

Sudden infant death syndrome (SIDS)

Prof. I.D.G.Kitulwatte

Department of Forensic Medicine.,



UNIVERSITY OF KELANIYA

Sudden infant death syndrome (SIDS, crib death/cot death)

- Sudden death of an infant **under one year** of age, which remains unexplained after a thorough case investigation, including performance of a **complete autopsy, examination of the death scene**, and **review of the clinical history**.
- Infants are at the highest risk for SIDS during sleep.
- Over the years, the very existence of SIDS has been debated.





- Typically the infant is found dead at sleep, and exhibits **no signs of having struggled**



SIDS was the third leading cause of infant mortality in the U.S. in 2011



Difficulties faced in investigating infant deaths.

- Frequently retrospective scene investigations.
- The subtlety of findings in many cases.
- Lack of information about drug exposures and postmortem toxicology.
- A victim who was unable to speak.
- A very small decedent posing autopsy interpretation difficulties.



Procedure to be followed



Procedure to be followed

- Conduct Complete Scene Investigation
- Document a detailed medical history of the infant
 - Determine Previous Sibling deaths
 - Document Previous Encounters with Social Services and Law Enforcement



Investigative questions

- What is the infant's name and DOB?
- What is the nature of birth?
- What is the date-of-birth?
- When was the infant put down to sleep?
- In what position was the infant put down?
- Who found the infant?
- Did you hear or check on the infant during the interim?
- In what position was the infant found?
- Where was the infant when found?



Investigative questions cont.,

- What was the surface like where the infant was found?
- Was anything covering the infant's nose and mouth?
- Was the room extremely hot or cold?
- Did you notice any fluids on the bedding?
- What was the infant wearing?
- How many blankets were over the infant?
- Did the mother smoke tobacco products while pregnant?
- What was the general appearance of the residence?
- When was the infant last fed?
- Was the infant ill or on any medication?



Pre autopsy



- Take Complete X-Rays of Infant An X-ray of the infant should be taken, even if it is just a single babygram
- Perform Complete forensic Autopsy
- Draw Vitreous fluid
- DNA Sample
- Perform Metabolic Screening



History in a case of SIDS

- Normal healthy infant
- Quite well previous day
- May have trivial URTI or bowel upset
- Infant put to sleep and found dead in sleep
- Dead in the first half of the morning, few in afternoon or evening
- Child quite well may be dead in 5 min



