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EDUCATION AND RESEARCH UPDATE



sids
SUDDEN INFANT DEATH SERVICES
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AAP REVISES SIDS RISK REDUCTION RECOMMENDATIONS

WASHINGTON, DC -Despite major decreases in the incidence of Sudden Infant Death Syndrome (SIDS) over the past decade, SIDS is still responsible for more infant deaths beyond the newborn period in the United States than any other cause of death during infancy. In an updated policy statement on "The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleeping Environment, and New Variables to Consider in Reducing Risk," The American Academy of Pediatrics (AAP) addresses several issues that have become relevant since they last published a statement in 2000.

The AAP no longer recognizes side sleeping as a reasonable alternative to fully supine (lying on back) sleeping. Studies have found that the side sleep position is unstable and increases the chances of the infant rolling onto his or her stomach. Every caregiver should use the back sleep position during every sleep period.

Bed sharing is not recommended during sleep. Infants may be brought into bed for nursing or comforting, but should be returned to their own crib or bassinet when the parent is ready to return to sleep. However, there is growing evidence that room sharing (infant sleeping in a crib in parent's bedroom) is associated with a reduced risk of SIDS. The AAP recommends a separate but proximate sleeping environment.

Research now indicates an association between pacifier use and a reduced risk of SIDS, which is why the revised statement recommends the use of pacifiers at nap time and bedtime throughout the first year of life. The evidence that pacifier use inhibits breastfeeding or causes later dental complications is not compelling enough to discredit the recommendation. However, it is recommended that pacifier introduction for breastfed infants be delayed until one month of age to ensure that breastfeeding is firmly established. In addition, if the infant refuses the pacifier, it should not be forced. There is a slight increased risk of ear infections associated with pacifier use, but the incidence of ear infection is generally lower in the first year of life, especially the first six months, when the risk of SIDS is the highest.

The following have been consistently identified as risk factors for SIDS: prone (lying on stomach) sleep position, sleeping on a soft surface, maternal smoking during pregnancy, overheating, late or no prenatal care, young maternal age, preterm birth and/or low birth weight and male gender. Consistently higher rates of SIDS are found in African American and American Indian/Alaska Native children - two to three times the national average.

The policy recommendations include:

- Back to Sleep: Infants should be placed for sleep in a supine (wholly on back position) for every sleep.
- Use a firm sleep surface: A firm crib mattress, covered by a fitted sheet, is the recommended sleeping surface.
- Keep soft objects and loose bedding out of the crib: Pillows, quilts, comforters, sheepskins, stuffed toys and other soft objects should be kept out of an infant's sleeping environment. (Editor's Note - that includes bumpers)
- Do not smoke during pregnancy: Also avoiding an infant's exposure to second-hand smoke is advisable for numerous reasons in addition to SIDS risk.
- A separate but proximate sleeping environment is recommended such as a separate crib in the parent's bedroom. Bed sharing during sleep is not recommended.
- Consider offering a pacifier at nap time and bedtime: The pacifier should be used when placing infant down for sleep and not be reinserted once the infant falls asleep.
- Avoid overheating: The infant should be lightly clothed for sleep, and the bedroom temperature should be kept comfortable for a lightly clothed adult.
- Avoid commercial devices marketed to reduce the risk of SIDS: Although various devices have been developed to maintain sleep position or reduce the risk of rebreathing, none have been tested sufficiently to show efficacy or safety.
- Do not use home monitors as a strategy to

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SIDS OF ILLINOIS, INC.
710 E. OGDEN AVE.
SUITE 550
NAPERVILLE, IL 60563
800-432-SIDS
630-305-7300

www.sidsillinois.org

For more information on any of our articles, contact the SIDS of Illinois office at 630-305-7300 or email nancy@sidsillinois.org

SLEEP POSITIONERS FOR BABIES

Making a crib safe for a new baby is essential. In stores, you'll see cribs outfitted with plush bumpers, fluffy blankets, and toys. You'll also see sleep positioners made out of foam, which are supposed to help babies sleep on their backs. But pediatricians, child safety experts, and Consumers Union, the nonprofit publisher of Consumer Reports, all caution against putting anything cushioned in a crib because soft materials could close off the child's air passages, causing suffocation. Consumer Reports believes that parents are being given the wrong message by store displays.

