

Sudden infant death syndrome

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- SUDI = SUDDEN UNEXPECTED DEATH IN INFANTS

explained (infection – pneumonia, enterocolitis, cancer,
congenital condition – metabolic disorders, channelopathies –
cLQTS, etc).

30%

- SIDS = SUDDEN INFANT DEATH SYNDROME

- per exclusionem!

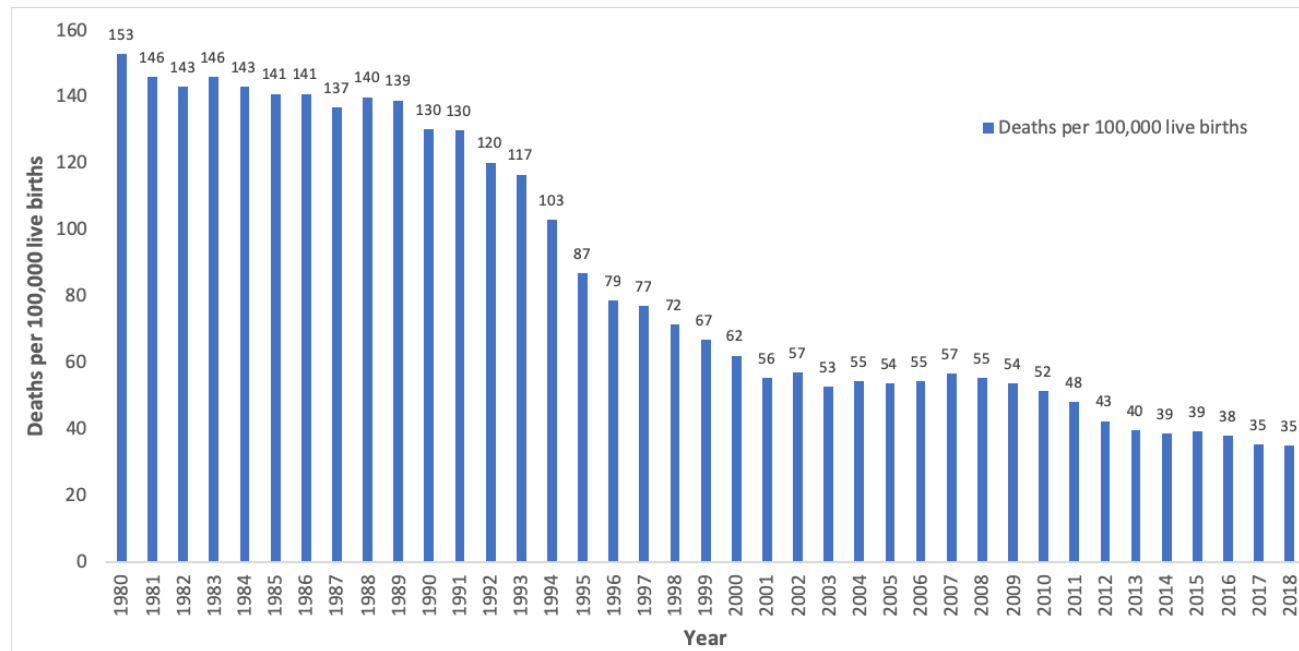
- sometimes known as “cot death”, “crib death” – is the sudden, unexpected and unexplained death of an apparently healthy baby

definition

- the first major definition ...1969 in Seattle, Beckwith
- “the sudden death of any infant or young child, which is unexpected by history, and in which a thorough postmortem examination fails to demonstrate an adequate cause for death”
- American Academy of Pediatrics
- San Diego 2004
- “the sudden unexpected death of an infant <1 year of age, with onset of the fatal episode apparently occurring during sleep, that remains unexplained after a thorough investigation, including performance of a complete autopsy and review of the circumstances of death and the clinical history”

SIDS

- STATISTICS – PREVALENCE – 0,22/ 1000 live birth babies, in Czech rep. 25 babies per year (in UK around 200 babies per year)
- in USA



Etiology of SIDS

- the exact cause of SIDS is unknown, but it's thought to be down to a combination of factors...multifactorial
- RISK FACTORS – age, sex, twins, season, social class of parents....

