Maternal Smoking and Behavior Problems

Researchers at the National Institute on Drug Abuse (NIDA) have revealed associations between a child’s prenatal exposure to smoking and specific patterns of abnormal behavior as a toddler, at school age, and as a teen. The researchers propose that these patterns form a continuum, united by an underlying theme of disrupted social information processing.

The research involved 448 boys, who were roughly age 7 when the study began. One hundred and sixty-six boys in this group had mothers who smoked during pregnancy. These boys developed the antisocial behavior pattern known as oppositional defiant disorder (ODD) at more than double the rate of the rest. Children with ODD demonstrate defiant, disobedient, and hostile behavior towards authority figures that persists for at least 6 months, and they are touchy, easily angered, and resentful. ODD is often considered a developmental precursor of conduct disorder (CD), a condition in older children and adolescents characterized by persistent antisocial behaviors such as lying, truancy, vandalism, and aggression.

Boys whose mothers smoked while pregnant did not have a higher incidence of attention deficit hyperactivity disorder (ADHD) without ODD than the non-exposed boys. However, the incidence of co-occurring ODD and ADHD – a combination that often results in chronic disruptive behavior problems – was nearly twice as high in the exposed group as in the non-exposed group. As the boys entered their teens, delinquent behavior began earlier and was more severe in the exposed group.

According to the NIDA researchers, all the children with ODD in the study were diagnosed in first grade, meaning the disorder developed in the first 5 or 6 years of life. According to the researchers, this study provides evidence of a coherent developmental pathway from prenatal exposure to cigarettes to a subsequent sequence of conduct problems. While
previous research established a link between prenatal exposure to cigarettes and conduct disorder in older children, this study is the first to establish connections to oppositional defiant disorder and to do so as early as first grade.

To view these NIDA research findings, please see “NIDA Notes: Research on Tobacco Addiction” or visit the website at [www.nida.nih.gov](http://www.nida.nih.gov)

For further information regarding issues related to maternal substance abuse, please contact Karen Kuehn Howell, Ph.D., at the Maternal Substance Abuse and Child Development Project, Emory University School of Medicine, Department of Psychiatry and Behavioral Sciences, 1256 Briarcliff Road, M.E.,320W, Atlanta, Georgia, 30306. You can also phone us at 404-712-9800 or visit our website at [http://www.emory.edu/MSACD](http://www.emory.edu/MSACD).

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