given up bed-sharing.\textsuperscript{35} Thus it appears likely that bed-sharing facilitates breastfeeding continuation.

Parents’ views

Mothers report using bed-sharing as a way of coping with frequent night-time feeds, and often indicate that they barely needed to wake up in order to feed the baby.\textsuperscript{7} Settling a baby who was having trouble sleeping is another common reason. Parents also say that they co-sleep for ‘enjoyment’ or to ‘increase time’ spent with their baby. This is especially the case for women who are working.\textsuperscript{7}

Culture and expectations have a strong influence on sleeping arrangements. A US survey of parents’ perspectives of their child’s sleeping location indicated that satisfaction with sleep arrangements was more likely for parents whose attitudes coincided with their actual sleep practices. Interestingly, an equal proportion (75\%) of mothers in the separate sleeping group and the bed-sharing group said they ‘slept better’ with the arrangement they had adopted, compared with other arrangements.\textsuperscript{39} Mothers (42\%) and fathers (47\%) of separate sleepers often felt that their child’s sleep arrangement was ‘important for my child’s independence’ and 42\% of mothers mentioned separate sleeping arrangements were important in order for ‘privacy with partner’, whereas these attitudes did not feature highly for bed-sharers. Mothers who were bed-sharing emphasised emotional security, physical closeness, ease of night time feeding, less stress and ‘more convenient for mother’.\textsuperscript{40}

Some parents find that they cannot settle or sleep well if the baby is in the same room, as they listen for the baby’s breathing and are disturbed by the baby’s sleep-time noises. Some parents also find that their baby is too active to share their bed, even if they wish to do this.

Conclusions

NCT takes a parent-centred approach to providing information which acknowledges the family, socio-demographic and cultural aspects of a person’s day-to-day life, and their values, rather than just biomedical information.\textsuperscript{3} This recognises that advice not to bed-share may not be acted upon by parents who value keeping their baby close. At other times it is inadvertent; 70\% of mothers in an online survey who fed their babies in bed said that they fell asleep there.\textsuperscript{41} Information on ways to improve the safety of bed-sharing is therefore needed.

Key messages:

- A cot or crib in the parents’ room is consistently found to be the safest place for babies to sleep for the first six months.
- It is rare for babies to die due to entrapment or parental overlaying but this is a possibility and parents need to know how to reduce the risks.
- Overviews of detailed cohort studies find that the risks of bed-sharing are highly correlated with social disadvantage, and are strongly associated in particular with the environmental circumstances of parents drinking alcohol, smoking, consuming drugs, or sleeping on a sofa.
- There may also be an increased risk of SIDS with bed-sharing for babies younger than about three months, even if they are not exposed to risk factors, though further research is needed to confirm or refute this.

It is clear that some parents feel sleeping alongside their baby is a necessary part of parenting, which may be for cultural reasons, to enhance the child’s security or to enable the family to get more sleep.

Bedside cots need further study but are likely to be convenient for mothers who have mobility problems, such as following caesarean section.

It is vital that parents are enabled to find their own solutions which are both as safe as possible and meet all the family’s needs for sleep.

References

2. Center on the Developing Child at Harvard University. The foundations of lifelong health are built in early childhood: Center on the Developing Child; 2010. Available from: www.developingchild.harvard.edu


