

Swaddling - all wrapped up

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The ancient practice of infant swaddling is under scrutiny in the UK due to concern about the rising incidence of developmental dysplasia of the hips (DDH). This is the medical name for general instability or looseness of the hip joint in babies. Orthopaedic surgeons blame tight swaddling techniques for the re-emergence of a preventable cause of the problem that was resolved by public education campaigns more than twenty-five years ago. They call for increased education of parents and professionals about what is safe and what is not, when it comes to swaddling babies.

I have been asked to write for midwives about the issues related to the practice of wrapping or swaddling babies, and to support with recommendations for what to advise families. This article discusses swaddling in relation to infant development. It explores the evidence for benefits and harm, and 'wraps up' with guidelines for safe swaddling conditions in hospitals and homes. A demonstration video clip is available from:

http://www.changeforourchildren.co.nz/safe_start_programme/issues_forum

Considering development

All infant care practices must respect the needs of development and swaddling is but one. A new-born infant is not a small version of an adult. Babies emerge from the womb with loose hip ligaments to help with delivery through the pelvis, a life-protecting startle reflex, disorganised sleep patterns, loose jaw joints that make airways vulnerable and very limited capacity for self-regulation. Swaddling, if applied appropriately, is one way in which parents can support their babies through this vulnerable period, but if applied inappropriately, can lead to harm, distress or even death.

Correctly swaddled babies feel the swaddle as *firm across their shoulders yet loose around the hips*. The firmness across the shoulders creates the feeling of being held, an essential condition for effective settling and comforting of babies. A baby's arms are best bent at the elbow, with hands centred on the chest where they are easy for a baby to find should they need to suck, explore the face area or bring their arms out to help with cooling. In this position of the arms, the important startle reflex can still happen within the hold of the swaddle.

The swaddle or wrap needs to be firm enough so as not to come loose and cover a baby's face and head, yet loose enough across the hips so that babies can bend and spread their legs freely. The firmness of the swaddle across a baby's chest must also be such that a baby can make breathing movements against it.

These are key developmental considerations when swaddling young babies.

Benefits and harms of swaddling

Swaddling has documented benefits and harms^{1,2}. When performed correctly, it reduces crying³, improves sleep and shortens periods of distress. These are not trivial benefits for they

mitigate against the very real public health concerns that flow from colicky crying and maternal fatigue. Swaddled babies are more likely to sleep on their backs⁴ which makes swaddling a positive strategy for parents who have difficulty settling babies on the back without it. If misapplied, swaddling can suppress arousal⁵, increase the risk of SUDI, cause hip dysplasia and lead to overheating. How people swaddle makes it a safe or unsafe practice.

Better infant sleep and healthy infant arousal seem to work against each other when it comes to preventing sudden infant death. Yet helping babies settle and sleep is a driving concern for parents. Coroners' reports too often describe parents resorting to unsafe practices in order to achieve this. If parents choose to swaddle their babies what is paramount to protection from SUDI is that their baby also sleeps on the back and with a clear face that will stay clear throughout the sleep period. The protective effect of face-up sleeping on healthy arousal appears to override the risk effect of swaddling, in relation to prevention from sudden infant death.

If swaddling leads to a change in position for babies (that is, they are no longer on the back) or a covered face, it becomes dangerous. More specifically, if the swaddling material is bulky and leads to overheating, the wrapping too loose and covers the face, or too tight and the baby cannot breathe against the tightness; if the swaddle is undersized and can easily come loose; if the baby is swaddled and on the side, front or propped on pillows; if the bed is sloping or mattress tipping; if the baby is also already more vulnerable e.g. due to smoking in pregnancy, or is not used to being swaddled; if the baby is still swaddled at a stage in their development where they can get into situations but not out of them - then these factors, in isolation or in combination, can make swaddling dangerous.

Swaddling Methods

Swaddling products can be traditional muslin squares, lightweight blankets or specialised shaped products with their own wrapping instructions. Two general swaddling methods are promoted:

- Non-recommended '**wooden soldier**' method where babies' legs are forcibly straightened by tight swaddling such that babies cannot exercise their weakened hip joints and there is an increased risk of looseness or dislocation. Usually the arms are also pinned to their side giving babies no ability to use their hands for sucking, cooling or adjusting position should they roll.
- Recommended '**flexible frog**' method where babies have room to bend their legs up and can spread them apart, that is, their hips are safely flexed and abducted as was their position in the womb. The wrap is firm across both shoulders and the bottom edge is brought up to secure the wrap across the baby's chest. This position encourages safe development of the hips and ensures a clear face and firm hold. Arms are positioned as described above, bent with hands centred under the chin.

Guidelines for safe swaddling conditions

Swaddling is optional. It is optional as a practice in new-born facilities and it is optional for parents at home. If it is practiced in hospitals it is likely to influence how parents may swaddle their babies at home so swaddling needs to be part of a safe sleep policy and strategy for that facility to ensure a safe method is being promoted. A secure swaddle means a baby stays wrapped, feels held and can easily move their hip joints. Below are the safety conditions to consider in your advice to parents:

- Position Always place swaddled babies on their backs and never on their sides, fronts or propped on pillows.
- Material Use a light weight swaddling material that is large enough to achieve a secure wrap (e.g. 120 cm x 120 cm if using a traditional muslin square). If blankets, merino, or heavier materials are used these should be regarded as bedding.
- Method Use the 'flexible frog' method, whether the swaddle is a specialised product, light weight blanket or traditional muslin square.
- Location Swaddle only if babies sleep in their own baby beds and never if bed sharing
- Duration Stop swaddling when a baby attempts to roll over, or use arms free wrapping methods from this point (usually at around 6-8 weeks).
- Demo A demonstration of the 'flexible frog' swaddling method is available from http://www.changeforourchildren.co.nz/safe_start_programme/issues_forum

References

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