

Policy and advice on co-sleeping

What does the evidence tell us?

Dr Judy Straton MD MPH FAFPHM
Director, Statewide Policy & Planning,
Child and Adolescent Community
Health Division, CAHS

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Overview

- Policy and advice: informed choice
- Definitions: SIDS/SUDI and bed-sharing/co-sleeping
- Changing epidemiology of SIDS
- Studies of bed-sharing/co-sleeping as a risk factor
- What the evidence shows
- Possible mechanisms of bed-sharing as a risk factor
- Limitations of the evidence - what we still don't know
- Assessing the risks and benefits



Policy and advice

Weighing up the risks and benefits

- **Policy** is about directives towards people over whom the policy makers have some control e.g safe sleeping in maternity units
- **Advice** is about giving people information so that they can make an informed choice in relation to risks and benefits

BOTH NEED TO BE BASED ON EVIDENCE

SIDS and SUDI



SIDS (San Diego definition, 2004)

Sudden and unexpected death of an infant

- Under one year of age,
- Onset of the lethal episode apparently during sleep,
- Death remains unexplained after a thorough investigation, (complete autopsy, review of the circumstances of death and clinical history)

SIDS and SUDI



- SUDI - sudden and unexpected death of an infant (less than 12 months)

Includes deaths due to SIDS and other undetermined causes

Includes explained as well as unexplained deaths

- **Explained:** infection, cardiac, metabolic, accidents (including unsafe sleep environment), non-accidental injury
- **Unexplained:** SIDS, “undetermined or unclassified”

Co-sleeping/Bed-sharing



Co-sleeping:

- Sharing a sleep surface with another person (usually adult) **when the adult is asleep**
- Includes bed-sharing and couch-sharing
- Bed-sharing used interchangeably with co-sleeping
- Room sharing, on a different sleep surface, is not classed as co-sleeping

Changing epidemiology of SIDS

- Decline in national SIDS mortality rate from 2.2 deaths per 1000 live births in 1986 to 0.3 per 1000 in 2005 (86% reduction)
- Reduction in other risk factors (esp prone sleeping and maternal smoking)
- Co-sleeping now **relatively** more important. Co-sleeping in increased proportion of SIDS deaths (12% to 50% in UK), but number of deaths in parental bed has halved (Blair et al, 2006)

Studies of bed-sharing as a risk factor for SIDS

- **Case control studies** : cases of SIDS; controls population based, information about a “reference” sleep
- **Odds ratio**: measure of the increased risk of SIDS associated with a particular risk factor (OR>1 = inc risk)
- **Adjusted odds ratio** (taking into account other factors)
- **95% confidence interval** about the odds ratio - range in which we can be 95% confident that the true value lies
- If confidence interval includes 1 not significant

Year	Authors	Location	Design	Sample size	Findings re bed-sharing and SIDS
2007	Ruys et al	Netherlands	Case control	138 cases Pop data from infant welfare clinics - 1628	Babies < 4 months Age gradient: 9 fold risk in first month, 4 fold at 1-2 months, not sig from 3 months on (adj for smoking)
2006	Blair et al	UK (five regions) Avon study	Case control	325 cases 1300 controls	No excess risk from bed-sharing with non-smoking parents provided baby not preterm or <2500 gm
2006	McGarvey et al	Ireland	Case control	287 cases 831 controls	Increased risk for babies < 10 weeks old, even in non-smoking parents. Risk increased 3 fold if low BWt
2005	Tappin et al	Scotland	Case control	123 cases 263 controls	Increased risk for babies less than 11 weeks, even if non-smoking parents
2004	Carpenter et al	European Union ECAS	Case control	745 cases 2411 controls	If mother non-smoking inc risk only in first 8 weeks
2004	Vennemann et al	Germany	Case control	333 cases 998 controls	Significantly increased risk only if smoking mother

What the evidence shows



European Concerted Action on SIDS (ECAS) Carpenter 2004

SIDS, BED SHARING AND MATERNAL SMOKING

Smoking and bed-sharing	Adjusted OR (95% CI)
Mother did not smoke or bed share	1
Mother did not smoke and shared bed	1.56 (0.91-2.68)
Mother smoked <10 did not share bed	1.52 (1.1 – 2.09)
Mother smoked >10 did not share bed	2.43 (1.76 – 3.36)
Mother smoked and shared bed	17.7 (10.3 – 30.3)

OR for SIDS associated with bed sharing progressively greater for younger infants

What the evidence shows



Scottish SIDS study (Tappin et al 2005)