Triple risk model for SIDS

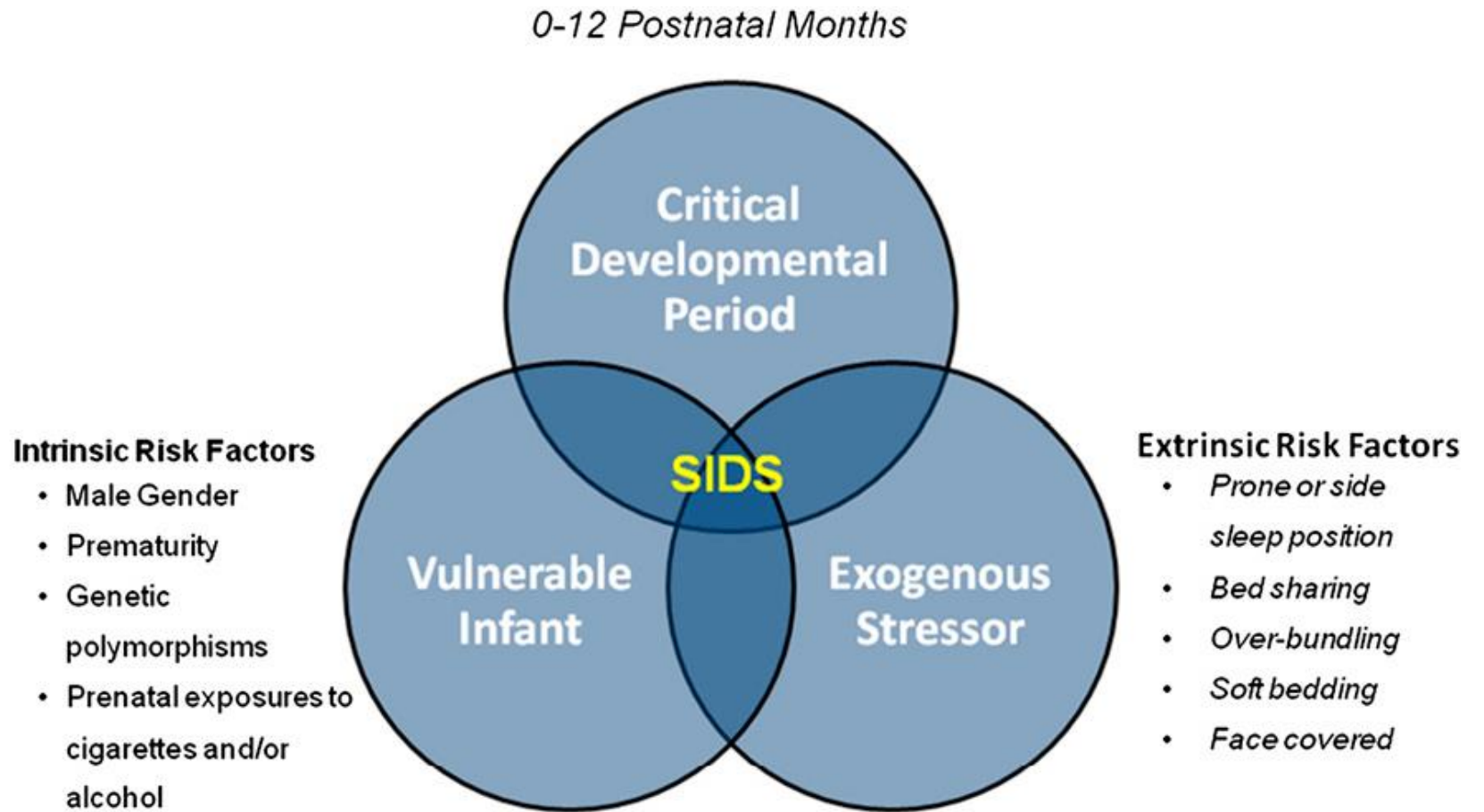


FIGURE 1

Risk factors

- **Age** ...2-7 months, peak incidence 3 months

Risk factors

- **Sex.....1: 1.3** female:male

Risk factors

- Prematurity
- Low birth weight

Risk factors

- **Twinning**....two times higher at least
- premature birth
- low birth weight
- no difference in incidence between identical or binovular twins

Risk factors

- **Seasonal incidence**....colder, wetter months in temperate zones
- october – april in Europe and North America
- respiratory infections are a trigger

Risk factors

- **Social class and housing**
- lower levels, social disadvantage
- alcohol & cigarets

