Alcohol and Recreational Drugs – The Research

One of the earliest published accounts of alcohol's effects on infant health appeared in 1899, reporting a higher mortality rate among infants of mothers who consumed alcohol[1]. Though this study did not specifically differentiate between pre and postnatal alcohol use, it pre-empted later epidemiological research, which has consistently identified associations between prenatal alcohol exposure or postnatal parental alcohol use, and adverse infant outcomes.

Multiple case-control and retrospective studies have investigated the relationship between alcohol consumption and sudden infant death syndrome (SIDS). Notably, a large Europe-wide collaboration in the 1990s took a standardised approach for analysing SIDS risk factors across populations. This found a two-fold increased risk of SIDS for infants whose mother had consumed more than three alcoholic drinks in the previous 24 hours[2]. Furthermore, a temporal analysis showed patterns linking alcohol consumption to SIDS incidence. A study of all SIDS deaths in the United States between 1973 and 2006, found SIDS rates increased on weekends and during holidays when alcohol consumption is higher, with a notable spike around New Year's Eve[3].

High levels of alcohol use have also been linked to an increased risk of SIDS. A large retrospective cohort study of over 77,000 births in Western Australia between 1983 and 2007 found that infants of mothers with alcohol-related diagnoses had elevated risks of both SIDS and non-SIDS mortality. There was a three-fold increase in the risk of SIDS for infants of mothers with an alcohol-related diagnosis at any time, rising to nine-fold for infants of mothers whose alcohol-related diagnosis was only in the year postpartum[4]. Similarly, a Danish population study of infant deaths from 1996 to 2002 reported increased mortality among infants of mothers who consumed four or more drinks weekly or engaged in three or more binge episodes[5].

Laboratory studies have explored the physiological mechanisms through which alcohol exposure may influence infant vulnerability to SIDS. One study reported that infants exposed to alcohol *in utero* exhibited elevated heart rates and reduced heart rate variability when subjected to postural tilt tests, suggesting impaired autonomic regulation[6]. Animal studies provide corroborative evidence- neonatal rats exposed to prenatal ethanol showed disrupted respiratory control and reduced responsiveness to hypoxic events[7].

Beyond alcohol, research has explored the impact of other psychoactive substances. A Californian study found that paternal, but not maternal, marijuana use was associated with an increased risk of SIDS after adjustment for confounders (Klonoff-Cohen 2001), while a New Zealand study reported no significant association between maternal cannabis use and SIDS following multivariate adjustment [8].

Cocaine and opiate exposure have also been the focus of academic research. A meta-analysis of US studies was conducted in the 1980s and 1990s on prenatal cocaine use. This found a four-fold increased risk of SIDS in infants exposed to cocaine compared with infants who were not exposed, and that this risk was not significantly different to infants who had been exposed to any combination of heroin, methadone or alcohol[9]. The authors concluded that the elevated risk is tied to prenatal substance exposure, rather than to cocaine specifically.

Finally, infant co-sleeping with an adult who has consumed more than two units of alcohol, or after taking illicit drugs, have been investigated as a particular hazard. An analysis of case-controlled studies in the UK in the 1990s and 2000s examined this as a specific risk, pooled together for a sample of 400 SIDS deaths. This found an 18-fold increase in the risk of SIDS[10] for infants

sleeping with an adult who has consumed alcohol. More recent work, comparing this data with cases in 2020, revealed that a larger proportion of SIDS cases in 2020 involved co-sleeping with a parent who had recently consumed alcohol, compared with earlier decades. It also showed a higher proportion of SIDS infants had slept with a parent who had taken an illicit drug[11]. Collectively, these findings show a strong and consistent association between co-sleeping, parental alcohol consumption and heightened SIDS risk, and this was a potentially modifiable risk.

References

1. Sullivan, W. A note on the influence of maternal inebriety on the offspring. 1899. *J. Ment. Sci.* **45**, 489–507 (1899).

