Prenatal Brain Injury: Fetal Alcohol and Drug Affected Children

"Behold, thou shalt conceive and bear a son:
And now drink no wine or strong drink." Judges 13:4

Alcohol is so toxic to a baby’s developing brain that it is too difficult to distinguish the long-term neurological affects of other drugs from the alcohol damage.

~In-Family Services

Gideon Koran, Professor of Pediatrics and Pharmacology at the University of Toronto and director of the Motherisk Program at Toronto’s Hospital for Sick Children explained to Origins author, Annie Murphy Paul, the following:

“Once drugs and alcohol have crossed the placenta, the chemicals can affect fetuses more powerfully than they can affect adults for several reasons: first, the fetus is so small it receives a stronger dose of the chemical than an adult does. Second, the fetus’s detoxification and immune systems are still immature, unable to clear drugs and other chemicals from its system as effectively as the body of an adult. Third, the fetus is developing so rapidly that even a small disruption induced by a chemical can have far-reaching effects.”

Pregnant women are prescribed drugs by their doctors. The Food and Drug Administration reports that pregnant American women take an average of three to five prescription drugs. Many of these medications have no effect on the fetus, but many of them do. A 2000 study published in the medical journal, Lancet, reported that 79% of pregnant women take at least one drug for which the safety data are unavailable; A study of the records of eight HMO’s, encompassing almost a hundred thousand patients, found that 64 percent of women were prescribed at least one drug during pregnancy. Almost \( \frac{1}{2} \) of these pregnant women had been prescribed drugs which were labeled to have some risk or to be extremely risky for the fetus.

The most recent surveys by the U.S. Substance Abuse and Mental Health Services Administration indicate that 16.4 percent of pregnant women smoke cigarettes and 5.1 percent use illegal drugs. Smoking during pregnancy can cause miscarriage, stillbirth, preterm delivery, low birth weight, birth defects, and sudden infant death syndrome (SIDS). Some studies have tied women’s smoking with their offspring’s brain development. When a pregnant mom smokes, the amount of oxygen and nutrition delivered to the fetus is reduced. Carbon monoxide binds to the fetus’s red blood cells, further reducing its oxygen levels. Studies have shown that prenatal cocaine is associated with behavior problems but not as significantly as those produced by a mother who uses alcohol and tobacco.

Studies in animals have suggested that even small amounts of alcohol can teach offspring...
to like its taste, making them more likely to choose alcohol themselves when they mature. Imagine what happens with the children of addicts...when they mature. The above information was excerpted from Origins: How the Nine Months before Birth Shape the Rest of Our Lives, by Annie Murphy Paul. Free Press: 2010.

Disabilities resulting from drinking alcohol during pregnancy:

- **FAS: Fetal Alcohol Syndrome**
  Symptoms include small head/body, facial characteristics, brain damage.

- **FAE: Fetal Alcohol Effects**
  Symptoms usually not visible, such as behavior disorders, attention deficits

- **ARBD: Alcohol Related Birth Defects**
  Anomalies such as heart defects, sight/hearing problems, joint anomalies, etc.

- **ARND: Alcohol Related Neurological Disorders**
  Disorders such as attention deficits, behavior disorders, obsessive/compulsive disorder, etc.

Facts:
1. FAS is the leading cause of mental retardation in western civilization.
2. The incidence of Fetal Alcohol Syndrome in North America is 1.9 cases per 1,000 live births (1/500).
3. Incidence of babies with disabilities resulting from prenatal alcohol exposure: 1/100.
4. FAS/FAE is a major health issue in western civilization today. More American babies are born with FAS than with Down Syndrome, MD and HIV combined.
5. Alcohol causes more destruction to the developing baby than any other substance (Institute of Medicine report to Congress).

The above information came from handouts from a workshop given by Deb Hoyt and Valerie Owens (Iowa Connects and Healthy Connections: e-mail: IAConnects@aol.com) at the International ATTACl Conference in Greenville, SC, in Oct. 2001.

Alcohol exposure during stages of pregnancy

During the first trimester, as shown by the research of Drs. Clarren and Streissguth, alcohol interferes with the migration and organization of brain cells. (Journal of Pediatrics, 92(1):64-67)

Heavy drinking during the second trimester, particularly from the 10th to 20th week after conception, seems to cause more clinical features of FAS than at other times during pregnancy, according to a study in England. (Early-Human-Development; 1983 Jul Vol. 8(2) 99-111)

During the third trimester, according to Dr. Claire D. Coles, the hippocampus is greatly

© Beth Powell, LCSW 2012
affected, which leads to problems with encoding visual and auditory information (reading and math). (Neurotoxicology and Teratology, 13:357-367, 1991)

Neuro-Developmental Characteristics of FAS/FAE
1. Memory problems
2. Difficulty storing and retrieving information
3. Inconsistent performance (on and off days)
4. Impulsivity, distractibility, disorganization
5. Ability to repeat instructions, but inability to put them into action ("talk the talk but don't walk the walk")
6. Difficulty with abstractions, such as math, money management, time concepts
7. Cognitive processing deficits (may think more slowly)
8. Slow auditory pace (may only understand every third word of normally paced conversation)
9. Developmental lags (may act younger than chronological age)
10. Inability to predict outcomes, or understand consequences (cause-effect thinking)

The above information comes from FASCETS, Inc., of Portland, Oregon it was excerpted from the handouts of Deb Hoyt and Valerie Owens (Iowa Connects and Healthy Connections) at the International ATTACh Conference in Greenville, SC, in October 2001