

Keeping the Cot Clear - The Research

Research has consistently emphasised the risks associated with objects and coverings in the cot environment. Items which can cover the infant's head, soft furnishings, cot bumpers, and marketed sleep accessories contribute to sudden infant deaths, often through mechanisms of suffocation, entrapment, or rebreathing. Having a clear sleep space remains central to reducing these risks.

In the 1940s, research into rising infant mortality over the previous decade attributed 85% of cases to mechanical suffocation¹. Subsequent research has refined understanding of the relationship between the sleep environment and mortality risk.

A systematic review incorporating 10 controlled observational studies, found that one-quarter of infants who died were discovered with their head covered by something present in their cot². This represented an eightfold increase in risk compared with matched controls, which is modifiable. After the "Feet to Foot" campaign in the UK in 1997 - advising parents to place their infant's feet at the foot of the cot so they couldn't wriggle under their blankets - the number of sudden infant death syndrome (SIDS) cases found with their heads covered fell significantly³.

Although the exact way in which blankets, or other items in the cot that can cover the head, contribute to SIDS is not fully understood, suggested mechanisms include hypoxia, rebreathing of exhaled carbon dioxide, or thermal stress. Cross-national investigations from New Zealand and Germany further demonstrated that head covering often preceded death, with older infants more frequently affected; this was likely reflecting their increasing motor abilities and ability to pull bedding over themselves⁴.

Epidemiological data implicate cot bumpers directly in infant mortality and morbidity. Scheers et al., drawing on U.S. Consumer Product Safety Commission databases, reported 42 deaths and 146 injuries associated with crib bumpers between 1990 and 2012⁵. Mechanisms of harm included suffocation against soft bumpers, facial adhesion to firmer plastic-coated bumpers, and entrapment by wedging between bumpers and cot surfaces. The latter risk is particularly acute where the elasticity of the material of a firm bumper creates a compressive force against the infant's head^{6,7}.

Cot and bassinet bumpers are frequently marketed as protective devices, designed to prevent minor injuries from limb entrapment or head contact with cot bars. However, research suggests that the likelihood of clinically significant injury from such mechanisms is minimal, and that bumpers introduce considerably greater risks⁷. Retail practices exacerbate these risks. Advertising commonly depicts sleep environments containing unsafe products, while manufacturers and retailers continue to market bedding and accessories lacking safety justification; this persists across all price ranges⁸.

Claims that mesh or "breathable" bumpers provide a safer alternative are not supported by empirical data. Traditional bumpers, mesh liners, and alternative mesh-fabric products, were compared in one study. This found all retained exhaled carbon dioxide, thus enabling rebreathing irrespective of permeability⁹. This demonstrates that the permeability of the material was a poor predictor of its potential for rebreathing carbon dioxide.

Beyond bumpers, other marketed sleep accessories also pose risks. Ribbons, strings, and ties attached to bedding or positioners may act as strangulation hazards^{7,10}. Infant sleep positioners, often promoted with unsubstantiated claims of SIDS prevention, have been directly implicated in suffocation events. An analysis of U.S. mortality data identified 13 deaths between 1997 and 2012



attributable to such devices¹¹. In the UK, sleep monitoring devices and other medical devices for infants must be tested and regulated by the Medicines and Healthcare Products Regulatory Agency (MHRA), and items such as cribs and mattresses must meet British Safety Standards.

References

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Frequently asked questions

What does the research show?

Research shows that objects and coverings in a baby's sleep space, such as blankets, soft furnishings, and cot bumpers, can increase the risk of SIDS. Studies have found that babies whose heads were covered faced an eightfold higher risk, and campaigns like the UK's "Feet to Foot" successfully reduced cases. Older infants may be at higher risk as they gain the ability to pull bedding over themselves.

Cot bumpers and other marketed sleep accessories can also pose other risks, such as causing injuries. Sleep positioners, ribbons, and ties attached to bedding have been implicated in suffocation events. Overall, research highlights the importance of keeping a baby's sleep space clear and following safety guidelines to reduce SIDS and injury risks.

Are waterproof mattress protectors okay for babies?

A waterproof mattress or protector is a great idea for your baby's cot, as it will help keep the mattress clean and dry and is easy to clean. A baby's needs are different to an adult's. Rather than being breathable, it's more important that a mattress is waterproof or has a fitted waterproof cover. This helps to stop bacteria building up inside the mattress so there is less risk of infection, which may increase the risk of sudden infant death syndrome (SIDS).

What is the best sleep space to buy for a baby?

While we don't recommend any specific products, there are a few simple essentials that can help you choose a sleep space:

- Make sure the cot, crib, Moses basket or travel cot has a firm, flat mattress with a waterproof cover. Avoid soft mattresses, and mattresses with any soft areas, cushioned sides or raised edges, especially around the baby's head. These products can mean the baby gets too hot or even block their breathing if their face presses against a soft area.
- Keep the cot clear of any extra items such as pillows and toys. All your baby needs is lightweight bedding, firmly tucked in no higher than their shoulders, or a baby sleeping bag.
- Also check the cot meets British safety standards – find out more in the next question.

Check that any product you're thinking of buying has passed the British safety standard for that baby sleep product. The tests for these standards include making sure it will not fall apart or easily catch fire. You should also check these if you buy or are given a cot second hand.

The safety standards you need are:

Cots and travel cots: BS EN 716-1:2017

Moses baskets and carry cots: BS EN 1466:2014 or BS EN 1466:2023

Bedside cribs: Since 2020, all bedside cribs should meet the new crib safety standard BS EN 1130:2019. Meaning cots should no longer have a side that fully drops down.

Mattresses: BS 7177:2008+A1:2011

Mattresses for cots, travel cots and cribs: BS EN 16890:2017+A1:2021

Always follow the manufacturer's instructions that come with the product.

What should my baby sleep in?

Babies should sleep in their own separate sleep space, such as a cot, crib, Moses basket or travel cot, with a firm, flat, mattress that has a waterproof cover. Avoid any raised, soft or padded sides because it's possible for the baby's face to press against them, which would block their breathing and place the baby flat on their back to keep their airways open. The safest cot is a clear cot: keep the cot clear of any items that could cover your baby's face and head, such as bumpers, toys and loose bedding. This will help keep their airways clear so they can breathe easily. Keep your baby in the same room as you for the first six months so you can keep an eye on them. Don't sleep you baby in anything that puts them in an upright seated position such as a car seat or highchair because their heads can flop forward meaning their airways aren't clear. It's OK if a baby falls asleep in a car seat while driving short distances but take them out as soon as you get to your destination and place them on a flat surface.

What is the key takeaway for families?

To reduce the risk of SIDS, the safest place for a baby to sleep is in their own clear, flat, firm separate sleep space in the same room as you. Babies need just two items in their cot:

- A firm, flat, waterproof mattress

- Lightweight bedding.