The Consumer Product Safety Commission (CPSC) advises parents and caregivers to remove all "pillow-like soft products" from cribs, while The American Academy of Pediatrics (AAP) advises that "soft objects, such as pillows, quilts, comforters, sheepskins, stuffed toys, and other gas-trapping objects should be kept out of an infant's sleeping environment." More specifically, the AAP advises that "Although various devices have been developed to maintain sleep position or to reduce the risk of rebreathing, such devices are not recommended, because none have been tested sufficiently to show efficacy or safety." (See our March 2005 crib safety report that explains why a trade group is departing from CPSC recommendations.)

While the cause of infant death can be difficult to determine, our reporters found documentation of at least one death attributed by a New York City medical examiner to be caused by asphyxia by obstruction of nose and mouth by a foam positioning device. "Our advice is to keep the crib bare," says R. David Pittle, Consumers Union's former senior vice president for technical policy. "The only thing that should be in a crib is a sheet, a mattress, a child, and a blanket."

STABLE PREVALENCE BUT CHANGING RISK FACTOR FOR SUDDEN INFANT DEATH SYNDROME IN CHILD CARE SETTINGS

Moon, RY, et al. 2001 PEDIATRICS Vol. 116 No. 4 October 2005, pp. 972-977

The authors report that a total of 20% of sudden infant death syndrome (SIDS) cases in the 1990's occurred in child care settings. They conclude that this percent is much higher than the 8% expected from Census Bureau data. The authors set out to determine the proportion of SIDS occurring in child care in 2001 and to assess risk factors for SIDS in child care.

They conducted a retrospective review of all SIDS deaths that occurred in 2001 in 13 US states. Deaths that occurred in child care were compared with deaths that occurred during parental care.

The authors found that of 480 deaths, 79 (16.5%) occurred in child care settings. Of these child care deaths, 36.7% occurred in family child care homes, 17.7% occurred in child care centers, 21.3% occurred in relative care, and 17.7% occurred with a nanny/babysitter at home. Infants in child care were more likely to be older and to die between the hours of 8 AM and 4 PM and less likely to be exposed to secondhand smoke. There was no difference in usual, found, or placed sleep position between child care and home deaths. Approximately one half of the infants who died of SIDS in both settings were found prone, and 20% of deaths in both settings were among infants who were unaccustomed to prone sleep.

The authors conclude that the proportion of SIDS deaths in child care has declined slightly but still remains high at 16.5%. Infants in child care are no more likely to be placed or found prone and no more likely to be on an unsafe sleep surface. The authors suggest that educational efforts with child care providers have been effective and should be expanded to unregulated child care providers.

NEW STUDY ON ELEVATED LEVELS OF TESTOSTERONE IN SIDS BABIES

(The Journal of Pediatrics, November 2005; 147; p. 586-591)

A recent study done by Michael J. Emery, Ph.D., of the University of Washington showed that a significantly higher level of testosterone was the primary difference between babies, both male and female, who died of confirmed sudden infant death syndrome (SIDS) and infants who died of other known causes.

This was the finding from blood tests done from 127 SIDS autopsies and 42 controls. The testing showed that the male SIDS babies had testosterone levels that were significantly higher than the male controls. Among the females, the SIDS babies also showed significantly higher testosterone levels compared with non-SIDS female infants. They said the increased testosterone among the female SIDS babies was particularly surprising.

"Further research is needed to determine whether testosterone is abnormal in living infants at risk for SIDS and to determine the value of monitoring testosterone or related hormones to identify those infants at increased risk for SIDS," the investigators said.

