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### POSTER COMPETITION ABSTRACTS

8<sup>TH</sup> ANNUAL FETAL ALCOHOL CANADIAN EXPERTISE (FACE) RESEARCH ROUNDTABLE

> Friday, September 7, 2007 Delta Winnipeg Manitoba

The 8<sup>th</sup> FACE Research Roundtable was organized by the Motherisk Program of The Hospital for Sick Children in cooperation with Healthy Child Manitoba and sponsored by the First Nations Inuit Health Branch of Health Canada and the Brewers Association of Canada.

### FACE RESEARCH ROUNDTABLE - POSTER COMPETITION September 7, 2007

# A PILOT STUDY TO EXAMINE THE CORRELATION BETWEEN SLEEP DISTURBANCE AND SENSORY PROCESSING IN 0-36 MONTH OLD CHILDREN WITH FETAL ALCOHOL SPECTRUM DISORDER (FASD)

Fjeldsted B, Hanlon-Dearman A. Clinic for Alcohol and Drug Exposed Children, Children's Hospital of Winnipeg, Manitoba

# A SYSTEMATIC REVIEW OF FATTY ACID ETHYL ESTERS IN MECONIUM AS A PREDICTIVE BIOMARKER FOR FETAL ALCOHOL EFFECTS

Hutson JR, Koren G. Motherisk Program, Hospital for Sick Children, Toronto, Ontario

# ACTNOW BC HEALTHY CHOICES IN PREGNANCY: LESSONS ARISING FROM PROVINCE WIDE EDUCATION ON WORKING WITH WOMEN WHO USE ALCOHOL IN PREGNANCY

Poole N. Urquhart C, Horner E. British Columbia Centre of Excellence for Women's Health

### ACTIGRAPHIC CHARACTERISTICS OF CHILDREN WITH FETAL ALCOHOL SPECTRUM DISORDER

Hanlon-Dearman A. Clinic for Alcohol and Drug Exposed Children, Children's Hospital of Winnipeg, Manitoba Canada

# ASSESSING THE PUBLIC'S KNOWLEDGE OF FASD: THE IMPACT OF A MULTIMEDIA CAMPAIGN

Carr T, Brand LE. Saskatchewan Prevention Institute

### BUILDING COMMUNITY CAPACITY: SASKATCHEWAN FASD SPEAKERS BUREAU MODEL

Dorion E. Brand LE. Public Health Agency of Canada, Saskatchewan Prevention Institute

### COALESCING ON FASD PREVENTION FROM A WOMEN'S HEALTH DETERMINANTS PERSPECTIVE

Salmon A, Poole N, Hoyak K, Greaves L. British Columbia Centre of Excellence for Women's Health

# INTERIM ANALYSIS OF THE PREVALENCE OF FATTY ACID ETHYL ESTERS IN MECONIUM OF GREY-BRUCE BABIES BORN IN A TERTIARY HEALTHCARE CENTRE

Goh YI. Hutson JR, Roukema H, Koren G. Division of Clinical Pharmacology & Toxicology, The Hospital for Sick Children; Department of Pharmaceutical Sciences, University of Toronto; Department of Institute of Medical Sciences, University of Toronto, Ontario, Dept. of Neonatal/Perinatal Medicine, St. Joseph Health Care, London, Dept. of Medicine, University of Western Ontario, London

### LET'S TALK FASD: PARENT-DRIVEN STRATEGIES FOR PARETS AND CAREGIVERS OF INDIVIDUALS AFFECTED BY FETAL ALCOHOL SPECTRUM DISORDER

Lee-Ross M. VON Canada

# PILOT STUDY ON SCREENING NEWBORNS FOR ALCOHOL EXPOSURE – CLINICAL IMPLEMENTATION

Shor S, Gareri J, Nulman I, Koren G. Motherisk Program, Hospital for Sick Children, Toronto; Department of Pharmacology, University of Toronto

