ORIGINAL ARTICLE

Sudden infant death syndrome and sleeping position in pre-term and low birth weight infants: an opportunity for targeted intervention

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Arch Dis Child 2006;**91**:101–106. doi: 10.1136/adc.2004.070391

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Accepted 17 May 2005
Published Online First 24 May 2005

Aims: To determine the combined effects of sudden infant death syndrome (SIDS) risk factors in the sleeping environment for infants who were ''small at birth'' (pre-term (<37 weeks), low birth weight (<2500 g), or both).

Methods: A three year population based, case-control study in five former health regions in England (population 17.7 million) with 325 cases and 1300 controls. Parental interviews were carried out after each death and reference sleep of age matched controls.

Results: Of the SIDS infants, 26% were ''small at birth'' compared to 8% of the controls. The most common sleeping position was supine, for both controls (69%) and those SIDS infants (48%) born at term or ⩾2500 g, but for ''small at birth'' SIDS infants the commonest sleeping position was side (48%). The combined effect of the risk associated with being ''small at birth'' and factors in the infant sleeping environment remained multiplicative despite controlling for possible confounding in the multivariate model. This effect was more than multiplicative for those infants placed to sleep on their side or who shared the bed with parents who habitually smoked, while for those ''small at birth'' SIDS who slept in a room separate from the parents, the large combined effect showed evidence of a significant interaction. No excess risk was identified from bed sharing with non-smoking parents for infants born at term or birth weight ⩾2500 g.

Conclusion: The combined effects of SIDS risk factors in the sleeping environment and being pre-term or low birth weight generate high risks for these infants. Their longer postnatal stay allows an opportunity to target parents and staff with risk reduction messages.

Low birth weight and pre-term delivery are characteristics associated with sudden infant death syndrome (SIDS). These vulnerable infants are often nursed in the prone position after the resolution of acute respiratory illness,[1–3] and many midwives and neonatal nurses use the side sleeping position at the time of discharge from hospital because of a perceived risk of aspiration in the supine position,[4] despite a lack of forensic, pathological, or epidemiological evidence to substantiate these fears.[5] If this practice persists until discharge, it is likely to be emulated by parents in their homes.

As Oyen and colleagues[6] found, both infant prematurity and placing infants to sleep on the side carried a significant individual risk, but the combined effect was multiplicative, possibly from vulnerable infants rolling into, and not being able to extricate themselves from, the prone position.[7 8] Recent studies in the British Isles[9–11] have shown that only 2–3% of families place their infant prone, but 20–50% still place their infant to sleep on the side, despite widespread advice against this since 1996.[7]

We report the results of an investigation into the combined effects of risk factors associated with the infant sleeping environment for infants of low birth weight or short gestation. Although not a homogeneous group, infants who are either preterm or of low birth weight are routinely identified as requiring closer (and commonly more prolonged) observation and care in hospital after birth. There is thus an increased opportunity to offer specific advice on risk reduction for SIDS if appropriate.

METHODS

This study uses data from the Confidential Enquiry into Stillbirths and Deaths in Infancy, specifically looking at Sudden Unexpected Deaths in Infancy (the CESDI SUDI study). The methods of the study have been described in detail elsewhere.[7 12–14] Briefly, this was a large, three year, population based case-control study from 1993 to 1996. The study area was a mixture of rural and urban communities, predominantly white with a socioeconomic mix of study controls comparable to the 1991 Census data.[12] Research ethics approval was obtained in all districts. The study included all SUDI (both explained and unexplained) of infants aged 1 week to 1 year from a total study population of 17.7 million. Four age, date, and locality matched controls for each case were selected, two older, and two younger (within 2 weeks of age of the index infant).

Each bereaved family was visited within a few days of the death, and detailed information was collected at interview and from medical records. Similar information was collected from controls, within one week of the death of the index infant. A period of sleep (the ''reference'' sleep) corresponding to the time of day during which the index baby died was identified in the 24 hours prior to interview.

