31 BEHAVIORAL DEVELOPMENT OF PREMATURES WITH NEONATAL HYPOCALCEMIA. Gary Chan, Marilyn Chan, Reginald C. Tsang, Sharon Elsass, University of Cinti. and Univ. of Utah, Dept. of Pediatrics.

The behavioral development and possible sequelae of "early" neonatal hypocalcemia (HC, occurring in the first 3 days of life) have not been examined. From a prospective study of Vitamin D supplementation, 6 well AGA prematures (gestation 32 to 37 wks. who were hypocalcemic at 48 hours of age (SS-20 ionized Ca<3.5 mg/dl) were pair matched (gestation and Apgar) with 6 normocalcemic (NC) infants. Infants were examined for amount of tremors on day 1,2,3, with Brazelton Behavioral Assessment (BBA) at 40 weeks post conception and Gesell Developmental Exam. (GDE) at 3 and 6 months. All exams. were blind to Ca levels. There were no differences between HC and NC groups in degree of tremors during the 1st. 3 days. In the BBA, the HC infants were less responsive to the ball than NC infants, 3.8±0.3 (mean±SEM) vs. 4.7±0.1 (Wilcoxon Rank, $p<0.05$); the HC infants were less responsive to the voice than NC infants, 4.3±0.1 vs 5.3±0.1 ($p<0.05$), and less responsive to voice and face than NC, 4.5±0.1 vs. 5.6 ±0.2 ($p<0.05$). The HC group also needed more consoling than NC infants, 6.6±0.3 vs 7.6±0.3 ($p<0.05$) and were more excitable than NC infants, 6.4±0.4 vs 5.8±0.3 ($p<0.05$). The GDE at 3 months was lower for the HC infants (90±3) compared to NC (99±1), $p<0.05$. At 6 months there was no difference between the 2 groups, 112±1 vs 111±1. Early neonatal hypocalcemia is associated with less responsiveness and more excitability in the neonate, with possible effects at 3 months.

32 DOSE DEPENDENT EFFECTS OF METHYLPHENIDATE ON HYPERACTIVE CHILDREN. Linda Charles*, T. Zelniker*, and R. J. Schain, Depts. of Pediatrics and Psych., UCLA.

The clinical problem of hyperactivity is primarily regarded as an attentional deficit. The purpose of this study was to investigate the nature of this attentional deficit and the effect of various dosage schedules of methylphenidate (MP) upon it. 41 hyperactive (HA) children, ages 7-11 years, were tested prior to drug, at two week intervals for eight weeks, after eight weeks on maximum dosage, and after two weeks off drug. Initial dosage was .2 mg/kg and, in the absence of adverse effects, was increased by .2 mg/kg every two weeks up to .8 mg/kg/day. 33 of the 41 subjects were judged to successfully respond to MP. There was a significant improvement in parent and teacher's rating scores and a significant increase in accuracy in attentional performance from pre-drug to end of drug treatment; further there were significant decrements in these measures during the off-drug period. The mean dosage at which greatest response was obtained was .4-.5 mg/kg. Increasing dosage beyond this range did not improve ratings or performance for most drug responders. These findings provide objective evidence that methylphenidate often improves the ability to sustain attention, decreases impulsive responding, and improves behavior as rated by parents and teachers. Such improvement is achieved with relatively low dosage schedules. Higher doses are associated with the appearance of adverse personality changes, such as nervousness, apathy, and aggression, and defeat the purposes of improving school or social adaptation of hyperactive children.

33 A NICU PARENT BOOKLET AND ITS EVALUATION. Tom D. Coleman, Erika R. Forte, and August L. Jung. (Spon. by M. Eugene Lahey). University of Utah Medical Center, Department of Pediatrics, Salt Lake City, Utah.

This paper discusses the origins and content of a NICU parent orientation booklet and its evaluation. The booklet (NICU) is given to parents at the time of transport, or birth, of their infant. Its effectiveness was evaluated by questionnaire to 100 parents within two weeks after their neonate's admission. 98 parents read the booklet; 90% of those who read the booklet found it helpful in understanding therapy, routine and special procedures. 74% found it helpful in understanding terms used by the staff. 94% understood visiting and their care-taking roles upon their first visit. 85% found the booklet helpful knowing what to expect and to feel more comfortable during their first visit. 98% felt comfortable in asking questions freely after being prompted to do so by the booklet. Less than 5% felt the pictures made them feel worse. 83% of the transport team, 30% of staff nurses and 20% of housestaff used the booklet to supplement their orientation of families to the NICU.