# USING TRADITIONAL SPIRITUALITY TO SUPPORT WOMEN WHO DRINK WHILE PREGNANT: THE STORY OF THE RECLAIMING OUR VOICES GATHERING

Jones K, Dano-Chartrand L, Bone S. West Region Child and Family Services, Winnipeg, Manitoba

### **ABSTRACTS**

### 8<sup>th</sup> ANNUAL FETAL ALCOHOL CANADIAN EXPERTISE (FACE) RESEARCH ROUNDTABLE

### POSTER COMPETITION

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A pilot study to examine the correlation between sleep disturbance and sensory processing in 0-36 month old children with fetal alcohol spectrum disorder (FASD)

<u>Fjeldsted B.</u> Hanlon-Dearman A. Clinic for Alcohol and Drug Exposed Children Children's Hospital of Winnipeg, Canada

**Objective:** Abnormalities in the sleep wake organizational patterns have been documented but not well described in infants and children with prenatal alcohol exposure. These infants and children have also been described as experiencing abnormal patterns of sensory processing and reactivity secondary to alcohol toxicity and central nervous system disorganization. The objective of this pilot study is to correlate sleep disturbance and sensory processing differences in children with FASD.

Study Design: Data were collected from 20 children ages 0-36 months with confirmed alcohol exposure referred to the Clinic for Alcohol and Drug Exposed Children in Winnipeg, Canada. Caregivers were provided with the Brief Infant Sleep Questionnaire BISQ (Sadeh, 2004) and with the Infant/Toddler Sensory Profile (Psychological Corporation, 2002). Areas of sensory processing were tested for correlation with sleep measures identified on the BISQ using Spearman's rank correlation. A Pearsons Correlation Coefficient was calculated for those items assumed to be normally distributed (eg. total nighttime and daytime sleep).

**Results:** Results support significant correlations among total daytime sleep and sensation seeking (p=0.0103) and pm wakefulness and sensation avoiding (p=0.0421). Borderline correlations were also suggested in total nighttime and daytime sleep and other areas of sensory processing.

**Conclusions:** This pilot study supports the relationship of sleep disturbance and sensory processing abnormalities among children prenatally exposed to alcohol. We

postulate that sleep disturbance and sensory processing differences reflect neurological disorganization secondary to alcohol toxicity. Sensory organizing strategies should be a critical supplement to sleep hygiene strategies in this population. Further study to document specific sleep and neurobehavioral patterns and specific sleep therapies in this population is recommended.

**Keywords:** Fetal alcohol syndrome, sleep, sensory processing

Funding Source: None Conflict of Interest: None

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A systematic review of fatty acid ethyl esters in meconium as a predictive biomarker for fetal alcohol effects

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**Background:** A novel biomarker for prenatal alcohol exposure is the detection of fatty acid ethyl esters (FAEE), non-oxidative metabolites of alcohol, in meconium, the infant's first bowel movement. FAEE are elevated at or above 2 nmol/gram of meconium in infants exposed to alcohol in utero at amounts that may lead to fetal alcohol spectrum disorder (FASD). This systematic review discusses associations between elevated FAEE in meconium and deficits associated with fetal alcohol spectrum disorder.

Methods: An online search for papers and abstracts using the keyword fetal alcohol syndrome published between 1950 to May 2007 using the National Library of Medicine's medical database Medline was conducted. A total of 2532 papers were found. Abstracts were scanned to determine relevance to the review topic and selected publications were further evaluated. References in selected papers were scanned for additional publications and Elsevier BV's Scopus was also searched. Final selection of 7 publications related to FAEE in meconium and prediction of fetal alcohol effects was made.

**Results:** Elevated levels of FAEE in meconium have been associated with numerous fetal alcohol effects including growth restriction and cognitive deficits. Elevated FAEE in meconium have also been reported

to have a stronger association to future diagnosis of FASD than maternal self-report of alcohol use during pregnancy

**Conclusion:** The detection of FAEE in meconium is a promising tool to aid in screening infants for prenatal alcohol exposure and assisting in diagnosis of FASD.