A multidisciplinary committee established the cause of death of the index infants by reviewing all records and the results of a postmortem examination to a standard protocol.[13–15]

Definitions

We defined infants as ''small at birth'' if they were <37 completed weeks of gestation, or had a birth weight <2500 g, or both. Infants described as ''bed sharing'' were those found after the last sleep co-sleeping with at least one parent (on a mattress, sofa, or chair). Infants described as sleeping in ''another room'' were those infants sleeping outside the parental bedroom at night or alone in a room during a

Table 1 Pre-term and low birth weight infants

	SIDS		Controls		Univariate*		Multivariate†	
Factor	n	(%)	n	(%)	OR (95% CI)	p value	OR (95% CI)	p value
Pre-term								
No	260	(80.5)	1218	(94.6)	1.00 (ref group)		1.00 (ref group)	
Yes	63	(19.5)	70	(5.4)	3.82 (2.55 to 5.72)	<0.0001	7.96 (3.25 to 19.48)	<0.0001
Low birth weight								
No	251	(77.2)	1226	(94.9)	1.00 (ref group)		1.00 (ref group)	
Yes	74	(22.8)	66	(5.1)	5.34 (3.53 to 8.06)	<0.0001	5.09 (2.30 to 11.27)	<0.0001
Small at birth‡								
No	238	(73.7)	1185	(92.1)	1.00 (ref group)		1.00 (ref group)	
Yes	85	(26.3)	101	(7.9)	3.76 (2.64 to 5.36)	<0.0001	5.23 (2.52 to 10.89)	<0.0001

*Adjusted for infant age in a conditional logistic regression model.
†Adjusted for infant age, birth centile, higher parity, parental unemployment, moving house more than once in the last year, young maternal age, maternal smoking during pregnancy, postnatal exposure to tobacco smoke, any episode of lifelessness, and for the last sleep: change in usual routine, recent infant illness, lack of recent infant sleep, recent maternal alcohol consumption, sleeping position put down (side or prone), bed sharing, sofa sharing, sleeping outside the parental bedroom, using a dummy, bedding and clothes higher than 10 tog, and found with head covered by bedding.
‡Infants born pre-term (<37 completed week) or below 2500 g.

daytime sleep. Those described as sleeping ''by'' the parents were in a cot, in the same room as a parent.[16] Infant health prior to the last sleep was determined using a modified form of the Cambridge ''Baby Check'', a previously validated system[14 17] used to quantify the degree of infant illness. A ''change in routine'' involved any change that affected routine infant care such as going on holiday, visiting distant friends, or receiving visitors. A value of thermal resistance for clothing and bedding greater than 10 tog was defined as being excessive.[7 18] Post-natal age was defined as the age from birth; ''corrected'' age was defined as the sum of gestational (i.e. post-menstrual) age and post-natal age minus 40 weeks.

Statistical methodology

Data that were not normally distributed were described by using medians and inter-quartile ranges (IQR), and the Mann-Whitney test (two sided) was used to test differences between these distributions. Odds ratios, 95% confidence intervals, and p values were calculated, taking into account matching, with conditional logistic regression by using the statistical package SAS.[19] The factors adjusted for in the multivariate model were all significant in the univariate and multivariate analyses at the 5% level after stepwise logistic regression. Because of the time lag to arrange interviews the control infants were about 10 days older than the index infants. The variable for infant age was therefore included in all univariate and multivariate analyses. Combined effects were constructed using terms to represent each factor (with the other factor not present) and a term that combined the two factors when both were present. Interactions were constructed by including the multiplicative term of two factors. To avoid the likelihood of empty cells, each particular combination of effects or interactive effect were looked at in a separate multivariate model.

Research ethics approval was obtained from each local committee in all five of the old health regions involved (South-West, Yorkshire, Trent, Northern, and Wessex).

RESULTS

Over the three year period there were over 470 000 births and 456 SUDI, of which 363 were attributed to SIDS. The 93 subsequently explained deaths were mainly due to previously unrecognised infection, and accidental or non-accidental injury.[12–14] Interviews were completed for 325 SIDS deaths (90%), together with all 1300 age matched controls.

