Sudden Infant Death Syndrome

Sudden infant death syndrome (SIDS) is defined as the sudden death of an infant or young child, which is unexpected by history, and in which a thorough postmortem fails to demonstrate an adequate cause for death. The causes of SIDS are unknown, and there are no tests that predict which infants will die of SIDS. Recommending that infants sleep on their backs is the only proven method of reducing the incidence of SIDS.

I. **Epidemiology**

A. SIDS is the second most common cause of death for infants less than 1 year of age, the first being congenital anomalies.

B. Most deaths due to congenital anomalies and other causes occur during the first week of life, leaving SIDS as the most common cause of death during the post-perinatal period. SIDS accounts for 35% of post-perinatal deaths in the United States.

C. The incidence of SIDS is 1.4 SIDS deaths/1000 live births. The incidence of SIDS is higher in males in all racial groups.

D. SIDS rarely occurs during the first week of life. Most SIDS deaths occur between 1 and 5 months, peaking at about 3 months of age.

E. SIDS is more likely to occur during the winter months. In Europe and North America, the January SIDS rate is double the incidence during July.

F. There is no single cause of SIDS. SIDS most likely has several different causes, all having in common that death was unexpected and that the cause cannot be ascertained.

II. Infant Sleeping Position

A. Large controlled studies have confirmed the association between the prone sleeping position and an increased risk of SIDS (odds ratios between 3 and 12). The increased risk of SIDS associated with the prone sleeping position may be related to a developmental vulnerability to upper airway obstruction, leading to asphyxia and suffocation.

B. After about 6 months of age, when an infant can spontaneously change head, face, and body position, he or she is likely to be past the vulnerable period. The mechanism by which prone positioning could lead to SIDS is not known.

C. Healthy infants should be positioned on their back (supine) when being put down for sleep.

D. Recommendations for supine infant sleep positioning apply to newborn and young infants who are not yet able to change position on their own. Once an infant is able to roll over back-to-front, parents need not force the infant to sleep in the supine position.

Proposed Risk Factors For Sudden infant death syndrome	
Maternal Risk Factors	Cigarette smoking during pregnancy* Drug use during pregnancy Inadequate prenatal care* Lack of breast feeding* Low education level* Mother unmarried* Multiparity* Young maternal age (<20 years)* Young maternal age with first pregnancy (<20 years)*
Neonatal Risk Factors	Cyanosis Hypothermia Irritability Poor feeding Respiratory distress Tachycardia Tachypnea
Socioeconomic Risk Factors	Crowded living conditions* Multiple child deaths in one family (no known medical cause)
Newborn Risk Factors	African-American, native Americans* Low Apgar scores (<7) Low birthweight* Male sex* Prematurity* Small-for-gestational age*
Postneonatal Risk Factors	History of cyanosis or apnea History of diarrhea or vomiting within 2 weeks of SIDS death
Prenatal (pregnancy) Risk Factors	Anemia* Low prepregnancy weight

Miscellaneous Risk Factors	Previous SIDS death in family Previous SIDS infant older than 6 months
* Widely accepted, general agreement among investigators	

III. Predicting the Occurrence of SIDS

A. Potential SIDS victims cannot be identified by any method before death. No test or risk profile can identify a specific infant destined to die of SIDS.

B. Pneumograms and polysomnography can be useful in the management of selected patients, but they are not predictive for SIDS.

IV. Management of SIDS and Home Monitoring

A. Home cardiorespiratory monitoring is intended to improve the outcome of any infant perceived to be at increased risk of sudden death.

B. Apnea per se is not a significant risk factor, and apparent life threatening event (ALTE) infants are thought to account for only a small number of SIDS cases. Furthermore, after decades of use, home monitoring has not decreased the incidence of SIDS.

V. Prevention

A. Monitoring does not have a significant impact on the incidence of SIDS. "Risk profiles" are not of predictive value for individual infants.

B. Improving the general health and well-being of mothers and infants is the best approach to prevention of SIDS.

Indications for Home Monitoring

Recommended for:

- Any infant perceived to be at increased risk of unexpected sudden death, including:
  - Infants with one or more severe apparent life-threatening events (ALTEs) (cardiopulmonary resuscitation or vigorous stimulation required)
  - Symptomatic premature infants (abnormal apnea or bradycardia at time of discharge)
  - Subsequent siblings in family with two SIDS cases
  - Infants with central hypoventilation
  - Infants who have tracheostomies

Not Recommended for:

- Normal infants
- Asymptomatic premature infants

Individualize Case-by-case for:

- Infants receiving supplemental oxygen
- Infants who have experienced less severe ALTEs
- Infants who have bronchopulmonary dysplasia
- Infants of substance abusing mothers
- Subsequent siblings in family with one SIDS case

Possible Methods of Preventing Sudden Infant Death Syndrome
Prevent use of the prone sleeping position
Better educate public about the dangers of over-the-counter remedies in young infants
Decrease parental smoking before and after birth
Decrease parental drug use (eg, crack cocaine smoking) before and after birth
Recommend back sleeping position

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