**Keywords:** Fatty acid ethyl esters, fetal alcohol spectrum disorder, systematic review

Funding Source: National Sciences and Engineering Council of Canada Postgraduate Award Conflict of Interest: None Corresponding Author: j.hutson@utoronto.ca

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ActNow BC healthy choices in pregnancy: Lessons arising from province wide education on working with women who use alcohol in pregnancy

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**Background** Healthy Choices in Pregnancy is a pillar of the government-wide ActNow BC health promotion platform, with the target of a 50% increase in the number of women counseled about alcohol use in pregnancy.

Approach: Curriculum was developed to translate best practice on counselling with pregnant women on substance use issues, in a way that addressed the learning needs of healthcare and social service providers who work with pregnant women and women in childbearing years (i.e. primary health care, acute care, public health, addiction, transition house, pregnancy outreach, midwifery, child welfare, Aboriginal and other services). In the 2006/07 year more than 1800 service providers working in more than 30 communities throughout BC participated in community-based multi-sectoral, professional education sessions based on this curriculum.

Framework Applied: The presentation will describe:
a) The community driven involvement model used to engage service providers in the educational sessions;
b) The research evidence, clinical skills and philosophical paradigm (women-centered, harm reduction and brief collaborative orientation) covered in the sessions; and c) The response cited by the participants to incorporating this intervention approach into their work with women.

Conclusion: The implications of the ActNow Healthy Choices in Pregnancy approach to knowledge translation with health care and other service providers, for effective knowledge translation on FASD prevention and women's health overall will be discussed.

**Keywords**: FASD prevention, professional education, knowledge translation

Funding Source: Government of British Columbia,
ActNow BC Healthy Choices in Pregnancy
Conflict of Interest: None
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# Actigraphic characteristics of children with fetal alcohol spectrum disorder

<u>Hanlon-Dearman</u>, A. Clinic for Alcohol and Drug Exposed Children, Children's Hospital of Winnipeg, Canada

**Objectives:** Sleep disorders have been frequently identified, but poorly described in FASD. The objective of this study is to describe the sleep characteristics of children with FASD using actigraphy, sleep questionnaire, and sleep log.

**Study Design:** Children between the ages of 1-8 years diagnosed with Fetal Alcohol Spectrum Disorder (FASD) were recruited from the Clinic for Alcohol and Drug Exposed Children at Children's Hospital in Winnipeg. Actigraphy was employed to measure sleep characteristics over a seven day period. Actigraphic parameters were correlated with data from a pediatric sleep questionnaire and with a parent completed sleep log. Data were analyzed using a repeated measures ANOVA using the SAS GLM procedure (two sided, significance set at p<0.05). Questionnaire results were analyzed using two-tailed Fisher's exact t-test. The relative risk of each outcome category was calculated, or when necessary, an odds ratio was used.

**Results:** There are significantly more sleep related concerns in children with FASD (OR=35.29, p=0.0090) compared with their non-alcohol affected foster siblings. The most significant concerns focused on excessive movements in sleep (OR=23.22, p=0.0294) with associated daytime fatigue (RR=7.00, p=0.0152) and hyperactivity (RR=3, p=0.0090). Using repeated measures ANOVA for actigraphic data, there were significant differences in the mean duration of sleep episodes (p=0.0064) and the mean duration of wake episodes (p=0.0072). The differences in the

number of wake episodes were significant (p=0.0241) as was the number of sleep episodes (p=0.0214). There were no significant differences in sleep efficiency between groups.

Conclusions: Actigraphic analysis supports significantly disrupted sleep patterns in children with FASD including frequent nocturnal wakenings and greater restlessness in sleep, as well as associated daytime fatigue and hyperactivity. Future study should include polysomnographic study of these children as well as longitudinal study at various age cohorts. Both behavioral and medication treatment trials need to be investigated. Families caring for children with FASD should receive specific counseling regarding sleep management in this population.

