Does Maternal Smoking Affect Infant Language?

By Claire D. Coles, Ph.D.

Although most women who abuse alcohol and other drugs also smoke cigarettes, the effect of prenatal exposure to tobacco is not well explored. The negative effects of smoking on birth weight were known and women in the 1960’s were warned not to smoke when pregnant to avoid having a low birth weight baby. However, we were also told that the baby’s weight would quickly “catch up” following birth and that there were no other negative consequences. Over time, some other problems were identified particularly in children who lived with smokers and were exposed to what is called ETS (environmental tobacco smoke). These problems including increased respiratory infections and asthma and a higher risk for sudden infant death syndrome (SIDS). Children who were exposed to this “secondary smoke” also seemed to have more ear infections (called “otitis media”). Little attention was paid to cognitive or behavior effects until a Canadian-based study (Fried, et al. 1997) published information suggesting that middle class children exposed prenatally to tobacco had more problems with language and reading than did similar children whose mothers did not smoke.

Following up on Fried’s work, the Maternal Substance Abuse and Child Development Project in Georgia, found that 6-month olds who were exposed to nicotine had more problems than other children in processing sounds (Kable, 1995). When these children were 4 ½ years old, they showed problems with “auditory processing” of words that they heard. That is, they were not able to make fine discriminations between different syllables like “bat” and “pat” and would sometimes confuse words that sounded the
same. This problem is of particular concern because children with reading disabilities show the same difficulties.

To investigate this problem in greater depth, the Emory Language Development Study was funded by the National Institute on Child Health and Human Development (NICHD). At the present time, mothers who deliver at Northside and Crawford Long Hospitals in Atlanta are eligible to participate in the study and their infants are followed at the Emory MSACD laboratory until they are 24 months old. During three follow-up visits, data are collected on the baby’s ability to discriminate sounds (for instance, “ba” and “da”) as well as on language development. Speech and language will be analyzed by scientists at Emory and at Georgia State University. When the study is completed, we will better understand how exposure to nicotine during pregnancy and in the home affect this important part of children’s development. Having this information will help health care professionals advise mothers about smoking in pregnancy and will let women make a more informed choice about continuing to smoke.

For further information regarding this article please contact the Maternal Substance Abuse and Child Development Project, Emory University School of Medicine, Department of Psychiatry and Behavioral Sciences, Emory West Campus, 1256 Briarcliff Road N.E., Suite 323-West, Atlanta GA, 30306. You can email us at msacd@listserv.cc.emory.edu, visit our website at http://www.emory.edu/MSACD, or phone us at 404-712-9800.

The Maternal Substance Abuse and Child Development Project is funded in part by the Georgia Department of Human Resources Division of Mental Health, Developmental Disabilities and Addictive Diseases.
References
