

Sudden Infant Death Syndrome (SIDS)

Sudden infant death syndrome (SIDS) refers to the unexpected death during sleep of an apparently healthy infant under the age of one. Infant deaths are classified as SIDS if the death remains unexplained after a thorough case investigation including an autopsy, death scene investigation, and review of the medical history.¹

In 2006, 2,323 infants died from SIDS, accounting for 8.1 percent of all infant deaths. SIDS is the third leading cause of infant death in the United States.² The death rate in 2006 was 54.5 per 100,000 live births. Caucasians, African Americans, and American Indians/Alaska Natives all have SIDS death rates greater than the national rate. In contrast, Asian Americans/Pacific Islanders and Hispanics have death rates below the national rate.³

SIDS is more likely to occur in male than female infants (3:2 ratio).⁴ In addition, most cases of SIDS occur during the first to sixth months of life, and especially during the second and third months. Premature or low birth weight infants are also at increased risk, as are those born during the fall and winter as more cases occur during the cooler seasons. Many SIDS investigations find that the infant suffered from an upper respiratory infection in the weeks preceding the incident.⁵

Some risk factors cannot be controlled, but others can be modified. Recommended steps to reduce the risk of SIDS includes not allowing the child to sleep on soft bedding or with soft objects, not allowing children to share a bed with anyone, and not overheating the infant. The most important risk factors that can easily be changed include:⁶

- Not smoking while pregnant,
- Place children on their back to sleep, NOT their stomach (also called prone sleeping), and
- Avoid secondhand smoke exposure.

In 1992, the American Academy of Pediatrics (AAP) released its first policy statement that recommended that all healthy infants be placed on their backs to sleep in order to reduce the risks of SIDS. In 1995 the CDC initiated a national “Back to Sleep” education campaign to help inform all parents and infant care givers about the importance of back sleeping. Since then, the frequency of prone (stomach) sleeping has decreased from 70 percent to 20 percent and the SIDS death rate has decreased by more than 50 percent in the United States.⁷

New research has shown that prone sleeping can lead to infections,

which may trigger SIDS in some infants. Prone sleeping can increase airway temperature as well as stimulate the creation of bacteria and bacteria-related toxins. This research furthers the knowledge of how factors related to SIDS may be connected to one another by showing a relationship between stomach sleeping and infections.⁸

Maternal smoking during pregnancy is estimated to double the risk of SIDS; one study found that the risk of SIDS is 2.6 times higher among smoking pregnant women compared to mothers who do not smoke during pregnancy. Among smokers, 61 percent of SIDS cases were due to maternal smoking; out of all SIDS cases, 21 percent were due to maternal smoking and thus could be prevented.⁹

Some health experts believe that SIDS babies are born with brain abnormalities that make them unable to awaken from sleep when exposed to high carbon dioxide or low oxygen levels, leading to abnormal breathing or heart function. One study found that infants who eventually died from SIDS tended to arouse less by the end of the night compared to a control group. The infants who died from SIDS also tended to partially wake more frequently and for a longer period of time in the first part of the night (between 9:00 pm and 12:00 am) and had fewer full arousals during the latter part of the night (between 3:00 am and 6:00 am).¹⁰

A recent study found that using a fan in an infant's sleeping room might decrease the risk of SIDS by 72 percent. However, the fan was most useful in preventing SIDS in the situations with the most other risk factors present, such as prone sleeping. Fans should not be used as a substitute for following other recommendations for preventing SIDS, but does offer another way of combating the problem.¹¹

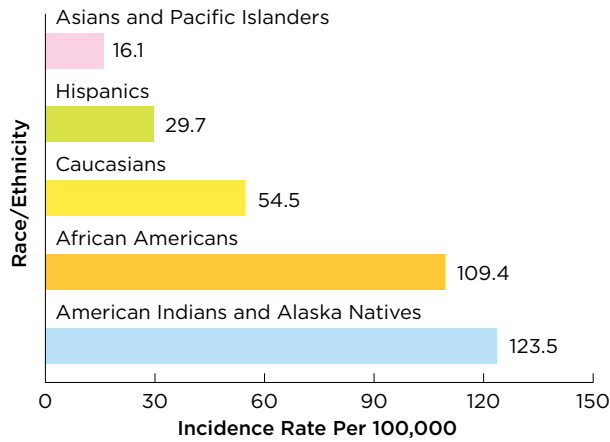
Studies have linked high levels of particulate matter air pollution (PM₁₀ and PM_{2.5}) to increased risk of SIDS. One recent case controlled study in California found that every 10 µg/m³ increase in particles (PM₁₀) increased the risk of SIDS by 3 percent.¹² Another case-controlled study found a similar effect for the smaller particles (PM_{2.5}), where researchers reported that the risk increased by 3 percent for every 10 µg/m³ increase in particles when using a broader definition of SIDS.¹³ One review of multiple studies on the effect of fine particulate matter on SIDS found consistent evidence that higher levels of particulate matter increased the risk of SIDS,¹⁴ while another review found that the evidence suggests that such a relationship exists but called for more research on the topic.¹⁵ A third review found the evidence was not sufficient to draw conclusions.¹⁶

