

## **Newborn Guideline 13**

# **SUDDEN INFANT DEATH SYNDROME**

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### ***INTRODUCTION***

Sudden Infant Death Syndrome (SIDS) is defined as the sudden death of an infant less than one year of age that remains unexplained after a thorough case investigation.<sup>1</sup> The investigation includes a complete autopsy, examining the death scene and reviewing the clinical history. In the American Academy of Pediatrics (AAP) recent policy statement titled *Distinguishing Sudden Infant Death Syndrome From Child Abuse Fatalities*,<sup>2</sup> the AAP states that SIDS is a diagnosis of exclusion. “A diagnosis of SIDS reflects the clear admission by medical professionals that an infant’s death remains completely unexplained. A young infant’s death should be ruled as attributable to SIDS when all of the following are true:

- a complete autopsy is done, including cranium and cranial contents, and autopsy findings are compatible with SIDS;
- there is no gross or microscopic evidence of trauma or significant disease process;
- there is no evidence of trauma on skeletal survey;
- other causes of death are adequately ruled out, including meningitis, sepsis, aspiration, pneumonia, myocarditis, abdominal lesions, inborn metabolic disorders, carbon monoxide asphyxia, drowning, or burns;
- there is no evidence of current alcohol, drug, or toxic exposure; and
- thorough death scene investigation and review of the clinical history are negative”.

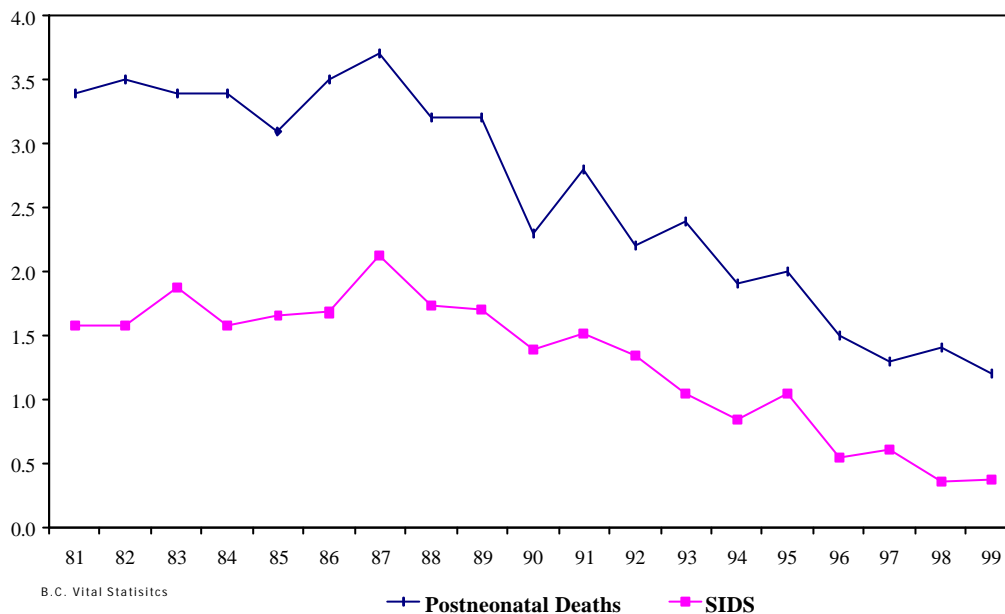
### ***ETIOLOGY***

“Despite extensive research, understanding of the etiology of SIDS remains incomplete. The discovery of abnormalities in the arcuate nucleus of the brainstems of some SIDS victims suggests that true SIDS deaths likely reflect delayed development of arousal, cardiorespiratory control, or cardiovascular control. When the physiologic stability of such infants becomes compromised during sleep, they may not arouse sufficiently to avoid the noxious insult or condition”<sup>3</sup>.

### ***INCIDENCE***

SIDS is the leading cause of postneonatal infant mortality in North America.<sup>4</sup> There are two consistent and characteristic epidemiological features of SIDS: seasonal (higher incidence in winter months) and age incidence. The number of SIDS deaths rise to peak at 2-3 months of age and then falls rapidly. Ninety percent of SIDS occurs before 6 months of age. It is uncommon after 6 months and rare after 12 months.<sup>5</sup> Aboriginal infants are at a higher risk for SIDS (3 to 7 times) than non-Aboriginal infants.<sup>6,7</sup>

**Table 1: SIDS and Postneonatal Death Rates (28 - 364 days) in B.C. 1981-1999**



In British Columbia in 1999, the SIDS death rate was 0.38 per 1,000 livebirths, a decrease from 1.57 per 1,000 livebirths in 1981<sup>8</sup>. SIDS accounts for almost half of postneonatal deaths. Table I illustrates the trend of decreasing SIDS and Postneonatal death rates in B.C. from 1981 to 1999, likely attributable to a successful “Back to Sleep” campaign and increased public education.