The case history

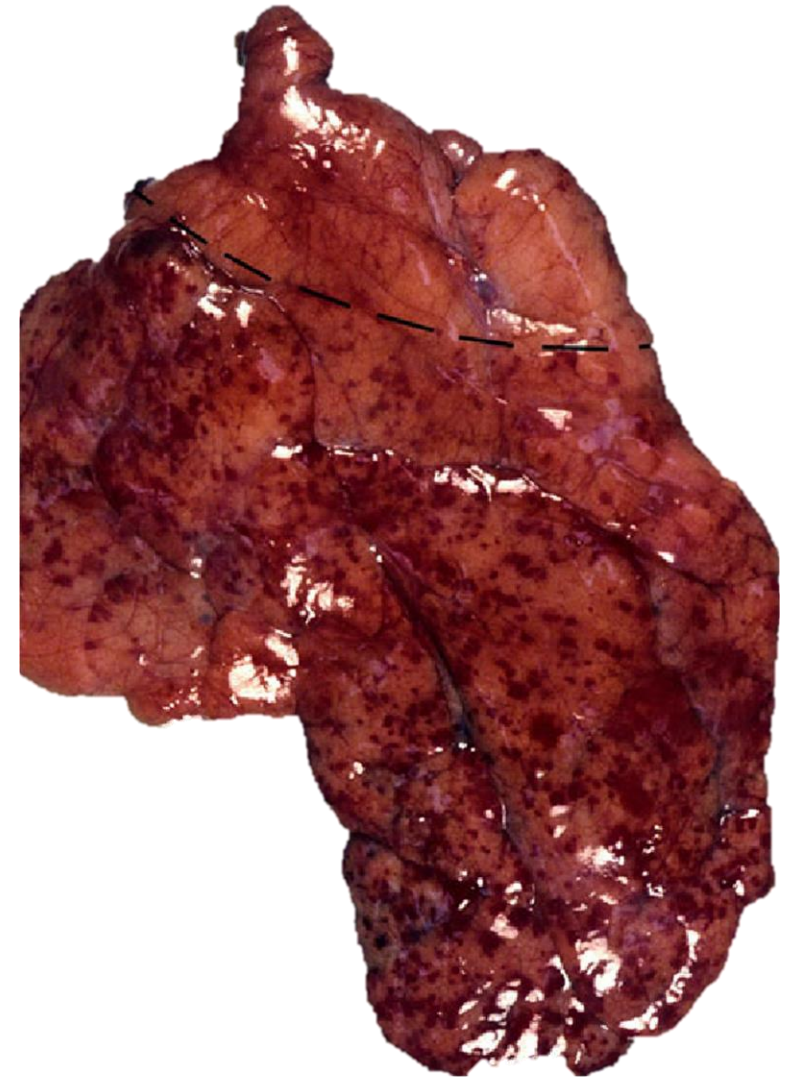
- similar
- well x trivial symptoms (upper respiratory infection or a bowel upset)
- put to sleep in the evening...found dead in the morning/before mid-morning
- unobserved
- rapid and silent

