What Does the Research Tell Us Regarding Prenatal Exposure to Marijuana?

In a recent National Institute of Drug Abuse (NIDA) survey of the patterns and prevalence of substance abuse among pregnant women, 2.8 percent reported marijuana use during their first trimester of pregnancy. This indicates that marijuana is the most commonly used illicit drug and, after alcohol and tobacco, the most commonly used drug during pregnancy. What does the research tell us about the developmental implications of prenatal exposure to marijuana?

Of the longitudinal studies of marijuana use during pregnancy, most find few significant effects on growth parameters. In most published studies, there are few significant effects of marijuana use during pregnancy on birth weight, head or chest circumference, gestational age, or growth retardation.

Much of the existing information concerning the behavioral effects of prenatal exposure to marijuana comes from the Ottawa Prenatal Prospective Study and the work of Peter Fried and his colleagues. Fried finds that infants born to regular marijuana users had decreased rates of visual habituation and increased tremors. When these same children were examined at one year of age, however, no adverse effects of prenatal marijuana exposure were noted. Although some observations of a neurobehavioral effect on verbal ability and memory at 4-years of age was noted by Fried, this relationship did not persist after controlling for other important variables such as home environment.

A few research findings indicate that prenatal marijuana exposure has an effect on child behavior problems at preschool and school age. Prenatal marijuana exposure in the first and third trimesters predicted significantly increased hyperactivity, inattention, and
impulsivity symptoms at age ten. It remains to be seen whether these results indicate a true behavioral difference in the attention-related domain or a lowered parental tolerance.

Finally, it is important to note the difficulty in isolating the effects of marijuana exposure from its correlates and from environmental risk factors. Variables such as socioeconomic status, access to medical and social services, and the presence or absence of a male figure in the household have a significant influence on child development. Maternal mental health, social support networks, stressful life events such as exposure to violence or domestic abuse are also important variables that impact long-term developmental outcomes. Many of these environmental risk factors are directly associated with maternal marijuana use, making it difficult to identify the impact of prenatal marijuana exposure in isolation.

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