SUDDEN INFANT DEATH SYNDROME

Results of the interdisciplinary expert meeting

on

SIDS precaution measures

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Introduction

The number of SIDS cases in Austria increased considerably in 2005. Experts suspect that after several years a certain kind of "weariness of prevention" has led to a change in the downward trend of SIDS mortality. Only by strictly following the recommendations for prevention can the SIDS risk be reduced.
This was the reason that Austrian experts from different fields met to formulate an up-to-date guidance manual for risk reduction. The most important new addition to the prevention measures is the official recommendation to use pacifiers for falling asleep.
This recommendation also emphasizes the fact that pacifiers and breastfeeding are not inconsistent with each other, but can reasonably complement each other in SIDS prevention.
To guarantee the correct use of pacifiers the new expert recommendation also includes an "instruction manual" and selection criteria.

All recommendations given refer to normally developed and term-born children.

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Participants of the interdisciplinary expert meetings, May 2006

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1. SIDS precaution measurements

1.1. Sleeping position

Only the supine sleeping position is recommended.
Contrary to the opinion prevailing in the 1980s the prone position is an important risk factor for Sudden Infant Death and must therefore be avoided. The supine position does not lead to a higher risk of aspiration of vomit than any other sleeping position.

Sleeping on the side is no longer recommended. In this unstable sleeping position the baby may easily change to the prone position and it may also cause hip dysplasia.

In waking phases, however, babies should be placed in the prone position under direct supervision in order to train breathing in the prone position and to avoid a flat back of the head. When the baby gets tired, it should again be placed in the supine position (note: children with very good body-tension are in general less in danger of not being able to breathe in the prone position than “weak” babies. Mature (term) babies do not rest on their tummies with their whole body weight, because they pull up their legs. They are also able to move their head from side to side from the beginning in order to breathe freely.).

In order to prevent a one-sided sleeping position that can lead to a deformation of the back of the head, babies can be placed alternately on the head or foot of the bed.

As soon as children are able to turn themselves onto their tummies when sleeping, it is no longer required to return them to the supine position. When first falling asleep, however, they should be placed on their backs. In addition all other preventive measures should be followed.

1.2. Mattresses, etc.

Mattress
Hard, if possible air-permeable mattresses, in good condition are recommended (also used mattresses in good condition are possible).

Mattress protection
Moleton sheets or air-permeable flannel sheets are recommended as a protection between sheet and mattress. Rubber or plastic sheets should be avoided – they prevent ventilation and cause overheating. The mattress should be turned over and therefore aired regularly (with each bed-linen change).

Cot
Baby beds should have duckboards – boards with holes are not suitable, as they trap heat and cause overheating. If parents are afraid of their child suffocating from vomit, the baby bed can be put in an inclined position during the first three months of life (e.g. stable wooden blocks underneath the legs at the head of the bed. On no account should objects be put underneath the mattress!). In the first weeks of life babies often vomit – but they should nevertheless sleep on their back. The risk of suffocation in the prone position is many times higher.

Lambskin
Lambskin should not be used as a bedding or in a baby’s sleeping environment. If the child is awake and under supervision or in the pram, lamb-skins can be used. A linen diaper should be placed between the baby’s head and the lambskin so that the baby does not inhale hairs.

Miscellaneous
Linen diapers, breastfeeding pillows or similar items should not on any account be put over the baby’s head to make the baby feel safe and secure. Maturely born babies should have nothing on their heads. Even at the beginning it is not necessary to cover their heads in closed rooms.

1.3. Clothing

Many parents want to put too many clothes on their baby or to wrap it up warmly. But overheating is a decisive risk factor for Sudden Infant Death. Parents can be assured that mature babies will wake up if they feel very cold. After the first days of life the parents’ own reaction to the temperature is also a good indicator for the baby – in general the baby does not need to wear more clothes than the parents in the same environment.

1.4. Body temperature

A baby’s body temperature may be checked by simply putting one’s hands on its neck. If a baby seems lukewarm, it will be sufficiently dressed or wrapped up. Cool hands do not indicate that the baby is too cold. A sweating baby is not in a good condition. Particularly for newborns, sweating is very exhausting – especially babies with fever should be kept in cool conditions.

1.5. Bed linen

Only baby sleeping bags are recommended. Covers and pillows should not be used.
To guarantee baby's safety the size has to be adapted to baby's age. The material should be chosen in accordance with room temperature (summer and winter sleeping bags).

Sleeping bags cannot slide over the face and provide a constant temperature. In addition, it is more difficult for babies in a sleeping bag to turn themselves into the prone position. Sleeping prone can therefore be delayed for a further 1-2 months. Sleeping bags are not to be attached to the cot – the risk of strangulation would be too high. A baby-sleeping bag keeps the baby nice and warm – therefore light clothes like a body stocking or thin pyjamas are sufficient. Socks and other clothes are not necessary. Pillows must not be used.