At least four times as many SIDS infants as controls were either born pre-term (20% *v* 5%) or weighing <2500 g (23% *v* 5%). Each of these factors was significant in the univariate analysis and again significant when put singly in a multivariate model adjusting for all the other factors in the study (table 1). Of all the pre-term infants in the study, 65% were of low birth weight while 62% of low birth weight infants were pre-term. When both factors were put into the multivariate model, low birth weight became non-significant. Defining our group of interest as those infants ''small at birth'' (gestation <37 weeks and/or birth weight <2500 g) identified 26% of the SIDS infants and 8% controls, a difference that was highly significant in both the univariate and multivariate analyses.

The ''small at birth'' SIDS infants were 2 weeks older at death (105 days, IQR 53–153) than the remaining SIDS (90 days, IQR 58–151), although this difference was not statistically significant (Mann-Whitney test: $p = 0.78$). The median corrected age of the ''small at birth'' SIDS infants (58 days, IQR 19–113) was significantly less than for the remaining SIDS (83 days, IQR 54–143) (Mann-Whitney test: $p < 0.0001$).

Table 2 shows the combined effect between infants ''small at birth'' and sleeping position, both put down and found for the final sleep. For those not ''small at birth'' there was a significant multivariate risk for being put down in a non-supine sleeping position. Despite controlling both for possible confounders of low birth weight such as maternal smoking during pregnancy and moderating factors of infant sleeping position such as recent illness, heavy wrapping, and head covering, every sleeping position was associated with a higher multivariate risk for infants who were ''small at birth'' than for those who were not; an increased risk of 14.96 from 2.27 for infants put down on the side and 24.37 from 8.09 for infants put down prone. There was, however, no significant interaction between the risk of being ''small at birth'' and the non-supine sleeping positions. The risk associated with side or prone sleeping position for infants who were ''small at birth'' was close to that predicted from the multiplicative effect of the separate factors, suggesting that sleeping position had an effect independent of either preterm delivery or low birth weight. A similar pattern was observed when looking at the sleeping position in which the infants were finally found.

The supine sleeping position was the most common position in which to be put down for control infants, whether they were ''small at birth'' (72% supine) or not (69% supine). This was also true for those SIDS infants who were not ''small at birth'' (48% supine). Among the ''small at birth'' SIDS infants the side position was the one most commonly used (48%) for the final sleep; over a quarter (11/39) of these

Table 2 Combined effect of infants small at birth and infant sleeping position

		SIDS		Controls		Univariate*			Multivariate†		
		n	(%)	n	(%)	OR (95% CI)	p value‡	p value§	OR (95% CI)	p value‡	p value§
Position put down	**Small at birth**										
Back	No	111	(35.2)	815	(63.6)	1.00 (ref group)			1.00 (ref group)		
Side	No	89	(28.3)	329	(25.7)	2.02 (1.44 to 2.84)	<0.0001		2.27 (1.25 to 4.11)	0.007	
Front	No	33	(10.5)	36	(2.8)	9.29 (5.08 to 17.01)	<0.0001		8.09 (2.60 to 25.13)	0.0003	
Back	Yes	29	(9.2)	73	(5.7)	2.98 (1.73 to 5.12)	<0.0001		4.63 (1.58 to 13.55)	0.005	
Side	Yes	39	(12.4)	26	(2.0)	9.13 (4.93 to 16.90)	<0.0001	0.37	14.96 (5.10 to 43.93)	<0.0001	0.77
Front	Yes	14	(4.4)	2	(0.2)	62.81 (12.06 to 327.12)	<0.0001	0.33	24.37 (2.42 to 245.26)	0.007	0.58
Position found	**Small at birth**										
Back	No	86	(28.3)	948	(76.8)	1.00 (ref group)			1.00 (ref group)		
Side	No	51	(16.8)	115	(9.3)	5.01 (3.13 to 8.01)	<0.0001		7.20 (2.98 to 17.39)	<0.0001	
Front	No	86	(28.3)	72	(5.8)	22.50 (12.95 to 39.09)	<0.0001		47.19 (14.52 to 153.40)	<0.0001	
Back	Yes	30	(9.9)	81	(6.6)	4.58 (2.57 to 8.17)	<0.0001		5.22 (1.58 to 17.20)	0.007	
Side	Yes	23	(7.6)	16	(1.3)	10.92 (4.95 to 24.12)	<0.0001	0.14	37.41 (7.74 to 180.70)	<0.0001	0.45
Front	Yes	28	(9.2)	3	(0.2)	186.07 (38.50 to 899.29)	<0.0001	0.49	139.63 (16.78 to 1162.16)	<0.0001	0.36