The males had testosterone levels that were 120% higher than male controls and the females had testosterone levels that were 50% higher than female controls.

"The very high testosterone levels found in some male SIDS infants were comparable to the highest levels reported for living male infants (those born preterm), and for females the very high testosterone levels were more than twice any previously reported for living female infants," the authors wrote.

The authors pointed to earlier evidence from animal models and human studies suggesting elevated testosterone levels may be linked to depressed breathing during sleep.

"These findings could help explain a potential mechanism to a condition with no known biological cause," they added. The authors also noted there is "a striking coincidence" between postnatal rises in the sex hormones and the age range of risk for SIDS, with both peaking between one and five months of age.

Among the SIDS cases, 42% of the males died during the night compared with 57% of the SIDS females. Among the controls, 50% of the males and 71% of the females died during the night.

Postnatal increases in testosterone concentrations "could produce changes in otherwise normal infants," the research team concluded.

Researchers have been looking for a way to possibly screen which children could be at risk. However, it's questionable whether blood samples measuring testosterone levels from live infants would be an effective screening method, Dr. Emery and colleagues said. There was some overlap in serum testosterone levels between the two groups, suggesting that "a single serum sample would fail to identify most infants at potentially increased risk for SIDS," the authors wrote.

This was a small study sample and more research is needed on this subject. Parents should understand that at this point, there is no evidence that high testosterone causes SIDS. Also, there is no indication that parent's should have their infants tested.

SAFE SLEEP FOR THE ROLLING INFANT

Pat Tackitt, Wayne County - CDRT Coordinator, MPHI - Keeping Kids Alive Program



In doing infant death investigations and scene re-enactments - we have seen a number of infants roll to prone or who were placed prone for sleep - with a chest or head cold/ or other illness. While I certainly endorse that a baby be allowed to roll to prone in their sleep, as part of normal growth and development, I also believe an infant with an illness or cold is at a much higher risk for an asphyxial event when they roll prone during their sleep or while awake & unsupervised. Because of this increased risk / or acute risk - I would like to see us consider the following:

1) Even if infants can roll in both directions - remind & encourage families to CONTINUE TO PUT BABY TO SLEEP on their back, in a crib - every time baby is put down for sleep.

Make sure the mattress is very firm, covered with tight fitted sheet - ONLY, NO MATTRESS PAD IS NEEDED. We are finding thick mattress pads & plastic sheets - present under the fitted sheet - at a number of infant death scenes. This added thickness & softness may increase risks for infants rolling prone in their sleep / or while awake.

2) Even if infants can roll in both directions - IF they have a cold or are ill - once they are asleep & settled, reposition them to supine for sleep.

3) IF the baby is ill or has a cold, encourage the family to bring the baby's crib right next to the parent's bed - even after baby reaches 6 months of age and even if they are not nursing their baby. It will give them many more opportunities to easily check on the baby's position. And personally - I would do this for a full two weeks after the cold seems to be over, based on what we've seen at infant death scenes.

4) Although we are not asking parents to stay awake all night and keep repositioning their baby - if their baby is ill or has a cold - I would strongly encourage them to RE-POSITION THE BABY TO SUPINE when the caregiver HAPPENS to awaken during the night, or they are up to the bathroom, etc. Use bulb syringe in baby's nostrils - if nasal discharge may be obstructing either nostril.

5) Use any visit for illness, ER Visit, or urgent care appointment to re-enforce the entire safe sleep message with parents. Risks are even higher when baby is ill. Review the baby's sleeping arrangements with the parents.

Show a photo of what it looks like to have a baby on its back, in a crib, with nothing in the crib but the baby. Ask if their baby's bed looks like this. If not - ask that they make it safer by reducing the risks present in the baby's sleep / wake environments. Show a photo of an unsafe environment - point out the things that are unsafe and what risks they represent. (We had a 10 month old with a cold die - while supine, in a crib with 28 items in it - including 2 adult blankets and pillows)

6) During sick or well visits - always re-enforce the Tummy Time message.