1.6. Fluffy animals

Fluffy animals do not belong into the cot. Baby nests around cot bars are also dangerous and a risk factor for Sudden Infant Death. Fluffy animals and baby nests may prevent the baby from breathing freely. Rebreathing of the exhaled air into nests, pillows and fluffy animals can be dangerous due to an increase in carbon dioxide.

1.7. Surroundings/room temperature

The ideal room temperature in the bedroom is between 18 and 20 centigrade. The higher the environment temperature the less clothes the child should wear and the thinner the sleeping bag should be. The cot should not be placed in front of a radiator or a window.

The baby should sleep near its parents, if possible in the parents' bedroom, but in its own bed. Body contact should mainly be made during the waking phases.

Sleeping in the parents' bed is not recommended because of the risk of overheating. Particularly if one of the parents has consumed alcohol or nicotine this should in any case be avoided. Co-sleeping after alcohol or nicotine consumption is an additional risk factor.

1.8. Avoidance of stress

Babies should not be left alone! Stress caused by being alone, unrest and emotional tensions in the family is a risk factor. Babies need tender love and care, nearness of their next of kin and regular sleeping times.

1.9. Breastfeeding

Ideally babies should be exclusively breastfed in their first six months of life. The advantage of breast milk is a combination of optimum nutrition, allergy prevention and the development of a good mother-child relationship. Correct breastfeeding has to be learnt. Pregnant women are therefore recommended to prepare themselves for breastfeeding before the birth (preparation courses offered by midwives or lactation consultants). A good breastfeeding relationship might be further established by advice and support during the confinement and by a visit of a breastfeeding group.

If a baby is not breastfed, formula milk should be chosen according to age and there should be sufficient body contact. When bottle feeding, babies should be held as if they were breastfed to enable as much body and eye contact with their mothers as possible.

1.10. Smoking during pregnancy

Smoking during pregnancy has a negative effect on the child's health. Passive smoking during pregnancy is also harmful for the baby's development and must therefore be avoided. Every cigarette not consumed by mother and child (actively and passively) reduces the risk of Sudden Infant Death. Newborns who were exposed to nicotine during pregnancy are very often immature and have a lower birth weight.
The social contacts of a pregnant mother have to take the health of mother and baby into account and must not smoke in their presence or environment.

1.11. Smoking in the child's environment

Nobody must smoke in the baby's sleeping environment. Children in smoking families have a much higher risk of dying of Sudden Infant Death than children in non-smoking households.
Also "bringing" nicotine into the baby's environment (in clothes or parents' hair) constitutes a higher risk.
An absolutely smoke-free environment is best for the child's health. When taking the child outside, the environment should also be smoke-free (cafés, grandparents, etc.). Children exposed to nicotine are many times more at risk to suffer from airway infections, asthma, etc.

1.12. NEW: pacifiers when falling asleep

Recent research shows that the risk of SIDS is significantly reduced when giving a pacifier for falling asleep. If parents decide to use a pacifier, they should give their babies an orthodontic pacifier suitable for their age every time they put them to sleep. Pacifiers should, however, only be used after breastfeeding is fully established. This is usually at the latest at the end of the first month of life.

2. Risk assessment

If parents are worried, they should contact their pediatrician, a SIDS outpatients' department or a family support centre. General information material is never a substitute for personal talks with a specialist.

In some counties of Austria, questionnaires are handed out to new mothers after birth for assessing the SIDS risk. These questionnaires guarantee that parents are aware of the subject "Sudden Infant Death" and they will be referred to the right specialists, if necessary.

Sleep laboratory
It is not possible to determine the individual risk of SIDS fully reliably with an examination in a sleep laboratory. Examinations in sleep laboratories should only be done after being referred to them by a doctor (e.g. after long apnoeas or when lack of oxygen is suspected). The numerous SIDS outpatients' departments in Austrian pediatric hospitals are always available for advice and support.

Home monitors
Appliances for use at home (home monitors) for supervising a baby are not suitable as a general SIDS prevention. Cheap monitors available in the general market often cause parents to panic, which might lead to a pathological parental-child relationship. Home monitoring should not be done if the parents are not fully informed about correct intervention measures (e.g. resuscitating of babies).

Home monitors must only be used in special cases and with a doctor's prescription.