Need to exclude

- Asphyxia.
- Sharing of sleeping surface.
- Change in sleeping condition (unaccustomed stomach sleeping).
- Hyperthermia/hypothermia.
- Environmental hazards (carbon monoxide, noxious gases, chemicals, drugs, devices).
- Unsafe sleeping conditions (couch, waterbed, stuffed toys, pillows, soft bedding).
- Diet (introduction of new food type).
- Recent hospitalization.
- Previous medical diagnosis.
- History of acute life-threatening events.
- History of medical care without diagnosis.
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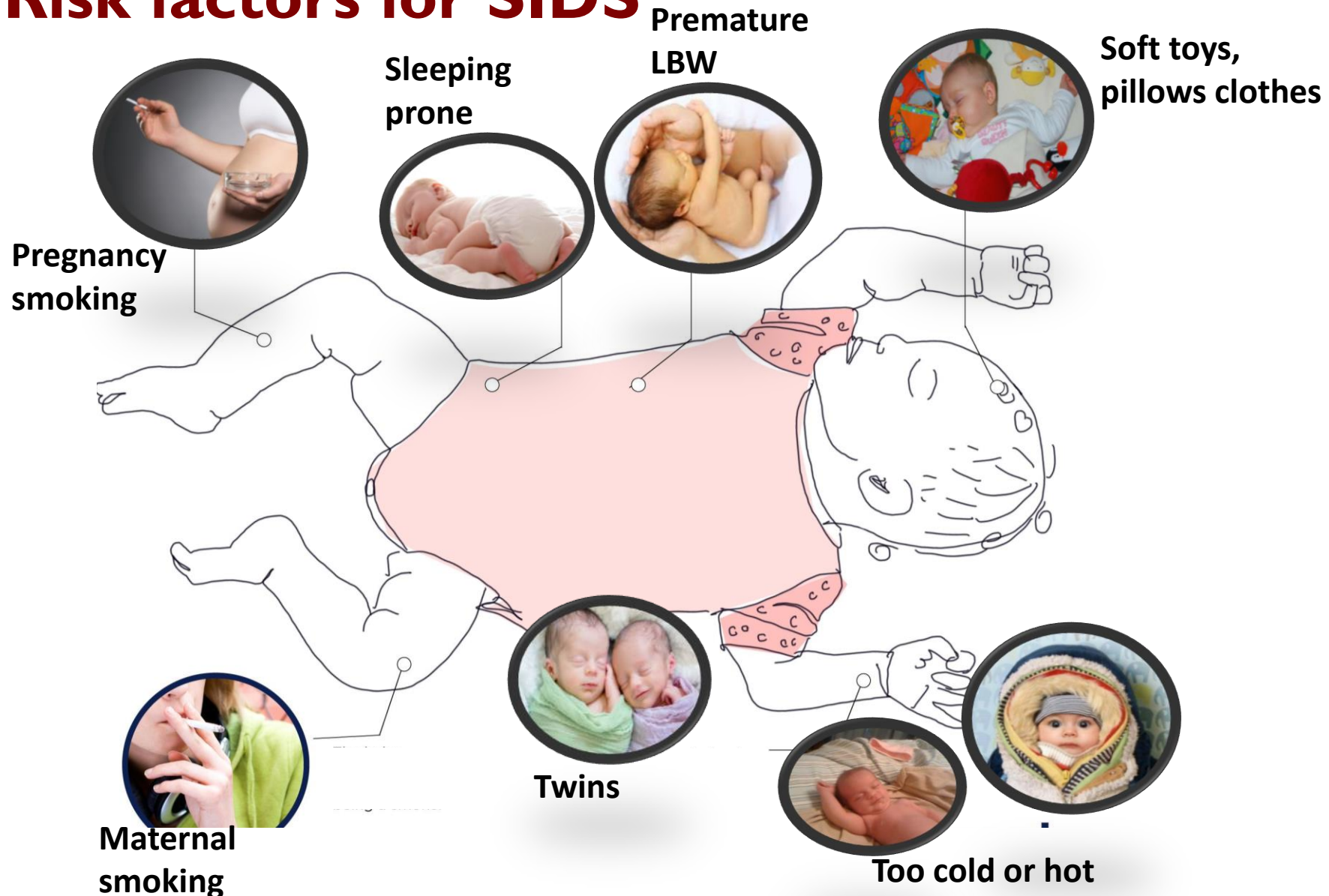


EXCLUDE CONT.

- Recent fall or other injury.
- History of religious, cultural, or ethnic remedies.
- Cause of death due to natural causes other than SIDS.
- Prior sibling deaths.
- Previous encounters with police or social service agencies.
- Request for tissue or organ donation.
- Pre-terminal resuscitative treatment.
- Death due to trauma (injury), poisoning, or intoxication.
- Suspicious circumstances.
- Other alerts for pathologist's attention.



