

Reducing the Risk of SIDS

What is SIDS?

SIDS is an acronym that stands for sudden infant death syndrome, also known as crib death. SIDS isn't any one illness or disease; it's the diagnosis given when an apparently healthy baby under age 1 dies without warning, and doctors and investigators can't pinpoint a cause after performing a full investigation including an autopsy, review of family and medical history, and examination of the death scene.

Each year in the United States, SIDS claims the lives of approximately 3,000 infants, 90 percent of whom are less than 6 months old. Because of the American Academy of Pediatrics' "Back to Sleep" campaign, SIDS death rates have declined more than 42 percent since 1992. Even so, SIDS remains the leading cause of death in U.S. children under a year old.

What causes SIDS?

No one knows for sure, but researchers around the world are working feverishly to figure it out, and they're getting closer every day. What have they learned so far? It's beginning to look as if SIDS may result from more than one problem, or that several events must happen together for SIDS to occur. A leading theory is that an anatomical defect, most likely in the brain, leads to a problem in the way the baby breathes or the way blood flows in her body. Another possibility is that affected infants have a developmental delay that causes proper breathing or blood flow to develop more slowly than they do in normal infants. When babies with any of these problems are confronted with a challenge -- such as sleeping on their stomach and thus rebreathing carbon dioxide trapped in their bedding, overheating, breathing cigarette smoke, or momentary loss of blood pressure during sleep -- they may be too vulnerable to survive. Here's a closer look at some of the leading SIDS theories.

A defect in the brain stem

Hannah Kinney, a neuropathologist at Harvard Medical School, has identified an abnormality in the region of the brain stem that controls carbon dioxide sensing in some babies who have died of SIDS. Sleeping face down can trap carbon dioxide between the baby's face and the mattress, so the baby breathes in excess amounts of this deadly gas. Most babies will wake up when the level of carbon dioxide gets too high. But Kinney suspects that this brain stem defect prevents some babies from sensing when the gas has accumulated to a life-threatening level.

Abnormalities in blood pressure control

Ronald Harper, a neuroscientist at the Brain Research Institute at the UCLA School of Medicine, is looking at the brain's ability to overcome the drops in blood pressure that all infants go through when asleep. He believes that some SIDS babies may die from an inability to recover from a sudden loss in blood pressure. That failure may result from the brain stem defect noted above, or from a defect in other brain areas. But, unlike Kinney, Harper suspects that the problem is an inability to restore blood flow to critical organs

(such as the heart), not a breathing failure. He also says that back sleeping assists certain brain areas in restoring blood pressure.

Developmental delays in a baby's defense system

The first year of life is a time of rapid growth and development. Babies are born with a primitive defense system known as the startle response (they arch their head back, kick, and flail their arms) and later develop a more coordinated ability to move their body away from danger. Bradley Thach, a pediatrician and researcher, believes that some babies die because they simply aren't able to defend themselves against a life-threatening event such as being trapped under a blanket.

Neck artery constriction

When a baby sleeping on her stomach tries to move her face away from her bedding, she may inadvertently compress arteries in her neck, which can cut off blood flow to the brain, say researchers from Australia's University of Sydney and New South Wales Institute of Forensic Medicine. That, in turn, could damage the nerve centers that help control involuntary functions such as breathing and, ultimately, lead to the baby's death. This is considered the weakest SIDS hypothesis by some experts because it does not explain the significance of certain risk factors such as pre- and postnatal exposure to cigarette smoke.

Which babies are most at risk?

All babies under age 1 are at risk for SIDS because doctors still have no way to pinpoint those with the most relevant defects or abnormalities. Some children, however, have a higher risk of SIDS than the general population does. Noted pediatrician William Sears has identified several characteristics.

A baby may be at higher risk for SIDS if she

- was born prematurely
- has a mother who smoked or abused drugs during pregnancy or was under the age of 20 at the time of her first pregnancy
- is around a smoking parent or caregiver
- was born to a mother who had poor or no prenatal care
- is placed in the crib on her stomach * suffered an ALTE (apparent life-threatening event), especially a stoppage in breathing that made her pale, blue, and limp

Research also shows that African-American infants are two and a half times more likely to die of SIDS than white infants, and Native American babies are at three times the risk. Interestingly, Asians in North America are at lower than average risk. Boys of all ethnicities are at slightly higher risk than girls by a ratio of 1.5 to 1, according to Sears. Low-birthweight infants, twins, and other multiples are also at higher risk.

At what age is the risk of SIDS highest?

SIDS is most common between 1 and 4 months of age, with 90 percent of cases in infants under 6 months, though babies are still considered at risk for SIDS up to the age of 1. SIDS strikes most often during sleep (but not always), usually between the hours of 10

p.m. and 10 a.m. -- the usual hours of extended sleep. Also, SIDS is more common during cold weather months.

How can I reduce my baby's risk of SIDS?

You can do a number of things to decrease your baby's risk, but at present there's no guaranteed way to prevent SIDS. Here are the most important steps to take:

Put your baby to sleep on her back

This is the single most important thing you can do to help protect your baby. The "Back to Sleep" public awareness campaign estimates that this technique has saved thousands of lives since the campaign began in 1994. Putting your baby on her side (with one arm outstretched so she can't roll onto her face) is safer than tummy-down, but still not as good as back sleeping. Research shows that stomach sleeping doubles your baby's risk of SIDS.

When your baby is a newborn, you can keep her happily positioned on her back by swaddling her snugly with her hands up near her mouth so she can comfort herself. As she gets older, she'll start to move around a bit at night, so you won't want to wrap her. By the time she's 5 or 6 months old, she'll be able to roll over in both directions, making it more difficult for you to keep her on her back at night. Try not to worry. At that age her risk for SIDS will start to drop, so just do your best to get her settled on her back or propped on her side, and don't fuss if she rolls over.