## RISK FACTORS

### I. PREVENTABLE RISK FACTORS<sup>9,10</sup>

- **Prone (tummy) sleeping**
- Soft sleep surfaces/loose bedding
- Overheating
- Smoking: maternal smoking during pregnancy or infant exposure to environmental tobacco smoke
- Co-sleeping: may increase the risk of SIDS if the person who shares the bed is a smoker or has been consuming alcohol or taking other drugs that may decrease their responsiveness.

### II. INDEPENDENT RISK FACTORS<sup>11</sup>

- Young maternal age
- Male sex
- Prematurity/low birth weight

### ***SLEEPING POSITION***

**Placing infants to sleep on either their side or back (supine) has produced a dramatic decrease in the incidence of SIDS in countries adopting this recommendation (in many countries the SIDS incidence has decreased by 50%).<sup>12-16</sup>** Supine sleeping is not associated with major adverse health effects.<sup>17,18</sup>

Recent studies have shown that side sleeping has a slightly higher risk for SIDS than the supine position, although the side-sleeping position still seems to be considerably safer than prone.<sup>19,20</sup> The reasons for this may relate to the relative instability of this position. Infants placed on their sides usually roll to their backs, however the risk for SIDS if rolling to their tummy is significantly greater than rolling to their back.

### ***RECOMMENDATIONS***<sup>21,22</sup>

1. Healthy normal infants preferably should be placed **on their back to sleep** from birth. Individual medical conditions may warrant a health care provider to recommend another position after weighing the relative risks and benefits.
2. If the side position is used, the dependent arm should be brought forward to lessen the likelihood of the infant rolling to the prone position.
3. A firm, tight-fitting mattress in a crib that meets current safety standards should be used for the infants' sleep environment. Infants should not be put to sleep on waterbeds, sofas, soft mattresses or other soft surfaces.
4. The crib should be free of objects such as bumper pads, pillows, quilts, comforters, sheepskins, stuffed toys and other soft products.
5. Loose bedding such as blankets and sheets should be avoided. If a blanket is used, it should be tucked under the mattress and should cover the infant only to the level of the chest. Parents should consider using sleep clothing only, as an alternative to blankets.
6. Co-sleeping should be undertaken with caution. If a mother chooses to have her infant sleep in her bed, care should be taken that the infant sleeps in the supine position, that soft surfaces or loose covers are avoided, and that beds presenting entrapment possibilities are avoided.<sup>23</sup>
7. Infants should be dressed and covered in a manner to avoid overheating, even during illness.
8. A certain amount of "tummy time" while the infant is awake and observed is recommended for developmental reasons and to help prevent plagiocephaly (flat spots) on the occiput. Positional plagiocephaly can be avoided by altering the supine head position during sleep.
9. Infants should be cared for in a smoke and drug-free environment.

10. The campaign for reducing prone sleeping (Back to Sleep) should continue and be expanded to emphasize the safe characteristics of the sleeping environment.
11. The evidence regarding the protective benefits of breastfeeding against SIDS is inconclusive. Breastfeeding should be recommended for the significant nutritional, immunological and psychological benefits for the health of infants and mothers.

## **RESOURCES**

Complete American Academy of Pediatrics (AAP) and Canadian Pediatric Society (CPS) statements and recommendations on SIDS can be accessed via the Internet at:

<http://www.aap.org/policy/re0036.html>

American Academy of Pediatrics. (2001). Distinguishing Sudden Infant Death Syndrome From Child Abuse Fatalities (RE0036). *Pediatrics*, 107(2), 437-441.

[www.aap.org/policy/re9946.html](http://www.aap.org/policy/re9946.html)

American Academy of Pediatrics: Task Force on Infant Sleep Position and Sudden Infant Death Syndrome. (2000). Changing concepts of sudden infant death syndrome: Implications for infant sleeping environment and sleep position. *Pediatrics*, 105(3).

<http://www.cps.ca/english/statements/IP/cps98-01.htm>

Joint Statement: Canadian Foundation for the Study of Infant Deaths, the Canadian Institute of Child Health, the Canadian Paediatric Society and Health Canada. (1999). Reducing the Risk of Sudden Infant Death Syndrome in Canada. *Paediatrics & Child Health*, 4(3), 223-4.

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