Risk factors for SIDS



Wedged between





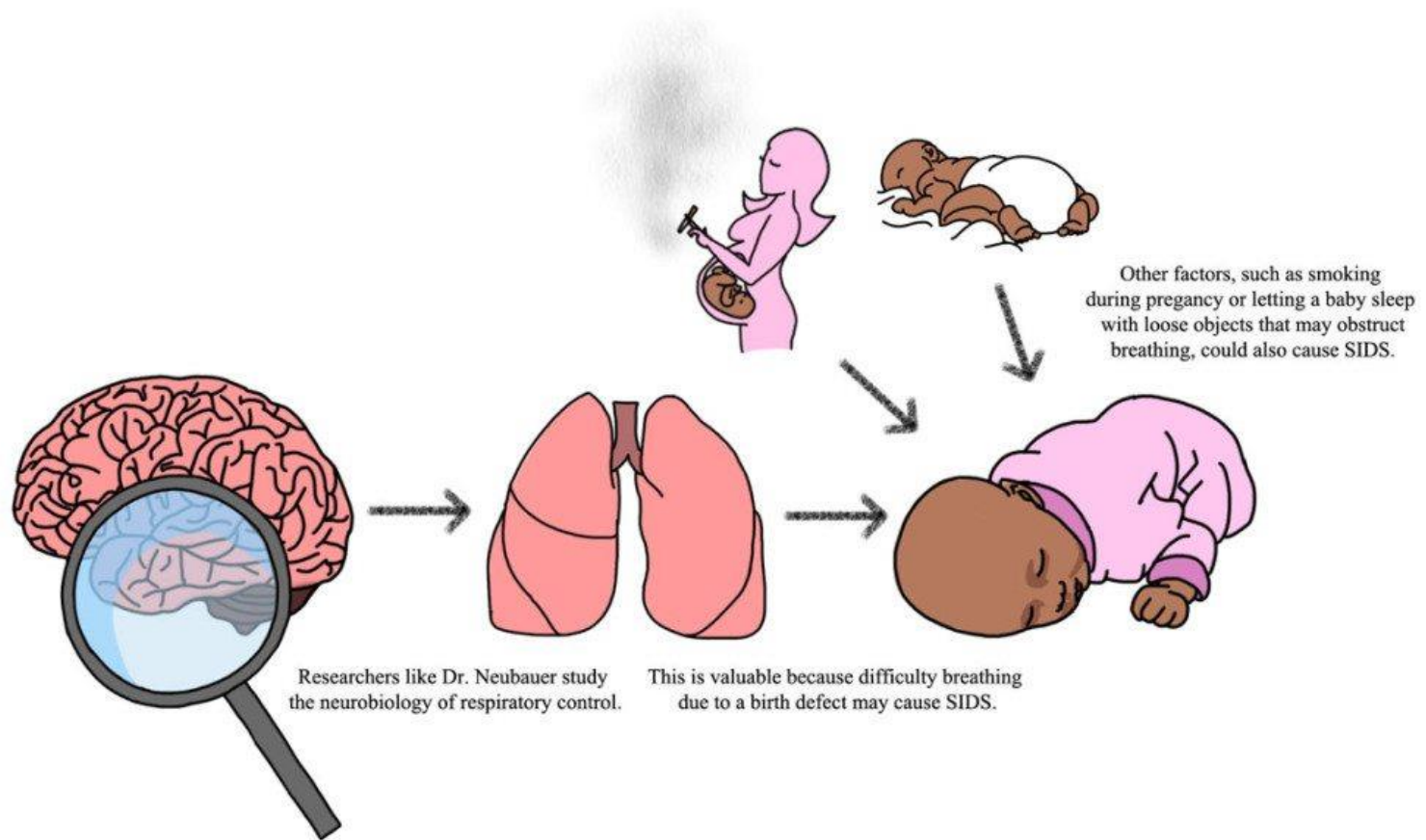




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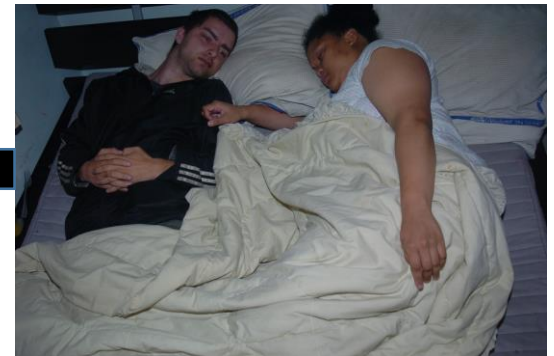
Proposed mechanisms



Various hypothesis for neurophysiological basis

- Persistence of fetal reflex responses into the neonatal period
 - Amplification of inhibitory cardiorespiratory reflex responses
 - Reduced excitatory cardiorespiratory reflex responses.