Be aware, though, that keeping your baby on her back all the time can contribute to a condition called plagiocephaly, in which your baby develops a flat spot on the back or side of her head. If you have any questions about your baby's sleep position, talk to your doctor or nurse.

Don't smoke during pregnancy and don't allow smoking around your baby

Women who smoke cigarettes during or after pregnancy put their baby at increased risk for SIDS. Recent studies have found that the risk of SIDS rises with each additional smoker in the household, with the numbers of cigarettes smoked a day, and with the length of the infant's exposure to cigarette smoke. Keep the air around your baby smoke-free.

Choose bedding carefully

Several studies have linked soft sleeping surfaces to an increased risk of SIDS. Always put your baby to sleep on a firm, flat mattress with no pillow, fluffy blanket, sheepskin, or comforter under her. Any blankets and bumpers should be thin, flat, and fastened securely to minimize the risk of covering your baby's head or face. Don't put stuffed toys or other soft materials in your baby's crib. Waterbeds, beanbags, and other soft surfaces are all unsafe for an infant to sleep on.

Avoid overheating your baby

Too warm a room or too much bedding are associated with an increased risk of SIDS. Keep the room your baby sleeps in at a comfortable temperature (around 60 to 70 degrees

Fahrenheit, according to Palo Alto-based pediatrician Harry Dennis). Signs that your baby may be overheated include sweating, damp hair, heat rash, rapid breathing, restlessness, and fever.

Breastfeed your baby if you can
Research shows that breastfed babies are less at risk for SIDS.

Take your baby in for regular checkups
Babies who are up to date on their immunizations are less at risk for SIDS.

Can sharing a bed with my baby help reduce the risk of SIDS?
Some experts believe that sleep sharing (having your baby sleep in your bed) reduces the risk of SIDS. This advice is based on studies that show that co-sleeping alters a baby's sleep patterns, making them lighter and helping her match her breathing to her mother's. Recent research also suggests that sharing a bed allows a mother to respond more quickly to changes in her baby's breathing and movements since, in theory, she's sleeping less soundly when her baby is right next to her.

But no research conclusively proves that sleep sharing reduces the risk of SIDS. In fact, you may have heard just the opposite. A 1999 study by the U.S. Consumer Product Safety Commission found that sleep sharing actually increased a baby's suffocation risk. But experts in the field of pediatrics, sleep, and SIDS, as well as a spokesperson for the American Academy of Pediatrics, have criticized the study's methodology. James McKenna, head of the Mother-Baby Behavioral Sleep Laboratory at the University of Notre Dame and a BabyCenter contributor, calls the study "bad science," chiefly because the number of deaths attributed to bed sharing was not compared to the total number of babies who bed share. McKenna and others also point out that the death certificates often lacked details on the circumstances of the child's death, such as whether the parents were under the influence of drugs or alcohol or impaired in any other way.

McKenna advises BabyCenter parents who use the family bed to take these precautions: Make sure your mattress fits tightly against the headboard and has no space around it where a baby's head could get stuck. Make sure there are no cords or plastic bags anywhere near the bed. Parents who smoke should not co-sleep, he says: "Nobody knows exactly why, but when smokers sleep with their babies, the risk of SIDS is higher." He also recommends that women who are exceedingly overweight not sleep with a baby less than 3 months old.

The best advice is to talk to your doctor about sleep sharing, and never let your infant sleep with you if you have a waterbed or regularly take drugs or drink alcohol. And remember, even if your baby is sleeping in your bed, the American Academy of Pediatrics recommends that you put her to sleep on her back.

Can products such as a sleep monitor or special crib mattress help?
To date there is no evidence to support the use of these products. Some electronic home sleep monitors (which are attached to your child) will sound an alarm if your baby stops

breathing, but there is no research that proves these monitors help prevent SIDS, and they may pose a risk of electrical injury. The National Institutes of Health don't recommend sleep monitors for otherwise healthy infants. If your baby has already had a life-threatening breathing incident or has other SIDS risk factors, though, your doctor may recommend one.

As for a special crib mattress, some companies are now marketing mattresses with a built-in ventilation system that they claim prevents the buildup of carbon dioxide. These mattresses may keep more fresh air circulating around your baby, but they may also give you a false sense of security. If you opt to buy one, you should still follow the risk-reduction tips above. "I haven't heard of these mattresses, but any firm mattress should do very well," says Harper. "If parents use firm mattresses, are careful of too much covering and overheating, and especially place their infants on their back, they should be assured that they are doing as much as they can."

The one product that does show some real promise of reducing the risk of SIDS is a wearable blanket called the Halo SleepSack, which is used in place of heavy bedding (thus reducing the risk of a baby slipping under the covers and suffocating or rebreathing exhaled carbon dioxide). The SleepSack Wearable Blanket is the only product recommended by the First Candle/SIDS Alliance.

Where can I get more information?

The SIDS Alliance offers free educational brochures and a 24-hour hotline for information and referrals.

The National Sudden Infant Death Syndrome Resource Center provides information and support to parents, caregivers, researchers, and others.

The CJ Foundation for SIDS is the largest non-government funder of SIDS-related programs in the United States. Visit their site for news about SIDS, a look at ongoing research, and updates on fundraisers and events around the country.

See also: SIDS, A Parent's Guide to Understanding and Preventing Sudden Infant Death Syndrome, by William Sears, M.D. ISBN=0316779539