Smoking throughout pregnancy may contribute to emotional problems in children *PODCAST*

DOI: 10.1038/NPP.2013.273

Smoking throughout pregnancy may have long-term effects on brain development and contribute to emotional problems in young children, according to a study published in *Neuropsychopharmacology*.

Up to 25% of women in the U.S., Denmark and Sweden report smoking during pregnancy, despite associations of prenatal tobacco exposure with negative behavioral and cognitive outcomes. Prenatal exposure to cigarettes is thought to alter brain structure, but little is known about how brain development is affected, or if the behavioral problems observed are mediated by these differences in brain morphology. Hanan El Marroun and colleagues assessed brain morphology along with behavioral and emotional functioning of 113 children aged 6-8 years old whose mothers reported smoking in a range from one cigarette a day to more than nine cigarettes per day during pregnancy. 17 of these mothers stopped smoking when they discovered they were pregnant, while 96 continued smoking throughout pregnancy. This was compared to 113 unexposed controls. The results suggest that children whose mothers continued smoking have smaller total brain volumes, with smaller cortical gray and
white matter volumes in particular, and exhibit more emotional problems, such as depressive symptoms and anxiety. The authors show that a reduction in the superior frontal cortex specifically, a brain area implicated in the regulation of mood states, was correlated with mood problems in the children whose mothers continued smoking. 

The authors suggest that the mechanisms through which tobacco might affect brain development include dysfunctional neuronal migration and lack of oxygen to the fetus due to narrowing of blood vessels. The results emphasize the importance of preventing and reducing cigarette smoking during pregnancy.

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