CAUSE OF DEATH STATEMENTS IN SIDS

- Sudden, unexplained infant death.
- Sudden death during infancy: no identifiable cause.
- Consistent with the definition of Sudden Infant Death Syndrome.
- Consistent with Sudden Infant Death Syndrome.
- Sudden Infant Death Syndrome.



Factors influencing SIDS deaths

- Age –2-7 months- peak 3-4months, rare after 9 months
- (Hyattsville, MD: National Center for Health Statistics, June 26, 2001. DHHS Publication No. (PHS) 2001-1120.)
- Sex – slight excess in males (1:1.3)
- Seasonal Incidence- Increases in colder and wetter months

(Knight, B., Sudden death in infancy in Forensic Pathology 3rd ed. Arnold, 2004;451-460)

- Social class and housing- low socio-economic group.

(Taylor JA, Sanderson M. A reexamination of the risk factors for the sudden infant death syndrome. J Pediatric 1995;126:887-91)



Prevention



Keep your baby safe from
Sudden Infant Death Syndrome (SIDS)

Back is Best

*Lay me to sleep
close to you but in my
own bed, on my back,
with no bumpers, blankets
or bears*

COUNTY OF SONOMA
DEPARTMENT OF
HEALTH SERVICES

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CJ Foundation
for SIDS



A B C of prevention



Alone

Back

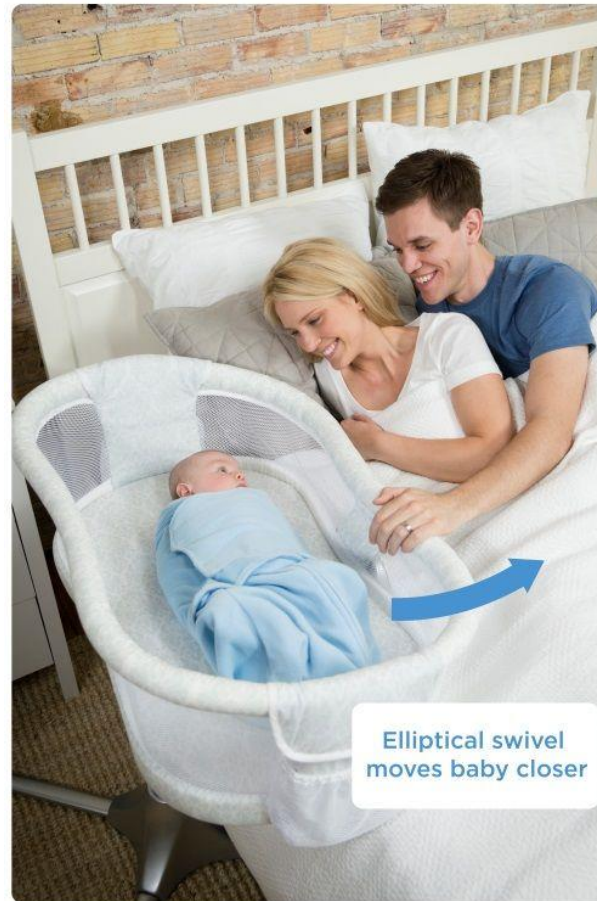
Crib



Prevention



Special bassinet for baby



Elliptical swivel
moves baby closer







References

1. International Statistical Classification of Diseases, 10th revision, [ICD-10] code R96.1
2. Cohle SD, Sampson BA. The negative autopsy: Sudden cardiac death or other? *Cardiovasc Pathol*. 2001;10(5):219-22
3. [Roulson J, Benbow EW, Hasleton PS. Discrepancies between clinical and autopsy diagnosis and the value of post mortem histology; a meta-analysis and review. *Histopathology*. 2005;47(6):551–9.]