We concluded that a family orientation booklet to a NICU is helpful in preparing families for the events of a NICU admission of their neonate.

34 GROUP EDUCATION OF PARENTS IN A PEDIATRIC PRACTICE TO PROMOTE CHILD DEVELOPMENT. Richard B. Colletti, Kathleen Boyle, Rose B. Colletti, Dale E. Goldhaber, Jeanne Goldhaber, Lawrence G. Shelton, and Paul C. Young. (Spon. by R. James McKay) University of Vermont, Department of Pediatrics, Burlington, Vermont.

To determine if a group educational program for parents would be an effective approach in promoting the development of children in a general pediatric practice, 2 pediatricians and a nurse practitioner collaborated with 4 local professionals in child development. Parents of all 65 children born and entering the practice between August and November 1976 were invited to participate at no charge in bimonthly evening meetings beginning when their children were 5 months old. 35% of invited parents attended the meetings and average attendance was 23% of invited parents. 69% of parents in the highest social position participated, but only 8% in the lowest did ($p<.01$). 60% of college graduates, but only 14% of parents who did not complete high school participated ($p<.05$). There was no significant difference between participants and nonparticipants in marital status, number of children, sex of the child, distance of home from the office, frequency or duration of breast feeding, or infant temperament. This study suggests that group educational programs in child development for parents, aimed at improving cognitive stimulation of their children, will not enlist the participation of the poor or less educated unless special attempts are made to recruit them.

35 NEONATAL HEAD SIZE AND SUBSEQUENT NEUROBEHAVIORAL STATUS IN VLBW INFANTS. Cecelia Daum, Herbert G. Vaughan, Jr., Diane Kurtzberg and Bruce Grellong (Spon. by Lawrence M. Gartner) Albert Einstein College of Medicine, Departments of Neuroscience, Pediatrics and Psychiatry, Bronx, New York.

The relationship of head size at birth and at 40 weeks conceptional age to subsequent neurobehavioral development in 40 very low birthweight infants (VLBW<1500 Gm) was examined. At birth 85% of the infants had a head circumference below the 10th percentile for gestational age (SHA) whereas by 40 weeks CA the proportion of infants whose heads remained SHA fell to 60%. At 7 months of age corrected for term gestation 83% of the VLBW infants had achieved normal head circumference. The Bayley Scales of Infant Development were administered to all the infants at 7 months corrected age. The Mental Developmental Index (MDI) was less than 90 in 56% of the babies SHA at birth and in 60% of the AHA infants. By contrast, MDI less than 90 was found in 71% of the infants SHA at 40 weeks as compared to 23% of the infants AHA at 40 weeks ($P<0.05$). Regardless of subsequent attainment of normal head circumference, failure of head size to reach normal limits by 40 weeks conceptional age in VLBW infants carries with it a relatively poor prognosis for normal development at 7 months.

36 EFFECT OF BEHAVIOR MODIFICATION DRUGS ON CARTILAGE GLYCOSAMINOGLYCAN BIOSYNTHESIS. Linda Dickinson, B.S. Kilgore, H. Schedewie, F.J. Ma, M.J. Elders. Dept. of Ped., Univ. of Ark. for Med. Sci. Little Rock, AR.

Central nervous system stimulant drugs have been widely used for behavior modification in children. There are reports to suggest some of these drugs cause growth retardation. Possible etiologies for the growth retardation include decreased food intake, alteration of the hypothalamic-pituitary-growth hormone-somatomedin system versus a direct effect at the cartilage level. In a study of 28 hyperkinetic children the initial mean resting growth hormone (GH) was 2.8 ng/ml; after 4 wks of treatment it decreased to 0.70 ($p>0.2$) and post-treatment was 3.3. The mean stimulated GH concentration after one year of therapy in this group was normal, 14.05 ng/ml, suggesting suppression of GH secretion is not the etiology of the growth retardation. Somatomedin activities were not significantly different before or after therapy. The addition of 1 mM methamphetamine, methylphenidate or pemoline to cartilage cells in vitro showed 70%, 63% and 8% inhibition of $^{35}SO_4$ uptake into glycosaminoglycans (GAGS), respectively. Assay of the glycosyltransferases involved in forming the GAGS biosynthetic linkage region showed xylosyltransferase to be inhibited 50 to 65%, galactosyltransferase 30-40% and glucuronyltransferase was inhibited only 15-18%. Pemoline had minimal effects on these enzymatic activities. These data suggest one possible explanation for the growth retardation seen in children may be due to a direct inhibition of cartilage GAGS biosynthesis rather than any specific alteration in hormonal mechanisms.