SIDS, CO-SLEEPING, BABY'S AGE AND MATERNAL SMOKING

Age	Adjusted OR (95% CI)
<u><11 weeks:</u>	10.2 (2.99 - 34.8)
Non-smoking mother	8.01 (1.20 – 53.3)
Smoking mother	12.21 (2.57 – 58)
<u>>11 weeks</u>	OR 1.07 (0.32 - 3.56)

72% of bedsharing SIDS deaths in infants <11 weeks

What the evidence shows



Avon Study, UK (Blair et al 2006)

SIDS, CO-SLEEPING AND PRE-TERM AND LOW BIRTHWEIGHT INFANTS

Sleeping place	Adjusted OR (95% CI)	P value
<u>Normal weight</u>		
By parents' bed	1	
Co-sleeping (smoke)	9.11 (4.12 – 20.22)	<0.0001
Co-sleeping (don't smoke)	1.12 (0.30 – 4.27)	0.86
Another room	5.18 (2.59 – 10.38)	<0.0001
<u>Small at birth</u>		
By parents' bed	1	1
Co-sleeping (smoke)	37.41 (5.83 -239.86)	<0.0001
Co-sleeping (don't smoke)	15.18 (1.02 – 225.5)	0.048
Another room	79.45 (18.03 – 350.20)	<0.0001

Co-sleeping and accidental suffocation



- 416 infants < 8 months suffering accidental suffocation deaths in cribs and adult beds notified to US Consumer Product Safety Commission in 1995-98 (Scheers et al, 2003)
- Compared with sleep locations in population survey- National Infant Sleep Position Study (4220 infants) 1995-98

Co-sleeping and suffocation

Risk of suffocation death in cribs compared with adult beds per 100,000 infants < 8 months old

Cribs				Adult beds			
Deaths 1995-1998	Living infants in cribs	Risk	95%CI	Deaths 1995-1998	Living infants in adult beds	Risk	95% CI
68	10 851 403 (70%)	0.63	0.49-0.79	348	1 366 184 (9%)	25.5	22.8-28.2
Sensitivity analysis (double estimate of living infants in adult beds)							
				348	2 732 368 (18%)	12.7	11.4-14.1
Sensitivity analysis (overlying deaths removed)							
				279	1 366 184	20.4	18.0 -22.8

Possible mechanisms of death associated with co-sleeping



SIDS

- Unsafe sleep surfaces - soft bedding creating pockets of exhaled air
- Elevated carbon dioxide
- Overheating - heavy bedclothes
- Number of co-sleepers - increased risk with multiple family members in bed

SLEEP ACCIDENTS

- Suffocation
 - e.g Entrapment between bed and wall, obstruction of airway
- Overlaying
 - Adult affected by alcohol or other drugs or excessively tired
 - Multiple co- sleepers

Limitations of the evidence

What we still don't know

- Most studies examine SIDS rather than SUDI (i.e. deaths diagnosed as due to suffocation are not included)
- Difficulty of distinguishing between SIDS and suffocation
- Inconsistencies in classification of SUDI by pathologists
- Uncertainty about the prevalence of co-sleeping in the population or in sub-groups: difficult to assess the absolute risk
- More research needed on sleep accidents
- Need more research on benefits of co-sleeping (mainly qualitative and therefore discounted)

Risks and benefits



- Risks of co-sleeping
 - Increased risk of SIDS in young babies (<2-3 months), and those preterm and low birthweight
 - Risk increased by smoking in pregnancy and parental smoking after birth
 - Little evidence of increased risk of SIDS after 2-3 months if no parental smoking
 - Increased risk of suffocation compared with crib sleeping, but absolute risk is low

What is the size of the risk?

Sudden unexpected deaths in infancy by cause of death NSW 2002 (adapted)

Cause of death	Number	Percentage	Deaths per 10,000 live births
SIDS	110	59.1	4.2
Undetermined	37	19.9	1.4
Accidental threats to breathing	10	5.4	0.38
Diseases and morbid conditions	22	11.8	0.84
Other external causes	7	3.8	0.27
Total	186	100.0	7.2

Risks and benefits



- **Benefits of co-sleeping**
 - Helps support and maintain breastfeeding
 - Helps with settling and comforting babies
 - Helps with maternal-infant attachment

Conclusion



- There is an increased risk of sudden and unexpected infant death with co-sleeping in some circumstances
- The risk is small in absolute terms
- Need to present information in a balanced way so that people can assess the risks and benefits
- Information about safe co-sleeping is vital. Note that there is no choice for many people

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