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Literature Review of Perinatal Exposures to Marijuana

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Marijuana is the most common illicit drug used by pregnant women in the U.S., with nearly 4.6 percent reporting recent use during their first trimester and 1.4 percent in the third trimester. An estimated one-third of the THC (the primary psychoactive component of marijuana) in the mother's blood crosses the placental barrier. Additionally, postpartum women who use marijuana secrete THC in their breast milk.[2] A number of studies have evaluated the impacts of marijuana exposure on the developing fetus. However, few have looked at postnatal exposures to marijuana through breastfeeding, and much less is known about the effects of pediatric exposures to sidestream smoke.

There are inconsistencies in the literature on the relationship between marijuana use in pregnancy and poor birth outcomes. However, many seem to conclude that there is no significant relationship between prenatal marijuana use and low birth weight, prematurity, or birth defects after controlling for potential confounders such as other substance use during pregnancy (namely, tobacco and alcohol), prenatal care, and maternal demographics. [3,4,5,6]

But, there does appear to be evidence of short- and long-term cognitive, behavioral, and emotional effects for children prenatally exposed to marijuana. In newborns, increased startles and tremors as well as altered sleep patterns have been observed.[7,8] Some of the lasting effects of prenatal exposure are:

- deficits in academic achievement, problem-solving skills, memory and visual-motor coordination;
- increased inattention, impulsivity, hyperactivity and depressive symptoms; and
- a higher likelihood of becoming users of tobacco and marijuana.[9,10,11,12,13,14,15]

While data show that many women stop using marijuana before or during their pregnancy, the data also suggest resumption of use postpartum (3.8% of women with an infant aged <3 months).[1] Some studies suggest that infants exposed through breastfeeding may show signs of decreased motor development, as well as sedation, reduced muscular tone, and poor sucking.[16] However, studies on lactating mothers are limited in number and the findings inconclusive.

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The effects of prenatal marijuana use are difficult to discern due to a number of factors. Pregnant women who use marijuana are more likely to also use tobacco, and marijuana is commonly smoked with tobacco.[15,16,17] To further complicate the study of the impacts of prenatal marijuana use on birth, developmental, and behavioral outcomes are the issues of misclassification of exposure status due to untruthful self-report or toxicology testing after cessation; differences in the potency, frequency, means of consumption, and timing of cessation of marijuana use during pregnancy; and unclear implications of use before and after pregnancy.

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