Racial/ Ethnic Differences

African Americans

In 2006, 695 African American Infants died from SIDS, a death rate of 109.4 per 100,000. African Americans had a death rate approximately twice as large as Caucasians (54.5 per 100,000; Figure 1).¹⁷ While overall death rates for SIDS have

Figure 1: SIDS Rates by Race/Ethnicity, 2006



Source: NCHS 2006

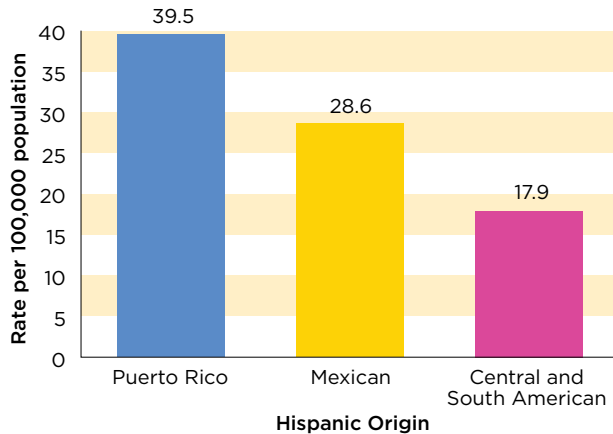
decreased, the reduction has been smaller among African Americans.¹⁸

There is growing evidence that infants who share a room but not a bed with their parents or caretakers have a reduced risk of SIDS. Several countries, including the U.S., recommend that infants sleep in a crib or bassinet next to their parent’s bed.¹⁹ A survey of over 700 mothers, 66 percent of whom were African American, measured bed-sharing trends in the U.S. Almost half of mothers shared a room but not a bed with their child. About a third shared a bed with their child, and just under a fifth slept in a separate room. Over three-quarters of those

who shared a bed with an infant were African American, compared to only 12 percent for Hispanics and 9 percent for Caucasians. As sharing a bed with an infant is a risk factor for SIDS, and the rate of SIDS is so high among the African American community, this research suggests an area in which intervention may be useful in addressing this disparity.²⁰

One study of how infants were placed to sleep found that African Americans were less likely than Caucasians or Hispanics to place their child on its back to sleep. This difference was largely due to differences in parents attitudes about the child choking or being comfortable while sleeping on its back, and if a doctor had recommended back sleeping. Future efforts must be made to ensure that health care professionals urge that infants be placed to sleep on their back and that concerns about comfort and choking be addressed.²¹

Figure 2: SIDS Rates by Hispanic Origin, 2005



Source: NVSR 2006

● **Hispanics**

In 2006, SIDS was responsible for 288 Hispanic infant deaths, a rate of 29.7 per 100,000. This rate is 46 percent lower than the rate of 54.5 per 100,000 among Caucasians (Figure 1, above).²²

SIDS rates tend to vary among Hispanic subgroups. Puerto Ricans have much higher rates of SIDS than any other Hispanic subgroup. In 2005, Central and Southern American Hispanics had the lowest death rate (17.9 per 100,000), followed by Mexicans (28.6 per 100,000) and then Puerto Ricans (39.5 per 100,000; Figure 2).²³

● **Asian Americans and Native Hawaiians/Pacific Islanders**

Asian Americans/Pacific Islanders have a lower rate of SIDS than any other racial/ethnic group except for Central and Southern American

Hispanics. In 2006, 32 Asian Americans/Pacific Islanders died from SIDS. The death rate for SIDS among this population was 16.1 per 100,000 compared with 54.5 per 100,000 for Caucasians, 109.4 per 100,000 for African Americans, and 29.7 per 100,000 for Hispanics (Figure 1, above).²⁴

● American Indians/ Alaska Natives

In 2006, SIDS claimed 47 lives among American Indian and Alaska Native populations. While the overall number of death is low compared to other, larger, populations, the death rate was the highest recorded at 123.5 per 100,000 (Figure 1, above).²⁵

Resources

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