**Keywords:** Fetal alcohol syndrome, sleep, actigraphy

Funding Source: Children's Hospital Research Foundation Conflict of Interest: None

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# Assessing the public's knowledge of FASD: The impact of a multimedia campaign

Carr T, Brand LE. Saskatchewan Prevention Institute

**Objective:** What impact did the Saskatchewan Prevention Institute's multimedia FASD prevention campaign have on the public's knowledge of FASD?

**Methods:** The evaluation of the Institute's provincial multimedia campaign involved two random sample surveys. A 2005 pre campaign survey (n=401) and a 2006 post-campaign survey (n=400) were conducted with a representative geographical distribution of Saskatchewan residents over 19 years of age (MOE  $\pm$  4.9%; 95% CI). Outside firms conducted the telephone surveys and collected the data. The Prevention Institutes' research officer and team analyzed the data. Approaches used included Health Promotion, Social Marketing, Communications and Instructional Design theory and evaluation.

**Results:** The pre and post campaign surveys indicated overall awareness of the effects of alcohol during pregnancy was very high in Saskatchewan. An increased proportion of the 2006 respondents believed there was no safe time, amount or kind of safe alcohol during pregnancy. Respondents reported a moderate increase in participation in prevention activities after

the campaign. 87% who recalled the messages considered them effective and 26% learned something.

**Conclusion:** Our research indicated the importance of pre-campaign research and that a multimedia campaign could have an impact on the public's knowledge about FASD.

**Keywords:** Campaign, survey, awareness

Funding Source: Saskatchewan Liquor and Gaming Authority Conflict of Interest: None Corresponding Author: lbrand@preventioninstitute.sk.ca

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# Building community capacity: Saskatchewan FASD speakers bureau model

Dorion E, Brand LE. Saskatchewan Prevention Institute

**Objective:** Building community capacity to address FASD through a provincial train the trainer model.

**Methods:** Program indicators for 2006-07 included:

- 1. Quantitative calculations: number of presentations and participants, type of group, location, date and requesting organization.
- 2. Qualitative speaker responses identified program effectiveness: successes, outcomes, gaps, topics required for professional development and future directions.

### **Results:** Project outcomes:

- 1. Built capacity through FASD education in communities and identified priority groups: foster parents, teachers, daycare workers, social workers, police officers, ultrasound technicians, health professionals, and Department of Community Resources and Employment staff.
- 2. Developed a network, expertise and skills in speakers committed to delivering presentations and workshops on FASD in Saskatchewan.
- 3. Provided opportunities for continuing education, networking and support of members through an annual networking meeting.
- 4. Ensured consistent, current, evidence-based information on FASD prevention and intervention strategies was delivered throughout Saskatchewan by members of the Saskatchewan FASD Speakers Bureau.
- 5. Expansion of the model to the North with the development of a Northern Speakers Bureau Project.

**Conclusion:** The Saskatchewan FASD Speakers Bureau has proven to be a successful model to build capacity and provide outreach since 2004.

**Keywords:** Capacity, training, model

Funding Source: Public Health Agency of Canada
Conflict of Interest: None
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 $\begin{array}{cccc} \textbf{Coalescing} & \textbf{on} & \textbf{FASD} & \textbf{prevention} & \textbf{from} & \textbf{a} \\ \textbf{women's health determinants perspective} \\ \textbf{Salmon A}^1, & \underline{\textbf{Poole N}}^{1,2}, & \underline{\textbf{Hoyak K}}^1, & \underline{\textbf{Greaves L}}^1 \\ \end{array}$ 

<sup>1</sup>British Columbia Centre of Excellence for Women's Health; <sup>2</sup>IMPART Trainee

**Background:** In the fall of 2006, the Canada Northwest FASD Research Network selected the BC Centre of Excellence on Women's Health (BCCEWH) to lead the development of a Network Action Team (NAT) focusing on the prevention of FASD from a women's health determinants perspective. The presentation will describe the developments of the NAT in its first year towards the goals of building upon the knowledge base related to FASD prevention, and bringing this knowledge into policy, research, prevention, treatment and community settings.

