

Maternal smoking may increase newborns' discomfort

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A new research study being published in the October 15th issue of *Biological Psychiatry* suggests that maternal smoking may increase the level of distress of newborns.

Studies have consistently found that prenatal cigarette [smoke exposure](#) is associated with increased rates of behavior problems, irritability, attention-deficit/hyperactivity disorder, the risk of violent offenses, conduct disorder, adolescent onset of drug dependence, and the risk for criminal arrest in offspring. This study adds another potential negative outcome to the list of reasons for mothers to stop [smoking](#) while pregnant.

Most of the effects of tobacco either during pregnancy or on postnatal outcomes are attributed to nicotine. However, smoking is associated with reduced [monoamine oxidase A](#) (MAO-A) activity, enzymes that degrade brain neurotransmitters in smokers. Prenatal smoke exposure-induced low MAO-A activity in fetal life may dysregulate brain neurotransmission, creating a potential vulnerability to develop behavioral disorders later in life. This dysregulation can occur with or without interaction with nicotine's effect on the developing brain.

French scientists compared blood biomarkers of MAO-A activity in smoking and non-smoking pregnant women and in the cord blood of their newborns. They also assessed the newborns' comfort level during their first 48 hours of life. They found that MAO-A activity is reduced both in pregnant smokers and in their newborns. The newborns of

smoking mothers also showed significantly more discomfort than those of non-smoking mothers, potentially related to MAO-A inhibition.

Corresponding author Dr. Ivan Berlin explained that this paper's findings "may have implications for future research because it proposes a biological explanation for the previously demonstrated relationship between smoking during pregnancy and behavioral disorders in the offspring."

"We know that maternal smoking can negatively affect a newborn in many ways, such as contributing to low birth weight. Berlin and colleagues provide new evidence that the [newborns](#) of mothers who smoke experience more behavioral discomfort, and they suggest a mechanism that helps to explain the cause of this discomfort," commented Dr. John Krystal, Editor of *Biological Psychiatry*. Although additional studies are needed, this work highlights the importance of targeting pregnant women for help to stop smoking.

More information: The article appears in [Biological Psychiatry](#), Volume 66, Issue 8 (October 15, 2009)

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