Tummy Time with direct visual supervision by an awake / alert

caregiver - several times a day. We just had a death of a twin - where mom left twins awake and prone for 10 minutes of tummy time and found one twin face straight down - asphyxiated - upon her return to the room. This twin was well. But ill infants - awake or asleep - may be at much higher risk when prone and unaccustomed tummy sleepers.

Some cold meds may make baby drowsier - altering their sleep state and may influence their ability to turn their head FULLY to the side, awake or asleep, to be able to keep both their nostrils unobstructed when they are prone.

We recently had an infant death where baby was supine in bassinet after cold meds were given. Baby rolled prone and ended up with his nose pressed into his wrist - positioned slightly above and to the side of his head. This resulted in the baby's one nostril being totally obstructed. Mom was able to recall the baby's nose being smushed totally closed on one side (as she called it) when she found the baby unresponsive and the immediate lividity pattern confirmed it. Maybe the bulb syringe is a good choice to clear the nostril - rather than a cold med - in the age group where baby can now roll prone but still has poor upper body strength & experience in the prone position.

7) Remember car seats are not cribs. Encouraging parents to sleep the baby in a car seat at home because the baby is ill or rolling prone during sleep - presents additional unique risks for sudden death - to an unsupervised infant. If you tell a family to keep the ill baby's head raised during sleep - be specific with the family on what you're asking them to do.

After providers have told families to keep the baby's head raised slightly - we've seen parents prop baby with pillows, blankets, towels, and foam - inside the crib itself, adding significant opportunity for baby to asphyxiate with its face in soft bedding. We've had babies turn over and end up face down in the car seat - face into the side of the car seat or bottom of the car seat's fabric. One baby was asleep - the other awake - for these asphyxial events where their airway was obstructed.

8) Encourage young babies nap in a portable crib - near an alert caregiver, or where they can easily check on them often - when baby's have learned to roll prone, and particularly when the baby is ill.

While we can't keep 5 month olds from turning over in their sleep / or when awake and unsupervised - we can do these things to reduce their risks when they do turn prone at this vulnerable age. The risk does not disappear at 6 months of age. We see 7 - 9 month olds with positional asphyxia too.

Parents deserve to know where the risks are and how to keep their infant safest.

AAP REVISES SIDS RISK REDUCTION RECOMMENDATIONS

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reduce the risk of SIDS: There is no evidence that use of such home monitors decreases the risk of SIDS.

- Avoid development of positional plagiocephaly (flat back of head): Encourage "tummy time."
- Avoid having the infant spend excessive time in car-seat carriers and "bouncers." Place the infant to sleep with the head to one side for a week and then changing to the other.
- Assure that others caring for the infant (child care provider, relative, friend, babysitter) are aware of these recommendations.

For questions or more information contact SIDS of Illinois at www.sidsillinois.org or Call 1-800-432-SIDS.

MISSION STATEMENT

SIDS of Illinois, Inc. is a statewide, not-for-profit organization dedicated to:

1. Supporting family members and others who have been touched by the tragedy of a SIDS or other infant death.
2. Educating the public and professionals about bereavement support and infant mortality reduction.
3. Eliminating Sudden Infant Death Syndrome through the support and implementation of appropriate research.

For more information on any of our articles, contact the SIDS of Illinois office at 630-305-7300 or email nancy@sidsillinois.org

SLEEP ENVIRONMENT AND THE RISK OF SIDS

Putting your baby to sleep on its back -- a proven strategy to reduce the risk of sudden infant death syndrome (SIDS) -- isn't always enough to reduce the risk of infant death.

That's what an Arizona team of researchers reported Saturday at the Pediatric Academic Societies' annual meeting in Washington, D.C.

Paying attention to the sleeping environment is also crucial, said study co-author Dr. Justin Sales, a pediatric resident at Maricopa Medical Center and Children's Hospital, in Phoenix.