Approach: The NAT promotes inter-jurisdictional linkages between researchers, clinicians, community collaborators and health planners working on FASD prevention issues in the four western provinces and three northern territories. Together, members share, synthesize and translate knowledge of the interwoven domains of women's substance use/addictions, health promotion, service delivery and FASD prevention. Networking, research collaboration and knowledge exchange are facilitated by a virtual community of practice, which utilizes a web-based workspace and web meeting infrastructure. The poster will highlight the NAT's key discussions and plans for: identification and evaluation of better practices in working with women and their support systems to prevent FASD; identifying and reducing barriers to access to care and treatment; examination of conceptual and measurement issues in social determinants of women's health; and embedding strategies for knowledge translation throughout.

**Conclusion:** The need to expand upon our knowledge of FASD prevention is critical and the NAT is taking an innovative approach to knowledge exchange, synthesis, and translation to address this need.

**Keywords:** FASD prevention, social determinants of health, virtual community of practice

Funding Source: Canada Northwest FASD Research Network

Conflict of Interest: None

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### Interim analysis of the prevalence of fatty acid ethyl esters in meconium of Grey-Bruce babies born in a tertiary healthcare centre

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**Background/Objectives:** Fatty acid ethyl esters (FAEEs) are sensitive and specific markers for prenatal alcohol exposure found in meconium. A previous study reported a 2.3% prevalence of FAEE positive meconium in Grey-Bruce, Ontario. However, not all residents deliver within the Grey-Bruce region. They may transferred to tertiary healthcare settings and therefore not captured in previous the study. The objective of our study is two-fold:

- To measure the prevalence of FAEE positive meconium of Grey Bruce babies delivered in tertiary healthcare setting,
- b) To compare the prevalence of FAEE positive meconium in primary versus tertiary healthcare settings. We hypothesized that there will be higher positive rates in tertiary versus primary healthcare settings.

**Methods:** Babies born to Grey-Bruce residents delivering at St. Joseph's Health Care London were identified. Mothers were informed of the anonymous prevalence study and were provided specimen bags and instructions on meconium collection. Mothers refusing to participate indicated so by marking the bag. All specimen bags were placed in -20°C freezer. The meconium was transported on dry ice to The Hospital for Sick Children where FAEEs were quantified using GC-MS.

**Results:** Twenty-nine meconium specimens were collected from August 1, 2006 - March 1, 2007. Ten specimens (34.5%) tested positive for FAEEs. This

translated to a 15-fold higher rate than babies born in primary healthcare settings.

**Conclusions/Discussion:** The interim results suggest that babies delivered in tertiary versus primary healthcare settings are at higher risk for prenatal alcohol exposure. Therefore efforts should be directed towards implementing screens for infants born in these environments.

**Keywords:** Meconium, fatty acid ethyl esters, screening, GC-MS

Funding Source: CIHR FAS-NET Grant

Conflict of Interest: None
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# Let's Talk FASD: Parent-driven strategies for parents and caregivers of individuals affected by fetal alcohol spectrum disorder

Lee-Ross, M. VON Canada

**Background/Objectives:** VON Canada has worked with the FASD community since 2002 in the development of guidelines for parents and caregivers of children and adults with FASD. These practical approaches are designed to respond to a need for strategies that are empirically proven by parents themselves and may be used to enhance the quality of life of individuals affected by FASD.

**Methods:** The population group consisted of parents/caregivers of children/adults diagnosed with or suspected of having FASD, affected adults and those that work with individuals with FASD and their families. Data was collected via parent/caregiver interviews (n=17), focus groups (n=6), and an internet-based survey (n=183). A literature search was also conducted to identify the best sources of information available to parents at the time of the study. Participants' responses were thematically coded via content analysis to categorize parenting needs, sources of information and support as well as parenting techniques and strategies. This information was supplemented with existing research and resources to develop the guidelines.