3. SIDS risk groups

- Premature babies after a complicated pregnancy
- Babies with low birth weight
- Babies with complications during the premature period
- Babies who were exposed to nicotine, alcohol and drugs during pregnancy
- Babies with previous near-fatalities o r occurrences of lifelessness
- Babies with a family history of Sudden Infant Death

Children with a higher SIDS risk

- Children from families with many children
- Children from socially disadvantaged families
- Children of mothers who did not have all the required examinations during pregnancy and/or did not have sufficient medical supervision during pregnancy
- Children of mothers under the age of 20 years

4. Basic information for the use of padifiers

4.1. Breastfeeding problems

Many newborn babies have a strong need for sucking, which cannot always be satisfied by feeding. Incorrect and too frequent breastfeeding can lead to sMany newborn babies have a strong need for sucking, which cannot always be satisfied by feeding. Incorrect and too frequent breastfeeding can lead to sore breast nipples and, as a consequence, to pain, inflammations and reduction in milk flow.
During the first days of life the baby should be put to the breast frequently (8 to 12 times in 24 hours) to stimulate and maintain milk production.
Pacifiers should only be given after breastfeeding has been fully established.
The baby should be breastfed on demand so that milk production can adapt to the baby's need. Many babies drink several times in a row and then keep longer resting phases, in which they can digest and the breast can produce milk.

For the baby's dental health it is recommended to reduce night feedings from the sixth month of life onward and/or as soon as the baby has teeth and to particularly avoid permanent sucking on bottles containing sweet teas or other beverages.

Pacifiers should not be used to postpone breastfeeding sessions or to change the breastfeeding routine.

The frequently mentioned nipple confusion does not exist as often as publicised. It may occur after difficult births, after which the newborns are in general "confused", i.e. not yet fully adapted to their new life outside the womb.
Very often the difficult birth is due to an inclined intrauterine position (e.g. position-induced torticollis).
For a healthy newborn, drinking alternately from the breast and the bottle is no problem. Even premature babies often are able to breastfeed fully after tube and bottle feeding.

The pacifier should be seen as a means of support and not as competition for breastfeeding!

4.2. Tooth problems

A correctly used – i.e. only for falling asleep and in short intervals –orthodontic pacifier suitable for the age of the baby should cause no deformation of teeth or jaws.

Timely weaning from the pacifier is also important. At the latest at the third birthday children should have completely stopped the pacifier. If before the third year of life parents or a dentist notice that position of their child's teeth changes in the front (open bite), the pacifier has to be weaned off as soon as possible. In this case an open bite can correct itself. If this is not the case, this might result in tongue malfunctions, speech problems and also in a so-called cross-bite (the upper jaw becomes too narrow), which does not regulate itself. Under very unfortunate conditions these problems might be carried forward to the permanent teeth and result in long and complicated orthodontic and speech-therapy treatments. If parents notice a deformation of the jaw, they should visit a dentist. For dental health it is in generally recommended to pay regular visits (minimum 2 x per year) to a dentist from the 18th month of life onward.

4.3. Acute otitis media

Permanent sucking on a pacifier may lead to an increased occurrence of AOM (acute otitis media). However, when following the recommendations for pacifiers (i.e. use only if required) there is no danger of pacifiers causing acute otitis media.

When children suffer from pain, pacifiers help to comfort them. This also means that pacifiers are more often given to children in pain rather than pacifiers cause the pain. Research studies on pacifiers and AOM did not question whether mothers gave their babies pacifiers because they already had pain.

4.4. Advantages of pacifier use

Newborns have a strong need to suck. Sometimes this is not satisfied by feeding alone. Many mothers, also those who fully breastfeed, like to use a pacifier for comfort.
A combination of breastfeeding and pacifiers may help to increase the duration of breastfeeding, because mothers do not immediately satisfy their babies' nonnutritive sucking needs by breastfeeding them. This gives the breast a rest and the sucking need is satisfied.

4.5. Pacifiers vs. thumbs

If babies with a very strong sucking need do not receive a pacifier, they very often will substitute it with the thumb. A pacifier can be removed, weaning off a thumb is usually more difficult and takes longer.

Thumb sucking has an extremely negative effect on the baby's jaw development, thumb suckers are also more prone to bad teeth. Children who suck the thumb normally do that for a longer time than pacifier users. 70% of thumb suckers continue the habit after their third year of life. In comparison, only 30 percent of pacifier users have not been fully weaned off by their third birthday.

5. Selection criteria for suitable pacifiers

5.1. Material

- The material of the nipple should be as soft as possible so that the pacifier can perfectly adapt to the individual mouth shape of each baby.
- Pacifiers have to be in conformity with the European Safety Standard EN 1400. This is guaranteed by a reference to the Standard on the pacifier package.
- Both latex and silicone are suitable from the beginning. Latex pacifiers corresponding to the Standard cannot cause a latex allergy in healthy children, but extremely allergic babies might have a reaction.

