

CLEARING THE SMOKE AWAY FROM BED-SHARING

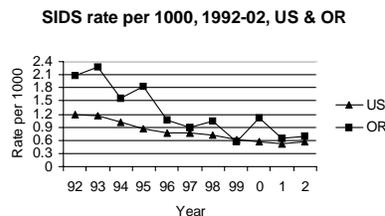
IN 1854 A CHOLERA EPIDEMIC WAS raging through London. John Snow mapped the residences of cholera cases, and found clustering of cases around the Broad Street water pump. Snow removed the handle of the pump and shut down the epidemic. For this, he is fondly remembered as the "Father of Epidemiology."^{*}

One of the most striking aspects of Snow's achievement was that he deduced the means of transmission without understanding the bacteriologic basis of cholera. Like Snow and cholera, there are many diseases the causes of which we do not fully understand. Nevertheless, epidemiologic analyses can point to "pump handles" for us to remove in order to reduce morbidity and mortality.

This edition of the *CD Summary* reviews what we know from epidemiologic studies about preventing Sudden Infant Death Syndrome (SIDS), even though we do not fully understand its causes. This article discusses emerging evidence that maternal smoking during pregnancy alone or in combination with bed-sharing increases the risk of SIDS.

SIDS RATES IN THE US & OREGON

SIDS is the leading cause of death among infants aged 2-12 months in Oregon.¹ Largely as a result of the national "Back to Sleep" campaign, SIDS mortality in the United States decreased by 52% in the 1990s.² Similarly, Oregon SIDS mortality decreased by 42%, from 1.19 per 1000 live births in 1992 to 0.69 in 2002.



SIDS DEFINITION

SIDS is the sudden death of an infant less than one year of age that remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history. The "Triple-Risk Model" provides the most accepted theory as to how SIDS deaths occur.³

TRIPLE-RISK MODEL

The Triple-Risk Model posits that three factors must be present for SIDS to occur. First, the infant must have an underlying weakness in homeostatic control of breathing. Second, the infant must be in a critical development period for homeostatic control of breathing, typically within the first months of life, when the baby's central nervous system is rapidly maturing. Third, an external stressor increases the infant's vulnerability to disruption of breathing homeostasis. Important stressors are stomach sleeping, infection, and exposure to tobacco smoke.

SIDS REDUCTION – MODIFIABLE RISK FACTORS

Sleep position. Following the "Back to Sleep" campaign implemented in 1994, the proportion of infants placed to sleep on their backs dramatically increased from 30% to about 83%.⁴ In recent years, however, the prevalence of

supine sleep appears to have reached a plateau. To reduce SIDS mortality further, it will be necessary to reinforce current prevention practices, identify other modifiable risk factors, and research new approaches.

Smoking. Infants whose mothers smoke during or after pregnancy are six times more likely to die of SIDS than infants of non-smoking mothers.⁵⁻¹¹ It has not been possible to distinguish the impact of prenatal from postpartum smoking as the two are highly correlated.

In 2003, 12.1% of women in Oregon reported smoking during the last trimester of pregnancy and 15.5% reported smoking within a few months after the baby was born (Oregon PRAMS).

Emerging risk – bed sharing and smoking. In 2001, 20.8% of Oregon mothers reported always bed-sharing, 14.0% almost always, 38.9% sometimes and only 26.3% never.¹²

Among infants of smoking mothers, the risk of SIDS is 5-10 times higher for infants who sleep with their mothers than infants who do not.^{8-11,13-15}

No significantly increased risk has been found for infants over 11 weeks old bed-sharing with non-smoking mothers. However preliminary evidence suggests a modestly increased risk for infants under 11 weeks.^{10,12,16}

If there is a risk to infants under 11 weeks, it must be balanced against the benefits of breastfeeding and the association between bed-sharing and the duration of breastfeeding. Further studies may tilt recommendations one way or the other.¹⁶

* Actually, the epidemic was already ending by the time Snow figured it out. But part of epidemiology is taking credit whenever one can.



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SO WHAT SHOULD YOU RECOMMEND TO YOUR PATIENTS?

- Encourage women to discontinue smoking before, during, and after pregnancy.
- Instruct parents to place infants on their backs to sleep. This message should be reinforced with grandparents and other caregivers.
- Emerging evidence suggests that infants of smoking mothers who sleep in their parents' bed have an increased risk of SIDS, and that infants under 11 weeks old of non-smoking mothers who bed-share are also at increased risk. Current recommendations from the American Academy of Pediatrics Task Force on SIDS recommends: "Although bed-sharing rates are increasing in the United States for a number of reasons, including facilitation of breastfeeding, the task force concludes that the evidence is growing that bed sharing, as practiced in the United States and other Western countries, is more hazardous than the infant sleeping on a separate sleep surface and, therefore, recommends that infants not bed share during sleep. Infants may be brought into bed for nursing or comforting but should be returned to their own crib or bassinet when the parent is ready to return to sleep." This

recommendation for nonsmoking mothers is controversial and vigorously debated. Any risks associated with bed-sharing by nonsmoking mothers should be balanced against the benefits of breastfeeding and the association of bed-sharing with breastfeeding. Encourage nonsmoking mothers who bed-share to place infants supine, eliminate soft/thick/loose surfaces near the infant, and avoid places where the infant could become wedged.

RESOURCES

"Back to Sleep" information at www.nichd.nih.gov/sids/sids.cfm.

Safe sleep guidelines at www.sidscenter.org.

Nursing consultant for infant death issues: Cyndi Durham, RN, BSN at cyndi.j.durham@state.or.us.

SIDS web resources including Safe Sleep Guidelines at www.oregon.gov/DHS/ph/ch/bf1/sids.shtml.

You can refer patients for assistance with quitting smoking to the Oregon Quit Line at 877-270-7867 and www.smokefreefamilies.org has resources for health professionals.

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