

**55** EFFECTS OF MARIJUANA SMOKING DURING PREGNANCY ON NEWBORN CRY ANALYSIS  
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It has been suggested that marijuana smoking during pregnancy may have adverse effects on the neonate. In the present study, acoustic analysis of the newborn cry, a measure which has been related to a number of clinical conditions including developmental outcome, was studied in newborns of smokers and non-smokers. The study was conducted in Jamaica and included 20 infants of mothers who smoked throughout pregnancy and 20 infants of mothers who did not smoke during pregnancy. Verification of smokers and non-smokers was based on interviews with the mothers, their neighbors and direct observation. The cry was tape recorded during a newborn exam and analyzed by high speed computer as in previous studies. The cries of infants of smokers were shorter in duration ( $p < .02$ ) and showed a higher percentage of dysphonation ( $p < .0001$ ), a higher average fundamental frequency ( $p < .03$ ), a wider range in the fundamental frequency ( $p < .0001$ ), and a lower average first formant ( $p < .0003$ ) than the cries of infants of non-smokers. The results suggest possible teratologic effects of marijuana smoking during pregnancy on neonatal outcome that may have implications for later developmental outcome.

**56** CRY ANALYSIS AND MEDICAL AND NEUROLOGICAL STATUS IN PRETERM INFANTS  
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The purpose of this study was to relate acoustic characteristics of the cry to medical and neurological status in preterm infants. The sample included 40 infants divided into 4 groups, a group of term controls and 3 groups of preterms all born < 34 weeks gestational age and < 1700 grams. The preterm groups included healthy preterms, sick infants who did not have CNS disease and sick infants with CNS disease. The cry was elicited by pain stimulus and recorded at 40 weeks conceptional age and analyzed by computer as in previous work. Medical risk was measured with the Hobel scale, neurological status with the Dubowitz exam. Preterm infants with CNS disease showed a longer cry, ( $p < .05$ ), lower first formant ( $p < .03$ ) than the other preterm groups. Term infants showed more energy in the cry than preterms ( $p < .004$ ). Higher risk on the Hobel scale was correlated with a longer cry duration ( $r = .46, p < .04$ ), lower first formant ( $r = .49, p < .05$ ) and more variability in cry duration ( $r = .60, p < .007$ ). Abnormal scores on the Dubowitz were correlated with a lower first formant ( $r = .44, p < .05$ ). Results suggest cry analysis may be useful in the early detection of the infant at risk.

**57** EFFECTS OF PASSIVE SMOKING ON CHILDREN'S BEHAVIORAL AND COGNITIVE DEVELOPMENT. Marta H. Lifschitz, Geraldine S. Wilson, John J. Langone, Zulma Ulate, William D. Williamson. Baylor College of Medicine, Texas Children's Hosp, Dept of Pediatrics, Houston, Texas.

Seventy children were evaluated at the mean age of 4.7 years as part of a longitudinal study of full term infants born to cigarette smokers and to non-smokers. They were enrolled at birth. Evaluation included a PEER [Pediatric Examination of Education Readiness]: (score: 1=no concern, 2=equivocal, 3=definite concern); McCarthy Scales, speech & learning assessment, and pulmonary function testing. Parents completed an ANSER System questionnaire: (0=definite concern, 1=equivocal, 2=no concern). The history of passive smoking was validated by measurement of cotinine in urine and saliva of the children and their mothers. Significant findings are shown in the table. Multiple regression analysis was used to adjust for sex, race, SES, preschool experience and urine cotinine level.

	Non-exposed		Smoking-exposed		T-Test P-value	Regression P-value
	n=35	n=35	n=35	n=35		
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	unadj	adjust
McCarthy GCI	111 ± 12	105 ± 13			<0.05	NS
PEER Linguistic	1.0 ± 0.2	1.3 ± 0.6			<0.05	<0.01
PEER Process Effic.	1.2 ± 0.4	1.5 ± 0.8			<0.05	<0.05
PEER ATT/ACT	1.7 ± 0.9	1.8 ± 0.8			NS	<0.02
ANSER ATT/ACT	1.7 ± 0.3	1.6 ± 0.4			NS	<0.001

These data indicate that exposure to smoking in utero or in childhood may affect neurobehavioral function of children.

**58** GROWTH PARAMETERS IN SCHOOL-AGED BOYS WITH LEARNING AND BEHAVIOR PROBLEMS. Paul H. Lipkin, Bruce K. Shapiro, Arnold J. Capute, (Spon. by P. Lanzkowsky), SUNY Stony Brook, Schneider Child. Hosp. LIJMC, New Hyde Park and Johns Hopkins Med. Inst., Kennedy Inst., Dept. of Pediatrics, Baltimore.