*Adjusted for infant age in a conditional logistic regression model.
†Adjusted for infant age, birth centile, higher parity, parental unemployment, moving house more than once in the last year, young maternal age, maternal smoking during pregnancy, postnatal exposure to tobacco smoke, any episode of lifelessness, and for the last sleep: change in usual routine, recent infant illness, lack of recent sleep, recent maternal alcohol consumption, bed sharing, sofa sharing, sleeping outside the parental bedroom, using a dummy, bedding and clothes higher than 10 tog, and found with head covered by bedding.
‡p value relates to the significance of the combined effect of the odds ratio.
§p value relates to the interactions of positioned side × being small at birth and positioned prone × being small at birth.

Table 3 Combined effect of infants small at birth and where the infant slept

		SIDS		Controls		Univariate*			Multivariate†		
Where slept	**Small at birth**	n	(%)	n	(%)	OR (95% CI)	p value‡	p value§	OR (95% CI)	p value‡	p value§
By parents bed	No	74	(23.2)	620	(48.2)	1.00 (ref group)			1.00 (ref group)		
Co-sleeping with parents (smoke)¶	No	68	(21.3)	76	(5.9)	7.74 (4.79 to 12.51)	<0.0001		9.11 (4.12 to 20.22)	<0.0001	
Co-sleeping with parents (don't smoke)**	No	8	(2.5)	99	(7.7)	0.78 (0.35 to 1.76)	0.55		1.12 (0.30 to 4.27)	0.86	
Another room††	No	85	(26.6)	389	(30.3)	2.30 (1.52 to 3.46)	<0.0001		5.18 (2.59 to 10.38)	<0.0001	
By parents bed	Yes	30	(9.4)	61	(4.7)	4.00 (2.29 to 6.99)	<0.0001		3.68 (1.44 to 9.39)	0.006	
Co-sleeping with parents (smoke)¶	Yes	24	(7.5)	8	(0.6)	22.93 (8.37 to 62.80)	<0.0001	0.57	37.41 (5.83 to 239.86)	0.0001	0.79
Co-sleeping with parents (don't smoke)**	Yes	2	(0.6)	7	(0.5)	4.03 (0.74 to 22.0)	0.11	0.75	15.18 (1.02 to 225.50)	0.048	0.29
Another room**	Yes	28	(8.8)	25	(1.9)	9.30 (4.61 to 18.76)	<0.0001	0.88	79.45 (18.03 to 350.20)	<0.0001	0.047

*Adjusted for infant age in a conditional logistic regression model.
†Adjusted for infant age, birth centile, higher parity, parental unemployment, moving house more than once in the last year, young maternal age, any episode of lifelessness, and for the last sleep: change in usual routine, recent infant illness, lack of recent sleep, recent maternal alcohol consumption, sleeping position put down (side or prone), using a dummy, bedding and clothes higher than 10 tog, and found with head covered by bedding.
‡p value relates to the significance of the combined effects odds ratio.
§p value relates to the interactions between co-sleeping in the parental bed × being small at birth and sleeping in a room outside the parental bedroom × being small at birth.
¶Either found co-sleeping in the parental bed or found co-sleeping on a sofa or chair with at least one parent who usually smokes.
**Either found co-sleeping in the parental bed or found co-sleeping on a sofa or chair with parent or parents who do not smoke.
††Infants who slept outside the parental room for night-time sleep or slept alone in a room for day-time sleeps.

infants were found prone compared to none of the 26 ''small at birth'' controls placed on their side.

