

ADDICTION EXCHANGE

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News from the worlds of clinical practice and research

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Welcome to *Addiction Exchange*, a forum for the exchange of clinical practice and research information among clinicians, scientists, educators, and administrators in the area of addiction. Today we continue to explore **Prenatal exposure to drugs: what do we really know?** In the last 2 issues, we discussed the effects of prenatal exposure to alcohol, nicotine, marijuana, caffeine, and cocaine. Today we will discuss opioids, sedative-hypnotics, and briefly summarize the research on prenatal exposure.

Opioids include opiate-derived drugs like heroin and morphine, and synthetic medications like codeine, oxycodone, methadone, and hydrocodone. Opioid exposure during pregnancy could include the illicit use of these drugs or their use as prescribed by a physician for conditions such as chronic pain. Although the perinatal effects of opioids have been studied for over 20 years, early studies were marred by design flaws. Although many studies reported that prenatal opioid exposure was related to lower birth weight, length, or head circumference, only the findings for head circumference have withstood more recent, rigorous research methods. Neonatal withdrawal after prenatal exposure to opioids is well-documented and may require pharmacologic interventions for the newborn. Neonatal abstinence syndromes can include central nervous system irritability (high pitched crying, increased tone, tremors) and respiratory distress, gastrointestinal problems, and poor sucking reflex. In some cases, death can occur in untreated newborns although it is not a consequence of opioid withdrawal for adults. Women with histories of opioid use, even prescribed, during pregnancy, should advise their obstetricians to assure proper care. Although neurobehavioral and developmental problems have been documented, more recent studies suggest that the severity of the abstinence syndrome may be the most important factor. Women with opioid use should consult their physicians to avoid precipitating severe withdrawal syndromes by abruptly stopping use. Persistent neurobehavioral effects may be due to exposure to other substances including alcohol, or exposure to a chaotic home environment, and may not necessarily be related to opioid exposure prenatally. Fortunately, postnatal development appears to proceed relatively normally if the child's environment is free of the social consequences of ongoing drug use in the mother.

Although a host of problems was believed to be related to benzodiazepine (anti-anxiety medications such as Valium, Xanax, etc.) exposure in pregnancy, research with more rigorous designs has not found any causal relationship with congenital malformations and benzodiazepine exposure. Conclusions regarding other issues such as neurobehavioral or developmental problems cannot be drawn due to the lack of quality research on them.

The use of barbiturates such as phenobarbital is known to be teratogenic (causing physical birth defects); exposure can cause dysmorphic features including congenital heart defects, cleft lip and palate, and neural tube defects. Phenobarbital is the riskiest drug among epileptic pregnant women and results in major anomalies or fetal death in nearly 24% of cases. There is some evidence of lingering cognitive and central nervous system effects of phenobarbital exposure as well. Epileptic women must consult their physicians prior to pregnancy. Little is known about the pregnancy outcomes of drug abusing women who use barbiturates.

Prenatal exposure to alcohol, nicotine, and phenobarbital clearly has negative effects on infants. Exposure to caffeine and marijuana appears more benign. Exposure to other drugs, including cocaine and opioids, may produce harmful effects, but the literature is confounded with poor designs, inconsistent findings, and methodological problems including small sample sizes. Future research must separate the effects of prenatal drug exposure alone from chaotic childhood environment, which is predictive of continuing behavioral and developmental problems.

Source: Britt, G.C., Ingersoll, K.S., & Schnoll, S.H. (1999). Developmental consequences of early exposure to alcohol and drugs. In Ott, P.J., Tarter, R.E., & Ammerman, R.T. (Eds.) *Sourcebook on Substance Abuse: Etiology, Epidemiology, Assessment, and Treatment*. Boston: Allyn and Bacon. 75-97

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