

ANMC STATEMENT ON MARIJUANA USE DURING PREGNANCY & LACTATION

OBJECTIVE: Maternal child health staff at Alaska Native Medical Center should provide consistent evidence-based guidance on pregnancy and breastfeeding to mothers with a history of marijuana use.

BACKGROUND:

Pregnancy: Studies using laboratory animals show that in utero marijuana exposure may disrupt normal brain development and function¹ through impaired cognition and increased sensitivity to drugs of abuse². Fetal marijuana exposure can potentiate brain susceptibility to the apoptotic effects of alcohol³. Studies noted that children who were exposed to marijuana in utero had lower scores on tests of visual problem solving, visual-motor coordination, and visual analysis than children who were not exposed to marijuana in utero^{4,5,6,7}.

Additionally, prenatal marijuana exposure is associated with decreased attention span and behavioral problems and is an independent predictor of marijuana use by age 14 years^{8,9,10}. Effects of prenatal marijuana exposure on school performance are less clear with studies showing conflicting outcomes^{11,12,13}.

Because of concerns regarding impaired neurodevelopment, women who are pregnant or contemplating pregnancy should be encouraged to discontinue marijuana use. Because the effects of marijuana use may be as serious as those of cigarette smoking or alcohol consumption, marijuana also should be avoided during pregnancy. Before pregnancy and in early pregnancy, all women should be asked about their use of tobacco, alcohol, and other drugs, including marijuana and other medications used for nonmedical reasons. Women reporting marijuana use should be counseled about concerns regarding potential adverse health consequences of continued use during pregnancy.

Lactation: Breastfeeding is the natural way to feed babies. It provides benefits to the mother and child and is the optimal feeding choice for most infants. Breastfeeding also helps bonding between mother and child. Breastfeeding is economically beneficial to the healthcare system and families.

There are two small studies that looked at developmental outcomes in one year-old infants whose mothers smoked marijuana during lactation with conflicting results^{14,15}. There is no research on long-term developmental outcomes in exposed infants; therefore it is difficult to make firm recommendations to mothers who use marijuana. There is significant research on the benefits of breastfeeding and long-term outcomes for mothers and infants.

It is preferable to encourage mothers who have used marijuana infrequently to continue breastfeeding while reducing or abstaining from marijuana use. It is worthwhile to talk to new mothers who use marijuana about the risk of second hand marijuana exposure and the significant risk of a mother being high while caring for an infant. In cases where the mother is a chronic or heavy user (4 or more times a week), the effects of marijuana exposure are likely to be more profound¹. It may be preferable in these cases to discuss alternate feeding methods with the mother.

RECOMMENDATION:

Communicate the following information to mothers who use marijuana:

1. Women reporting marijuana use should be counseled about concerns regarding potential adverse health consequences of continued use during pregnancy.
2. Women who are pregnant or contemplating pregnancy should be encouraged to discontinue marijuana use.
3. Marijuana passes into breastmilk and may adversely affect the developing child¹⁶.
4. Marijuana use in any form should be avoided by mothers because it impairs judgment and child care abilities, regardless of how the infant is fed.
5. The benefits of breastfeeding are significant, and it is preferable to encourage mothers who have used marijuana infrequently (three or less times per week) to continue breastfeeding while reducing or abstaining from marijuana use.
6. In mothers who are heavy marijuana users (four or more times per week) and unable or unwilling to reduce or eliminate use, an alternate feeding method may be preferable and should be discussed with the infant's provider and family.

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¹ Campolongo, P., Trezza, V., Ratano, P., Palmery, M., & Cuomo, V. (2011). Developmental consequences of perinatal cannabis exposure: behavioral and neuroendocrine effects in adult rodents. *Psychopharmacology*. 214(1), 5–15.

² Szutorisz, H., DiNieri, J., Sweet, E., Egervari, G., Michaelides, M., Carter J., . . . Hurd, L. (2014). Parental THC exposure leads to compulsive heroin-seeking and altered striatal synaptic plasticity in the subsequent generation. *Neuropsychopharmacology*. 39(6), 1315–1323.

³ Hansen, H., Krutz, B., Sifringer, M., Stefovskaja, V., Bittigau, P., Pragst, F., . . . Ikonomidou, C. (2008). Cannabinoids enhance susceptibility of immature brain to ethanol neurotoxicity. *Ann Neurol*. 64(1), 42–52.

⁴ Willford, J., Chandler, L., Goldschmidt, L., Day, N. (2010). Effects of prenatal tobacco, alcohol and marijuana exposure on processing speed, visual-motor coordination, and interhemispheric transfer. *Neurotoxicology and Teratology*. 32(6), 580–588.

⁵ Fried, P. & Watkinson, B. (2000). Visuoperceptual functioning differs in 9- to 12-year olds prenatally exposed to cigarettes and marijuana. *Neurotoxicology and Teratology*. 22(1), 11–20.

⁶ Fried, P. & Watkinson, B. (2003). Differential effect on cognitive function in 13- to 16-year-olds prenatally exposed to cigarettes and marijuana. 25(4), 427-436.

⁷ Chandler, L., Richardson, G., Gallagher, J., & Day, N. (1996). Prenatal exposure to alcohol and marijuana: effect on motor development of preschool children. *Alcoholism, Clinical and Experimental Research*. 20(3), 455-461.

⁸ Fried, P. & Watkinson, B. (2001). Differential effects on facets of attention in adolescents prenatally exposed to cigarettes and marijuana. *Neurotoxicology and Teratology*. 23(5), 421-430.

⁹ Day, N., Goldschmidt, L. & Thomas, C. (2006). Prenatal marijuana exposure contributes to the prediction of marijuana use at age 14. *Addiction*. 101(9), 1313-1322

¹⁰ Goldschmidt, L., Day, N., & Richardson, G. (2000). Effects of prenatal marijuana exposure on child behavior problems at age 10. *Neurotoxicology and Teratology*. 22(3), 325-336.

¹¹ Fried, P., O'Connell, C., & Watkinson, B. (1992). 60- and 72- month follow-up of children prenatally exposed to marijuana, cigarettes, and alcohol: cognitive and language assessment. *Journal of Developmental and Behavioral Pediatrics*. 13(6), 383-391.

¹² Fried, P., Watkinson, B., & Siegel, L. (1997). Reading and language in 9- to 12-year olds prenatally exposed to cigarettes and marijuana. *Neurotoxicology and Teratology*. 19(3), 171-183.

¹³ Goldschmidt, L. Richardson, G., Cornelius, M., & Day, N. (2004). Prenatal marijuana and alcohol exposure and academic achievement at age 10. *Neurotoxicology and Teratology*. 26(4), 521-532.

¹⁴ Astley, S. & Little, R. (1990). Maternal marijuana use during lactation and infant development at one year. *Neurotoxicology and Teratology*, 12(2), 161-168.

¹⁵ Teenes, K., Avitable, n. Blackard, C., Boyles, C. Hassoun, B., Holmes, L., Kreye, M. (1985). Marijuana: prenatal and postnatal exposure in the human. *NIDA Res Mongr*; 59:48-60.

¹⁶ Perez-Reyes, M. & Wall, M. (1982). Presence of Δ^9 -tetrahydrocannabinol in human milk. *The New England Journal of Medicine*, 307(13), 819-820.