

## BREAKING THE CYCLE - A UNIQUE MODEL FOR FASD RESEARCH

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The Motherisk Program

**A**t Breaking the Cycle we diagnose and follow-up children exposed *in utero* to alcohol and a variety of drugs of abuse. Because all children reside and attend the clinic with their biological mothers, we have the advantage of a full report on time and doses of intrauterine exposure, as well as all other confounders, from poverty to depression. Full physical and neurobehavioral follow-up allows optimal study of FASD and determinants affecting it.

To date, a variety of methodologies have been used to study the effects and dose response relationships of ethanol in pregnancy. Because of the shame, guilt and fears associated with alcohol use in pregnancy, there is always a cloud of doubt hanging above the extent and quality of maternal disclosure. The information regarding maternal exposure is often second hand (*e.g.*, family members), third hand (*e.g.*, children's aid), or plain hearsay.

Breaking the Cycle is Canada's first early identification and prevention program for pregnant and parenting women who are using substances and have young children. The program has created a unique research paradigm for the complex challenge of the effects of ethanol on the developing brain in the context of all other confounders, and offers a number of significant advantages.

First, per definition, the mother-child dyad is the client/patient. Hence we meet the biological mothers repeatedly in our clinic.

The mothers disclose a very full picture of their alcohol and drug use. This is the strength of the culture in Breaking the Cycle which is non-judgmental, friendly and supportive.

For cynical readers who may raise an eyebrow thinking that "it is still just mom's word", we have now biological proof of the accuracy and completeness of maternal reports of Breaking the Cycle clients. In three recent cases mothers reported using cocaine only in the first half of pregnancy. Hair

analysis of the mothers and babies verified their stories. In all cases the hair sections corresponding to the first half of pregnancy were positive, whereas the section reflecting the last half of pregnancy were negative. (Maternal hair grows at 1-1.5 cm/mo.) As importantly, all babies' hair samples were negative for cocaine. The hair that neonates are born with grows in the last trimester of pregnancy<sup>1</sup>.

Breaking the Cycle clients are also highly motivated women, who despite troubling personal histories are very committed to quitting drugs and making positive changes, focusing on their children. This greatly improved postnatal environment, is critical in sorting out how much of the damage seen in FASD is prenatal and how much is postnatal.

Working with Breaking the Cycle clients also allows for continuous follow-up to detect emerging or disappearing physical, neurological and neurobehavioral symptoms. Quite a few of the women report that their own mothers were alcoholics<sup>2</sup>, and quite a few of them have symptoms consistent with FASD. Much more research is needed on multi-generational FASD.

We wish to invite other researchers who follow-up problem drinking biological mothers, to collaborate in this very unique research, which may allow important insight into the most prevalent form of prenatal brain damage.

### REFERENCES

1. Bar Oz B, Klein J, Karaskov T, Koren G. Comparison of meconium and neonatal hair analysis for detection of gestational exposure to drugs of abuse. *Arch Dis Child Fetal Neonatal Ed*: 203; 88: F98-F100.
2. Rouleux M, Levichek Z, Koren G. Are mothers who drink heavily in pregnancy victims of FAS? *JFAS Int*. 1:e4, 2003.