Children with learning and behavior problems may have mild growth suppression when treated with stimulant medication for poor attention or hyperactivity. However, data is unavailable substantiating normal growth in untreated children. This study was undertaken to identify any difference in growth parameters of such children compared to national norms. A retrospective analysis was undertaken via chart review of 97 boys between 6 and 11 years of age, with normal intelligence and on no medication, evaluated for learning or behavior problems and diagnosed as learning disabled, attention deficit disorder, and/or minimal cerebral dysfunction. Height and weight were obtained at initial evaluation with a standard medical scale. A z-score was assigned for these values as well as weight-for-height ratio (w/h) based upon the Natl. Ctr. for Health Statistics standards. Analysis of SES, number of behavior problems, IQ, reading quotient, and parental education was performed to identify any correlations with these measures. Height, weight, and w/h showed no statistically significant difference between this group and the general population (mean z-score ± 1 SD: 0.06 ± 1.23, 0.18 ± 1.22, 0.18 ± 1.02, respectively). No correlations were found between these growth measures and the other factors. We conclude that children with learning and behavior problems, including subclasses of these children, are of normal stature and weight.

**59** REDUCING THE SYMPTOMS OF INFANT COLIC BY INTRODUCTION OF A VIBRATION/SOUND BASED INTERVENTION. William E. Loadman, Kevin Arnold, Rita Volmer, Richard Petrella, Louis Z. Cooper. Ohio St. Univ. Mt. Carmel Hosp. Child Hosp., Columbia Univ. and St. Luke's-Roosevelt Hosp.

Infantile colic, a poorly understood but characteristic symptom complex, causes considerable distress to many infants, anguish to their parents and frustration to pediatricians. No method of treatment has consistently provided satisfactory relief during the early months of infancy when this condition disrupts family life. We studied sixty infants with colic (age range 2 wks. to 3 mos.). In a classic ABA, 2 x 2 factorial design which used a highly reliable colic severity score, infants were assigned randomly to receive motion simulation (two frequencies of vibration) with or without added sound. Either of the frequencies of vibration, with or without sound, reduced colic severity significantly in 97% of the infants. Statistical analyses confirmed clinical impressions that the lower frequency vibration with sound was most effective in relief of symptoms. Treatment effect was noted within 4 to 9 minutes, in contrast to prolonged symptoms in infants with untreated colic. During 25 percent of the treatments, infants fell asleep and remained so during posttreatment observation. Thirty-two of the sixty infants either fell asleep or entered a quiet restful state during treatment, but had some degree of return in colic severity when the treatment phase (15 minutes) was completed. Maternal stress levels were reduced during the treatment period of the study but escalated when the equipment was removed from the home. The results of this controlled trial demonstrated an effective and practical treatment approach for relief of infantile colic.

**HUMAN GROWTH HORMONE AND THE FDA BAN: PSYCHOLOGICAL IMPACT**

**60** Tom Mazur, Richard R. Clopper, Margaret H. McGillivray, Mary L. Voorhess, Linda Tibb, Anne Smith, and Barbara Mills SUNYAB, Buffalo Children's Hospital, Depts of Pediatrics and Child Psychiatry

In April, 1985, the FDA banned the distribution of pituitary growth hormone (hGH) because of the possibility that it was contaminated by a "slow virus". All parents of children receiving hGH were notified by mail of the ban and subsequently invited to attend 3 meetings during which the ban, hGH, bio-engineered growth hormone (bGH) and the risks were discussed by physicians and psychologists. Approximately 10 months after the ban, we interviewed 32 children (30 males, 2 females, mean age 13.8 ± 2.5 years) and at least one parent about the psychological impact of it. The mean treatment with hGH for these children was 3.0 ± 2.5 years. All had started on bGH.

**Results:** (1) Parents reported a shift from positive to negative feelings about their children's GH treatment. Children reported a similar but less pronounced shift. (2) All parents reported being well informed about the reason for the ban, but 19% of the children were uninformed by parental choice. (3) Parents and children frequently voiced concern about the possible risk of neurological disease from GH given prior to the ban. Parents also voiced concern about their children not being able to grow tall because GH was banned. Children, too voiced this concern. (4) Most parents stated a concern about the safety of bGH. (5) Despite fears about prior GH treatment and present bGH treatment, all chose bGH therapy.

**Conclusion:** Statural growth is seen as more important than possible risk of therapy. Our policy of immediate, full disclosure with opportunity for interactive discussion was considered beneficial by the parents.