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Nicotine in Breast Milk Induces Insomnia in Babies

Smoking mothers affect infant's brain development

Smoking mothers are themselves responsible for this: nicotine in their breast milk shortens baby's sleep time, as found by a new research made at the Monell Chemical Senses Center. "Infants spent less time sleeping overall and woke up from naps sooner when their mothers smoked prior to breastfeeding," said lead author Dr. Julie A. Mennella, a psychobiologist at Monell. While many pregnant women quit or cut down on smoking, most of them take it up again after giving birth. "Because nicotine is not contraindicated during lactation, mothers may believe that smoking while breastfeeding will not harm their child as long as the child is not exposed to passive smoke. However, there has been very little research on either short- or long-term effects of nicotine delivered through breast milk," said Mennella. Nicotine is already known to affect the brain's development, causing long-term behavioral and learning impairment. The new research assessed the feeding behavior and sleep patterns of 15 breastfed infants, aged 2 to 7 months, over a 3.5 hour observation intervals on two different days. All mothers, current smokers, ceased smoking for at least 12 hours before each observation interval. Each of them smoked 1-3 cigarettes before the observation period on one day and abstained from smoking on the other. The mothers breastfed their babies on demand over the following 3.5 hours. Following each feed, they laid infants down on their backs in a crib or on the floor, while an actigraph attached to the infant's ankle measured activity and sleep patterns. The amounts of nicotine and cotinine (nicotine's major metabolite) were determined in breast milk samples obtained before each feed. The sleep time over the 3.5 hours dropped from a mean value of 84 minutes when mothers abstained to 53 minutes when they smoked, a 37% decrease in infant sleep time, both of the longest sleep bout (nap) and quiet sleep. The time amount of sleep loss was proportional to the nicotine dose received by the children from their mothers' milk. As the infants ingested the same quantity of breast milk on both days, it seems that they were accepting the tobacco flavor in milk. The same team had previously found that infants have higher enjoyment of flavors they received through breast milk. As children of smoker mothers are more prone to smoking as teenagers, it could be possible that the tobacco flavor during breastfeeding could make it more appealing later in life. Also, researchers had found that breast milk nicotine amounts reach the highest levels 30 - 60 minutes after smoking 1-2 cigarettes and clear by 3 hours after the smoking episode. "Lactating mothers who smoke occasionally can time their smoking episodes to minimize nicotine exposure to their child," said Mannella. "Concerns about tobacco flavor in their milk and disruptions of their infants' sleep may help motivate breastfeeding mothers to abstain from smoking."