"A lot of parents think, 'If my baby is asleep on his back, we don't have to worry about SIDS,'" Sales said. "What we are showing is there are other sleep-associated risk factors, such as inappropriate bedding or sleep surfaces, that play a role."

While those factors have been known and publicized, Sales said they need to be re-emphasized in the current campaign to reduce SIDS risk, called the Back to Sleep campaign, promoted by the U.S. National Institute of Child Health and Human Development (NICHD).

Sales, along with lead author Dr. Anu Partap and their colleagues, made those conclusions after they reviewed all sleep-associated deaths of infants in Arizona between 1999 and 2001. They used data from the Arizona Department of Health Service's Child Fatality Review Program.

SIDS is the second-leading cause of infant death in the state, they said. But deaths caused by bedding, sleep surface and bed-sharing are reported separately, which may result in an underestimation of the current risk of unsafe sleep practices. If SIDS cases are combined with the other incidents the researchers studied, sleep-associated deaths become the leading cause of infant death in the state, they found.

SIDS is defined as the sudden and unexplained death of a child under the age of 1. It is the leading cause of death for infants between 1 month and 12 months of age, according to the NICHD.

The researchers found that 134 infants died from SIDS or sleep hazards resulting in suffocation or asphyxiation in the period between 1999 to 2001.

Of the total deaths, 104 were attributed to SIDS and 30 were caused by sleep environment, such as sleep surface, bedding or bed sharing.

The investigators determined that 72% of the cases had "reducible risk" factors -- that is, they theoretically could have been prevented if parents followed all precautions.

When they broke down the information by ethnic groups, they found that black infants had a five times higher rate of dying

from a sleep-associated cause of death, and infants under Medicaid coverage had a 1.5 times higher rate.

The team concludes that Arizona needs to consider developing a broader safe sleep campaign, one that especially reaches out to the black and Medicaid populations.

However, the Back to Sleep campaign has been effective, the researchers found. SIDS has declined by 50 percent, Sales said, since the national campaign was launched more than a decade ago. Paying attention to proper sleeping surfaces and environment could reduce it more, he added.

Earlier this month, other researchers puzzled over statistics showing the incidence of SIDS is going down while the overall unexpected infant death rate remains mostly unchanged in the United States. Reporting in the journal *Pediatrics*, they said the paradox may be the result of some SIDS deaths being reclassified into different categories, such as suffocation, and the Arizona research seems to add credibility to the supposition.

Improper bedding for babies includes bumper pads and pillows as well as comforters, experts say. Improper surfaces include adult beds and couches, Sales noted.

Another expert agreed with Sales' points. "To me, the message they are giving is there are many preventable deaths in Arizona," said Dr. Debra Weese-Mayer, Professor of Pediatrics and Director of Pediatric Respiratory Medicine at Rush University Medical Center in Chicago.

"His paper is very good because it's a wake-up call again," Weese-Mayer said.

SIDS has a genetic component, she noted, that is not yet fully understood.

While the death rate from SIDS has declined, Weese-Mayer said, "We still have a big problem. We should not be complacent about SIDS."

Parents "should follow all the recommendations," she said. Those include placing healthy babies on their back for sleep. (Some medical conditions might require a baby to sleep on the stomach, caution experts; parents should check with their child's doctor.)

The temperature in the baby's room should be comfortably warm but not excessively; no smoking should be allowed, as exposure to smoke has been shown to increase the risk of SIDS.

MORE INFORMATION

To learn more about reducing SIDS risk, visit the American Academy of Pediatrics <<http://www.aap.org/new/sids/reduceth.htm>> .

(SOURCES: Justin Sales, M.D., M.P.H., pediatric resident, Maricopa Medical Center and Children's Hospital, Phoenix, Ariz.; Debra Weese-Mayer, M.D., professor of pediatrics and director of pediatric respiratory medicine, Rush University Medical Center, Chicago, Ill.; Pediatric Academic Societies meeting, May 14, 2005, Washington, D.C.)

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