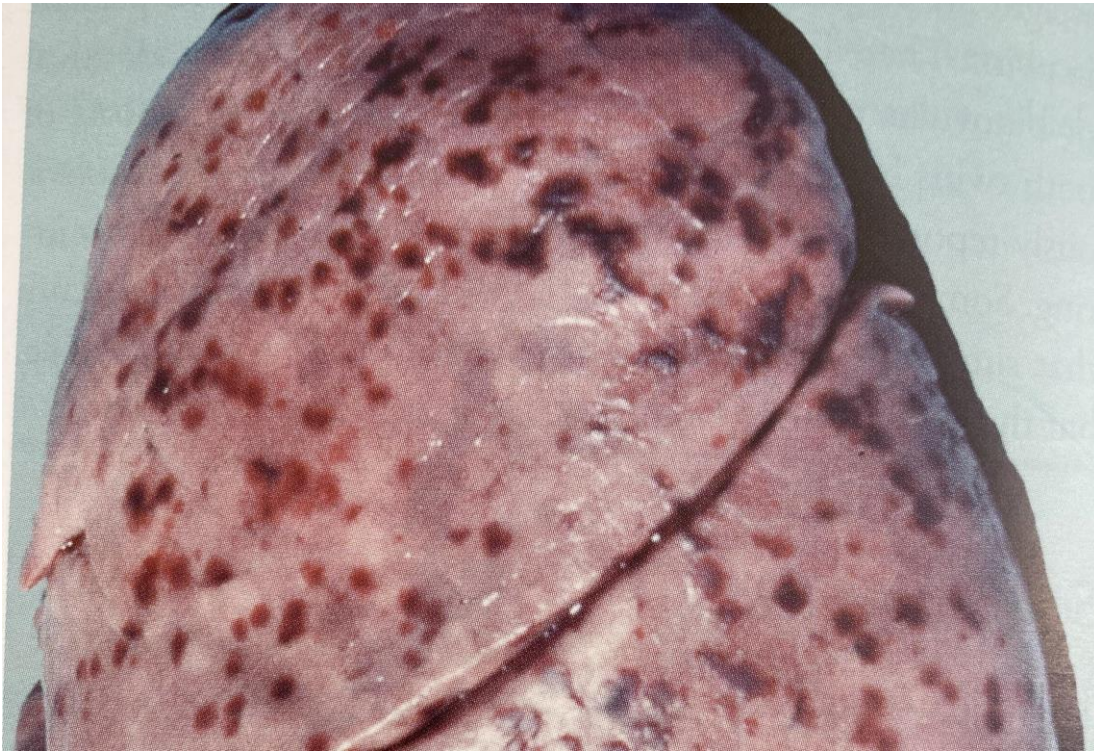
External findings

- slight oedema fluid exuding from the mouth/ stomach contents
- moist with sweat
- NO PETECHIAL HAEMORRHAGES in the face or eyes!
- some are found face down (pale area around nose and mouth)

Autopsy- internal findings

- non-specific
- petechial haemorrhages on the visceral pleura
- petechial haemorrhages in the thymus gland
- Beckwith's sign
- petechial or larger ecchymoses on the epicardial surface of the heart
-70%