**Results:** The major outcome of the project was the development of parent-driven guidelines that involve the first hand experience of those living with FASD and those that care for them. A manual containing the guidelines and additional resources entitled, *Let's Talk* 

**FASD** has been produced for use by parents, caregivers and front-line workers (www.von.ca/fasd).

**Conclusion/Discussion:** The research has established the importance of recognizing the expert status of parents and caregivers of children and adults affected by FASD. Their knowledge should be respected and utilized in determining appropriate interventions and supports.

**Keywords:** Qualitative, parents/caregivers, resource

Funding Source: FASD National Strategic Projects
Fund, Public Health Agency of Canada
Conflict of Interest: None
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# Pilot study on screening newborns for alcohol exposure – Clinical implementation

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**Background:** The optimal time period for FASD diagnosis and intervention is prior to age 6, however only 11% of alcohol-affected individuals are diagnosed by this time. This low rate can be partially attributed to the difficulty in obtaining accurate maternal histories of prenatal alcohol use. Meconium analysis for fatty acid ethyl esters (FAEEs) is a potentially useful tool for objectively obtaining prenatal exposure history in clinical practice and identifying neonates at risk for FASD.

**Objective:** Assess the level of voluntary participation in meconium screening for prenatal alcohol exposure with informed consent and determine if meconium is positive for FAEEs correlates with developmental milestones.

**Hypotheses**: The rate of voluntary participation will be significantly lower compared to the rate established with anonymous testing in the same geographic population. Children with FAEE positive meconium are expected to exhibit delays in developmental milestones.

**Methods:** This is a prospective cohort study encompassing neonates born to women living in the Grey Bruce region of Ontario. FAEEs in meconium will be analyzed by gas chromatography/ mass spectrometry.

Statistical analysis of results will include descriptive statistics, correlation and regression analysis.

**Results:** Sample collection scheduled to begin in September 2007.

**Discussion:** By quantifying the level of voluntary participation, the clinical value of meconium testing for the presence of FAEE can be established. This, in turn, will significantly impact the ability to provide earlier diagnosis and interventions for FASD-affected children, leading to improved quality of life and decrease in rates and costs associated with secondary disabilities.

**Keywords:** Pilot, meconium, FAEE

Funding Source: CIHR Conflict of Interest: None

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Using traditional spirituality to support women who drink while pregnant: The story of the reclaiming of our voices gathering

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Background: Current research suggests that religious conversion in strongly correlated to reducing alcohol consumption in pregnant women. However, in aboriginal communities mainstream churches may not hold the promise of emancipation due to their history of colonization. However, little research has been done that looks at the use of traditional spiritual methods to support women in reducing their alcohol and drug consumption. Mothers who drink when pregnant often come to the attention of child welfare authorities. Most of the children of these mothers end up in the care of these agencies. A model that looks at ways of reaching and supporting mothers who have a history of drinking while pregnant holds great promise in reducing the number of children coming (and staying) in the care of the agency.

**Methods:** This study looks at the outcome of women who attended a three day retreat for women who have a history of drinking and using drugs while pregnant. The study uses a qualitative method that includes reviewing evaluations from 2 prior conferences as well as focused interviews with individuals who have attended prior gatherings and, as a result, begun to embrace aboriginal spirituality.

**Results/Conclusion:** The study showed a high level of commitment from the participants of the gathering to embrace traditional spirituality both at the gathering and throughout the year. It also demonstrated that once these spiritual methods were taken up, women were more ready to parent their children and to have their children in the care of a child protection agency returned to them.

**Keywords:** Tradition, aboriginal spirituality

Funding Source: West Region Child and Family Services Conflict of Interest: The researcher was previously employed by the agency but is currently on staff at another child welfare agency. Research Assistants/Students are on staff at the agency that sponsored the study. Interviews were conducted by agency staff trained in therapeutic interviewing who have no professional involvement with the gathering.

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