The combined effects of ''small at birth'' infants and the sleeping environment for the last sleep are shown in table 3. An infant sleeping in a cot by the parental bed was the most common environment among the controls and was used as the reference group. For those SIDS infants not small at birth the multivariate risk was significant if they bed shared with parents who smoked (OR = 9.11, 95% CI 4.12 to 20.22) or if they slept in another room (OR = 5.18, 95% CI 2.59 to 10.38), while no risk was identified for bed sharing with non-smoking parents (OR = 1.12, 95% CI 0.30 to 4.27). For each of these sleeping environments, the infants ''small at birth'' were at a much increased risk. The combined risk for ''small at birth'' SIDS infants sleeping in another room from the parent was particularly high (OR = 79.45, 95% CI 18.03 to 350.20) and yielded a significant multivariate interactive effect ($p = 0.047$), despite no such interaction in the univariate analysis. The median post-natal age of the 26 ''small at birth'' SIDS infants who were bed sharing was 53 days (IQR 32–96), while for the ''small at birth'' SIDS infants who slept in another room, the median post-natal age was 138 days (IQR 92–181). The ''corrected'' age for these two groups of SIDS infants was 16 days and 92 days respectively. Of the ''small at birth'' SIDS who were bed sharing at the time of death, 8% (2/26) were sharing a sofa with a parent, 63% (15/24) usually bed shared, and 92% (24/26) slept with parents who smoked, a similar proportion of parental smoking to the 90% (68/76) found among term SIDS infants found bed sharing.

The combined effects of other factors found to be significant during the last sleep for infants ''small at birth'' are shown in table 4. None of these factors yielded a significant interactive effect with being ''small at birth''. The univariate analysis suggested a multiplicative risk between these factors and being ''small at birth'' which remained multiplicative for some factors in the multivariate model after controlling for confounding. A change in infant routine, having mild signs and symptoms of illness, and lack of a dummy among routine users prior to death yielded a high combined multivariate risk for infants ''small at birth'' despite controlling for socioeconomic confounders while thermal stress in terms of over-wrapping and head covering was less significant.

For ''small at birth'' infants the largest population attributable fraction for a single risk factor was being placed in the side position (42%, 95% CI 22 to 57) for the last sleep. Being placed in the prone position (31%, 95% CI 14 to 44), co-sleeping with parents who smoked (37%, 95% CI 19 to 51), and being left to sleep alone in another room (27%, 95% CI 3 to 45) also carried a high degree of attributable risk. For those ''small at birth'' infants either put down in a non-supine position or somewhere other than a cot by the parental bed the attributable fraction was 75% (95% CI 50 to 88).

DISCUSSION

In this study the only known risk factor in the infant sleeping environment to significantly interact with being ''small at birth'' was those infants who slept in a separate room from their parents for the last sleep. Given the number of interactions tested, the fact there was no significant univariate interaction and that the multivariate significance was borderline, this could be a finding put down to chance. Certainly the analysis suggests that most risk factors in the infant sleeping environment interact no differently with pre-term or low birth weight infants than term infants and those born with a higher weight. However, the combined effects of the risk of being ''small at birth'' and these factors remain largely independent of each other and multiplicative despite controlling for many other confounding factors. The resultant risks for these combined effects are therefore a realistic amplification of joining together infant vulnerability with adverse circumstances in the sleeping environment. Bed sharing with habitual smokers, being placed on the side to sleep, and sleeping in a separate room from the parents are significant risk factors for the term and higher birth weight infants, but for the more vulnerable these risks are 4-fold, 7-fold, and 15-fold higher respectively. This implies that many of the deaths among these babies could be avoided simply by addressing the known, modifiable risk factors.

Despite its potential limitations,[12–14] the large sample size, very high ascertainment, and rapid access to index families in this study ensure the data are robust. The broad geographical coverage ensures that the results should be generalisable, but the very small numbers of families from ethnic minority backgrounds limits the extrapolation of our findings to groups who may have different cultural infant care practices.

Despite recommendations in many countries that infants should always be placed supine to sleep, reports from the USA,[20] and East[21] and West[22] Europe show that over 70% of maternity hospitals still advocate the use of the side sleeping position for infants at the time of discharge. The main reason given was a fear of aspiration, but worryingly, the second most commonly cited reason was that this was a preventative measure for SIDS.