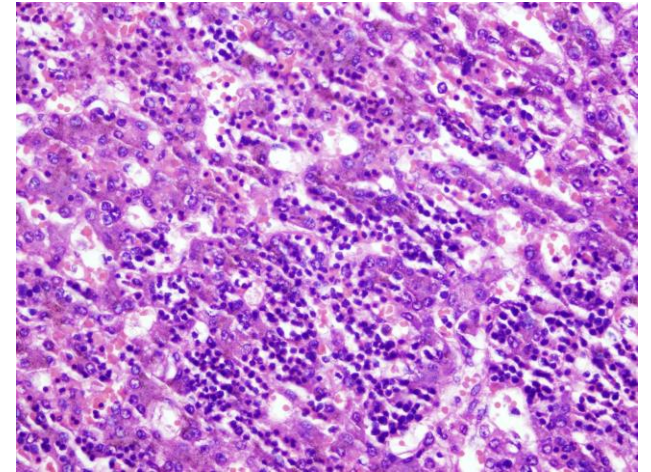
Petechial hemorrhages

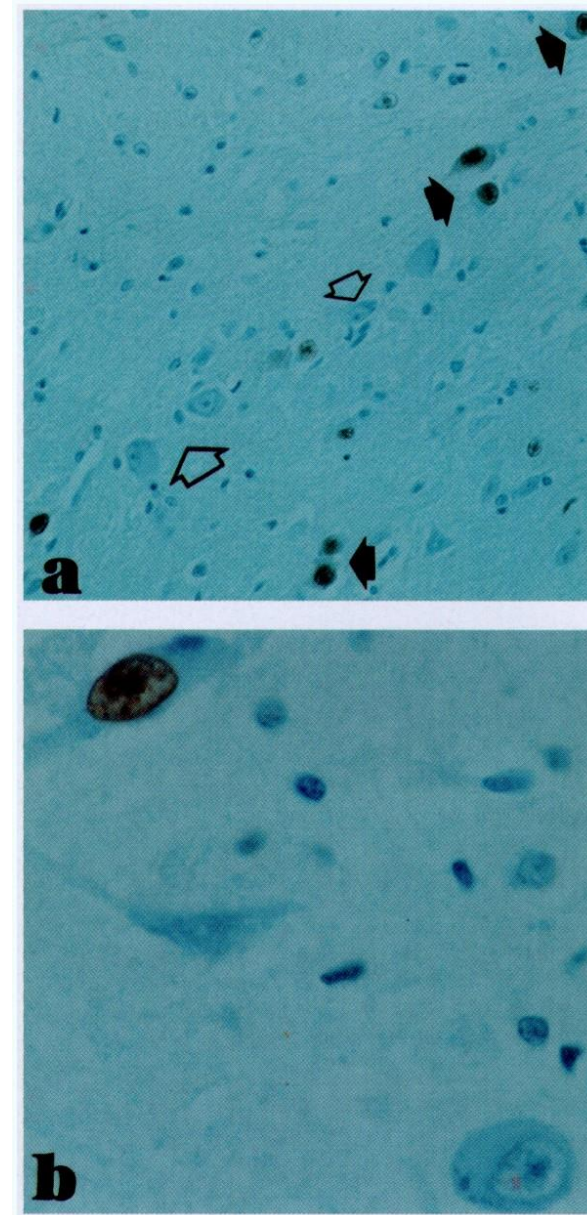
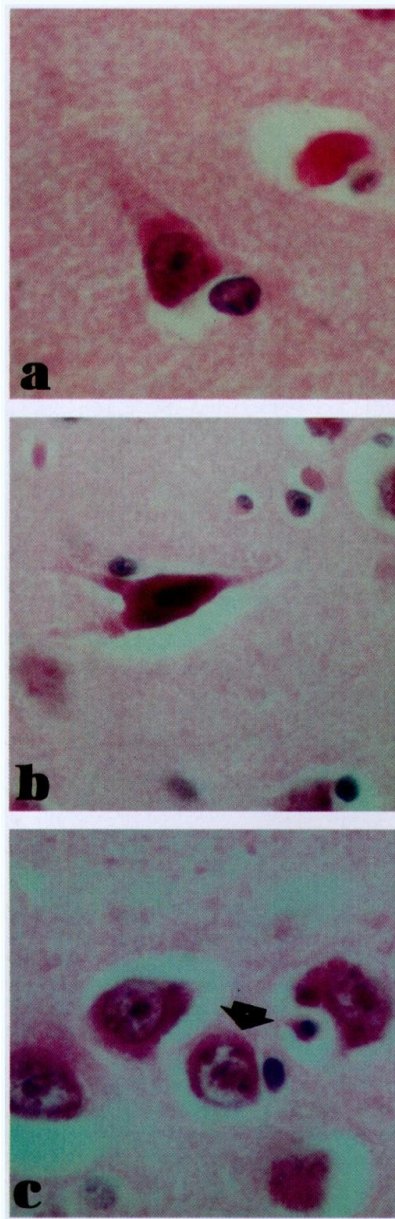
Autopsy- internal findings

- gastric contents in the air passages
- inflamed laryngeal and tracheobronchial mucosa
- moderate pulmonary oedema (patchy collapse x aerated zones)

Histological findings

- Lungs – peribronchial cell infiltration
- Slight signs of chronic hypoxia: gliosis of the brainstem, extramedullar hematopoiesis, thickening of the wall of small pulmonary arteries..





Waters, K., Meehan, B., Huang, J. *et al.* Neuronal Apoptosis in Sudden Infant Death Syndrome. *Pediatr Res*45, 166–172 (1999).

The SIDS autopsy

- **! exclusion of child abuse !**
- X-ray
- Histological survey
- Swabs
- Virological examination
- Genetic testing

Differentiating SIDS from external suffocation

- Absence of facial bruising, scratching

Diff. Dg.

- Cardiac channelopathies
- Metabolic disorders

DO

- always place your baby **on their back** to sleep
- place your baby in the **"feet to foot" position** – with their feet touching the end of the cot, Moses basket, or pram
- keep your baby's **head uncovered** – their blanket should be tucked in no higher than their shoulders
- let your baby sleep in **the same room** as you for the first 6 months
- use a **mattress that's firm**, flat, waterproof and in good condition
- **breastfeed** your baby, if you can

DON'T

- **do not share a bed with your baby** if they weighed under 2.5kg when they were born
- do not share a bed with your baby if you or your partner smoke or take recreational drugs, have had 2 or more units of alcohol or have taken medicine that causes drowsiness
- **do not smoke during pregnancy or let anyone smoke in the same room as your baby** – both before and after birth
- **do not let your baby get too hot or too cold** – a room temperature of 16C to 20C, with light bedding or a lightweight baby sleeping bag, will provide a comfortable sleeping environment for your baby

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Sudden death in older children

- Infections (laryngitis, epiglottitis...)
- Tumors (meduloblastoma, glioblastoma...bleeding)
- Cardiomyopathy (hypertrophic, arrhythmogenic...)



Thank you for your
attention!