

# ADDICTION EXCHANGE

Mar. 1, 1999 1(4)

*News from the worlds of clinical practice and research*

Brought to you by FAX, email, and on the web by the  
Virginia Addiction Technology Transfer Center, part of the Mid-Atlantic ATTC  
**A CSAT-funded Center**

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. This month's topic is **Prenatal exposure to drugs: what do we really know?** You may have heard in the late 80's about "crack babies" and other developmental problems believed to be related to prenatal exposure to drugs. You may not be aware that the scientific knowledge base has grown tremendously during the past decade. In some cases, conclusions about the level of harm of prenatal exposure of the various drug classes have changed substantially in that time. In this issue, we will discuss the effects of prenatal exposure to alcohol and nicotine. One of the conclusions with the greatest amount of solid scientific evidence is that prenatal exposure to legal drugs, such as alcohol, nicotine, and prescribed barbiturates, can produce the most severe and lasting types of harm to the fetus and newborn.

In the case of alcohol, no known level of exposure during pregnancy is completely safe, and there appears to be a dose-response relationship, with higher levels of exposure correlated with greater numbers and types of birth defects, neonatal complications, and lasting neurobehavioral deficits. Unfortunately, there is not good data on how much alcohol it takes to produce particular problems, and this may vary by the woman's weight, metabolism, and other unknown factors. High-dose exposure to alcohol during pregnancy can produce Fetal Alcohol Syndrome (FAS), fetal growth retardation, malformations, and childhood cancer. Children with FAS manifest characteristic facial dysmorphism (malformation of facial structures), mental retardation, and growth deficiencies; these last a lifetime. Although less severe than FAS, alcohol-related birth defects (ARBD) occur at lower levels of prenatal alcohol exposure, and include decreased IQ, behavioral and neurological problems; these effects have been observed to persist for at least 14 years, and may persist for a lifetime. Children with FAS or ARBD may grow up to manifest drinking problems themselves, both due to genetic liability to addiction and poor behavioral control. The possibility of second-generation effects of prenatal exposure to alcohol leading to increased incidence of new alcohol exposed pregnancies is of high interest to researchers, but little is known beyond speculation.

In the case of nicotine, many negative neonatal effects have been observed that are believed to be related both to the stimulant effects of nicotine and the effects of exposure to a smoked substance. These include low birth weight, lower birth length, increased placental rupture, increased birth problems such as placenta previa, increased prematurity, increased premature rupture of the membranes, increased small-for-gestational-age rates, and increased sudden infant death syndrome (SIDS). Like alcohol, nicotine exposure is related to most of these neonatal complications in a dose-dependent pattern, with children of women exposed to passive smoke showing fewer and less severe effects, and children of smoking women showing stronger effects the more the woman smokes. However, unlike the effects of alcohol, which appear to be lifelong, some of the neonatal complications related to smoking (such as low birth weight and height) can resolve within the first year or two of life. A complicating factor is that postnatal exposure to smoke, or second-hand smoke in the infant's home, is related to continuing problems such as respiratory illnesses and SIDS. These facts resulted in the American Heart Association labelling passive smoking a "serious pediatric health problem." Clearly, the best advice for pregnant women is to avoid drinking, smoking, and exposure to second-hand smoke during pregnancy. Additionally, children should be protected from the illness-producing effects of postnatal exposure to second-hand smoke in their environments. In the next issue, we will review some of the conclusions about exposure to other drugs.

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.

We hope you find *Addiction Exchange* useful in your work. Please let us know about your information needs by emailing the editor of *Addiction Exchange*, Dr. Karen Ingersoll, at [kingerso@vcu.edu](mailto:kingerso@vcu.edu), or discuss your training needs by calling us at (804)-828-9910, or contact the VATTC office at [vattc@vcu.edu](mailto:vattc@vcu.edu). Our website

address is <http://views.vcu.edu/vattc/>. Please copy and distribute to colleagues and students!!!!