As well as infant sleeping position the combined effect of being found bed sharing with an adult was also highly significant for SIDS infants who were ''small at birth''. These SIDS infants were typically aged 7–8 weeks from birth, or 2–3 weeks past their due date, which may suggest initially that entrapment or parental overlying may have been important factors. However many of these infants routinely bed shared, and would have been likely to be at their most vulnerable in the first 4 weeks after birth, thus it seems surprising that the peak age of death is almost a month later. As previously reported,[17] very few of the bed sharing SIDS infants slept with non-smoking parents, making it difficult to generalise the risk to the whole population.

An even larger multivariate combined effect was observed for those ''small at birth'' SIDS infants, typically between 3 and 6 months post-natal age (''corrected'' age between 1 and 4 months) who slept in a different room from their parents. Current advice suggests the safest place for infants to sleep is in a cot by the parental bed for the first 6 months.[23] This advice is particularly apt for the most vulnerable infants who are ''small at birth''. Perhaps the advice needs to be even further extended, suggesting that infants are also put down in the same room as parents for daytime sleeps.

This re-examination of the data suggests that virtually all of the apparent risk associated with bed sharing with a non-smoking parent[8 16] applies only to pre-term and low birth weight infants. This important information should be incorporated into advice for parents of such infants.

Further significant multivariate combined effects were also observed for ''small at birth'' SIDS infants and factors in the 24 hours prior to death suggesting some sort of physiological disruption, such as mild signs and symptoms of illness, change in family routine, or habitual dummy users not using a dummy for the final sleep. This is consistent with the triple risk model proposed by Filiano and Kinney,[24] which suggests an underlying vulnerability of the infant, a critical development period, and exogenous stressors.

The intensity and duration of relationships between professionals and parents of ''small at birth'' babies, provides a good opportunity to target families with appropriate and relevant advice. Advice by itself is unlikely to be followed if professional practice is at variance with it. If parents are to be encouraged to put down their ''small at birth'' babies in the

Table 4 Combined effect of infants small at birth and factors during the last sleep

		SIDS		Controls		Univariate*			Multivariate†		
		n	(%)	n	(%)	OR (95% CI)	p value‡	p value§	OR (95% CI)	p value‡	p value§
Change in routine last 24 hours¶	**Small at birth**										
No	No	190	(59.6)	1028	(80.0)	1.00 (ref group)			1.00 (ref group)		
Yes	No	46	(14.4)	156	(12.1)	1.95 (1.28 to 2.99)	0.002		2.30 (1.02 to 5.19)	0.046	
No	Yes	63	(19.7)	92	(7.2)	3.62 (2.46 to 5.32)	<0.0001		5.25 (2.42 to 11.39)	<0.0001	
Yes	Yes	20	(6.3)	9	(0.7)	10.60 (4.15 to 27.08)	<0.0001	0.44	11.79 (2.03 to 68.54)	0.006	0.65
Illness in last 24 hours**	**Small at birth**										
No	No	184	(58.2)	1097	(85.4)	1.00 (ref group)			1.00 (ref group)		
Yes	No	50	(15.8)	87	(6.8)	4.03 (2.52 to 6.44)	<0.0001		4.30 (1.88 to 9.83)	0.0006	
No	Yes	65	(20.6)	97	(7.5)	3.42 (2.32 to 5.05)	<0.0001		5.32 (2.44 to 11.62)	<0.0001	
Yes	Yes	17	(5.4)	4	(0.3)	30.49 (8.68 to 107.02)	<0.0001	0.25	20.14 (3.08 to 131.60)	0.002	0.89
Having no dummy	**Small at birth**										
No	No	94	(30.2)	608	(47.4)	1.00 (ref group)			1.00 (ref group)		
Yes	No	135	(43.4)	574	(44.7)	1.55 (1.12 to 2.15)	0.009		2.30 (1.26 to 4.20)	0.007	
No	Yes	28	(9.0)	51	(4.0)	3.67 (2.09 to 6.45)	<0.0001		3.09 (0.98 to 9.71)	0.054	
Yes	Yes	54	(17.4)	50	(3.9)	5.81 (3.53 to 9.57)	<0.0001	0.96	17.50 (6.14 to 49.86)	<0.0001	0.15
Found with head covered	**Small at birth**										
No	No	182	(60.5)	1137	(89.2)	1.00 (ref group)			1.00 (ref group)		
Yes	No	41	(13.6)	37	(2.9)	10.48 (5.49 to 20.02)	<0.0001		20.11 (7.01 to 57.71)	<0.0001	
No	Yes	70	(23.3)	100	(7.8)	4.06 (2.74 to 6.00)	<0.0001		5.20 (2.47 to 10.97)	<0.0001	
Yes	Yes	8	(2.7)	1	(0.1)	53.99 (5.57 to 523.27)	0.0006	0.84	124.38 (2.59 to 5985.45)	0.01	0.93
Covered by >10 tog††	**Small at birth**										
No	No	192	(60.4)	1094	(85.1)	1.00 (ref group)			1.00 (ref group)		
Yes	No	41	(12.9)	90	(7.0)	2.58 (1.63 to 4.08)	<0.0001		2.86 (0.99 to 8.23)	0.052	
No	Yes	70	(22.0)	93	(7.2)	3.73 (2.55 to 5.45)	<0.0001		5.66 (2.60 to 12.31)	<0.0001	
Yes	Yes	15	(4.7)	8	(0.6)	10.11 (3.59 to 28.46)	<0.0001	0.93	7.47 (0.83 to 67.29)	0.073	0.43