5.2. Nipple shape

Orthodontic – symmetric – not preshaped

- Pacifiers should have an orthodontic, symmetric and therefore not pre-shaped nipple to adapt to the special conditions of each mouth. Symmetric pacifiers guarantee that they cannot be put into the mouth upside-down. If asymmetrically shaped nipples are put into the mouth the wrong way, this may negatively affect the child's dental health.
- No cherry-shaped pacifiers (round nipple) must be used, as they cause tooth and jaw malformations. Cherry-shaped pacifiers are not orthodontic.

5.3. Size

- A pacifier has to suit the size of the baby's mouth to prevent tooth and jaw malformations.
- The child's jaw grows enormously in the first months of life. Suitable pacifiers do not have any negative effects on the child's physical development.

  Parents can follow the manufacturer's age recommendations. There are suitable pacifiers for all mouth sizes (up to the third year of age).
- Too small pacifiers have less negative effects on the child's development than ones that are too large. Therefore a larger size should only be used after the child has reached the right age.

5.4. Shield

- A pacifier shield should be anatomically shaped.
- The shield should adapt to the child's mouth shape to avoid tooth malformations.
- When sucking on an anatomically shaped pacifier the shield exerts pressure on the teeth over the lips and therefore prevents pushing them too far forward.

5.5. Ventilation holes, skin

- Big ventilation holes enable the baby to breathe even if the pacifier is put into the mouth as a whole. The Standard EN 1400 guarantees that all parameters are followed to exclude as best as possible the risk of suffocating with a pacifier. Big ventilation holes in the pacifier shield offer sufficient air ventilation of the skin. Saliva can dry – skin irritation is avoided.

5.6. Knob

- A flat knob prevents the baby pulling out the pacifier by chance.
- It is not possible to attach linen diapers or strings to knobs. Therefore there is no danger of the baby getting strangulated on attached strings or linen diapers. Only special pacifier leashes must be used to attach pacifiers. The short length of these pacifier leashes prevents strangulation.
- Even smaller children can easily grip knobs.

6. Pacifier hygiene

- Boil pacifiers for five minutes before first use
- Read manufacturer's cleaning instructions (package)
- Clean pacifier before each use and check for possible damage. Strongly pull the nipple to immediately notice possible damage.
- Never expose pacifiers to direct sun light.
- Parents (or other persons apart from the baby) must not put pacifiers into their mouth. This transmits infectious diseases, fungi and most of all caries. Caries is an infectious disease, i.e. not hereditary, but contagious.

6.1. Replacing of pacifiers

- Pacifiers have to be replaced immediately, if
  - o they do not suit the baby's age/size any longer,
  - o they are damaged or defective.
- For hygienic reasons pacifiers should be replaced at the latest after two months use.

Pacifiers which are not replaced in time might change their shape or obtain a different taste. Frequently new pacifiers with the original orthodontic shape and a neutral taste are then not accepted by the baby.

7. Correct pacifier use

7.1. Motive

- From the beginning parents should take care to only offer a pacifier when necessary (for relaxing, calming or comforting) and never offer it without cause.
- Pacifiers help babies to relax.
- Pacifiers satisfy the often very strong need for non-nutritive sucking.

- From the point of view of developmental psychology infants learn to comfort themselves by using a pacifier, therefore to control their own feelings. This is the first step to independence. The pacifier offers children security.

- Sometimes the need for sucking is so strong in babies that they would like to use a pacifier for nearly the whole day. Nevertheless a pacifier should be used with discretion.

7.2. Frequency/duration

- In the first year of life pacifiers should be given as a SIDS prevention every time when putting the baby to sleep.
- Infants should not have the pacifier in their mouth permanently in order to learn to speak properly.
- When a child “loses” the pacifier after having fallen asleep or after it has been calmed down or comforted, the pacifier should be removed.
- To prevent infants from using a pacifier more frequently than necessary, their parents should not leave pacifiers lying around in close vicinity to the child.

7.3. Age of weaning off

- Children should be weaned off the pacifier within their third year of life (up to their third birthday).
- Before that, pacifier use should be reduced step by step.

7.4. Opportunities for weaning off

- Restrict pacifier use to certain places (only in bed before falling asleep, etc.)
- Discontinue giving the pacifier at a special occasion – offer a reward to the child
- Use the child’s self-esteem (“you are such a big kid – you do not need a pacifier any longer”).
- Use children’s books and stories for weaning off
- Let children take an active part in the process
- Mouth templates are available at the dentist and might help to wean off the pacifier.

All recommendations made apply to normally developed and term-born children.

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