2. Carpenter, R. G. *et al.* Sudden unexplained infant death in 20 regions in Europe: case control study. *The Lancet* **363**, 185–191 (2004).

3. Phillips, D. P., Brewer, K. M. & Wadensweiler, P. Alcohol as a risk factor for sudden infant death syndrome (SIDS). *Addict. Abingdon Engl.* **106**, 516–525 (2011).

4. O'Leary, C. M., Jacoby, P. J., Bartu, A., D'Antoine, H. & Bower, C. Maternal alcohol use and sudden infant death syndrome and infant mortality excluding SIDS. *Pediatrics* **131**, e770-778 (2013).

5. Strandberg-Larsen, K., Grønboek, M., Andersen, A.-M. N., Andersen, P. K. & Olsen, J. Alcohol drinking pattern during pregnancy and risk of infant mortality. *Epidemiol. Camb. Mass* **20**, 884–891 (2009).

6. Fifer, W. P., Fingers, S. T., Youngman, M., Gomez-Gribben, E. & Myers, M. M. Effects of alcohol and smoking during pregnancy on infant autonomic control. *Dev. Psychobiol.* **51**, 234–242 (2009).

7. Dubois, C. J., Kervern, M., Naassila, M. & Pierrefiche, O. Chronic ethanol exposure during development: disturbances of breathing and adaptation. *Respir. Physiol. Neurobiol.* **189**, 250–260 (2013).

8. Scragg, R. K. *et al.* Maternal cannabis use in the sudden death syndrome. *Acta Paediatr. Oslo Nor. 1992* **90**, 57–60 (2001).

9. Fares, I., McCulloch, K. M. & Raju, T. N. Intrauterine cocaine exposure and the risk for sudden infant death syndrome: a meta-analysis. *J. Perinatol. Off. J. Calif. Perinat. Assoc.* **17**, 179–182 (1997).

10. Fleming, P., Pease, A. & Blair, P. Bed-sharing and unexpected infant deaths: what is the relationship? *Paediatr. Respir. Rev.* **16**, 62–67 (2015).

11. Pease, A. *et al.* Changes in background characteristics and risk factors among SIDS infants in England: cohort comparisons from 1993 to 2020. *BMJ Open* **13**, e076751 (2023).

Frequently asked questions

What does the research show?

The link between parental or caregiver alcohol use and a baby's risk of SIDS has been recognised for more than a century, with the first scientific study published in 1899. Since then, studies have shown that drinking more than three alcoholic drinks in a day can double the chance of SIDS.

Research has also found that babies exposed to alcohol or recreational drugs during pregnancy, or whose parent or caregiver has an active alcohol use disorder are more vulnerable to SIDS. Notably, several large studies show that the risk becomes much greater when a baby co-sleeps with an adult who has been drinking or using drugs. This highlights the value of planning a safe sleep space for the baby whenever alcohol or drugs might be used.

Can I drink alcohol whilst caring for a baby?

You should not drink alcohol if you are caring for a baby. Alcohol affects everyone differently so if you're planning to drink, make sure there's a sober adult available to care for your baby. This is because alcohol affects your ability to respond to your baby's needs.

Can I drink alcohol whilst breastfeeding?

If you choose to drink alcohol whilst breastfeeding, it's important to plan ahead. If you know you'll be drinking, you might want to express some breastmilk beforehand to use while alcohol is still in your system. Alcohol passes into breastmilk at the same level as it's in your blood.

How long does alcohol stay in breastmilk?

Alcohol stays in your breastmilk for as long as it's in your bloodstream. Expressing milk after drinking won't speed up this process.

What is the key takeaway for families?

Babies need someone who can notice if they get into an unsafe situation and move them out of it. That's why we recommend that you stay in the same room as your baby, and that whoever is looking after the baby is drink and drug free. Research shows there is an increased risk of SIDS for an infant if their parent or caregiver has consumed alcoholic drinks, or recreational drugs. It's especially risky to co-sleep with a baby at these times. If you're planning to drink, make sure there's a sober adult available to care for your baby.