*Adjusted for infant age in a conditional logistic regression model.
†Adjusted for infant age, birth centile, higher parity, parental unemployment, moving house more than once in the last year, young maternal age, maternal smoking during pregnancy, postnatal exposure to tobacco smoke, any episode of lifelessness, and for the last sleep: sleeping position put down (side or prone), bed sharing, sofa sharing, sleeping outside the parental bedroom, and if not being tested for an interaction; also the following: recent infant illness, recent maternal alcohol consumption, lack of recent sleep, change in usual routine, using a dummy, bedding and clothes higher than 10 tog, and found with head covered by bedding.
‡p value relates to the significance of the combined effects odds ratio.
§p value relates to the interactions between the different factors and being small at birth, e.g. change in routine × being small at birth.
¶Change in usual parental routine and infant care in the 24 hours prior to the last sleep (including going on holiday, visiting distant friends, or receiving visitors).
**Defined as those who scored more than 7 (i.e. moderate illness or worse) using a revised version of the Cambridge Baby Check score.
††Clothing and bedding (excluding bedding under the infant or nappy) with a total thermal resistance greater than 10 tog.

supine position, this must become the standard practice (in all but the rarest of situations) at the earliest stage possible (i.e. after resolution of any initial respiratory distress) in all maternity and neonatal care facilities.

Placing babies prone or on the side in hospital should be viewed as a potentially hazardous intervention—carrying a higher risk than most medications used in infancy—and one that should be used only for clear medical indications. If the mothers of pre-term or low birth weight infants all placed their infants supine in a cot by the parental bed, this would potentially reduce the overall SIDS rate by a further 20%, and save up to 100 extra infants lives each year in England and Wales.

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Funding: Grant bodies for this study include funds from (i) the National Advisory Body for the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI), (ii) the Foundation for the Study of Infant Deaths (FSID), and (iii) Babes in Arms. Dr Peter Blair has been funded by all three bodies for work on this project

Competing interests: none

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And what if you die or get old?

These are the words which tumbled out of my 6 year old grandson's mouth as I walked him home (to his home) from school. We had been talking about how he had got on at school that day, including his successes and anxieties, and I had assured him that he could always confide in me. Little did I know what anxieties lurked in the subconscious, even at that age.

Those issues of life and death which span the entire age range also concern ''medical'' grandfathers, hence the reawakening of my interest in paediatrics, including the *Archives*, during my retirement. After all, notwithstanding the increasing trend towards specialisation, the diverse branches of clinical medicine are not mutually exclusive, and useful insights can be shared across the specialties.

My grandson was reassured to know that I was not going to die for some time yet, which, according to him, meant until he reached 12 or 20. And also, according to him, I was not old yet.

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