43 DEVELOPMENTAL OUTCOME AT 1 YR. OF VERY LOW BIRTHWEIGHT (VLBW) INBORN NEONATES OF LOW-INCOME FAMILIES. Alejandro Gonzalez, Marilyn B. Escobedo, Jill T. Schlansker, Ramiro Caballero, Marisol Montes, Cheryl Cipriani, Carolyn McLerran and Maria Rendon (Spon by John Mangos). Dept. of Ped., Univ of TX Health Sci Ctr at San Antonio.

The efficacy of neonatal intensive care for the VLBW (≤1250 gm) infant has been infrequently evaluated in low-income populations because of poor compliance and incomplete patient retrieval. All VLBW infants born at Medical Center Hospital are followed for 2 yrs in a program which provides continuity of contact with medical professionals, comprehensive medical care and periodic developmental evaluation. Parents are supported by telephone contacts, home visits, and developmental counseling. Of 31,608 infants born in 1979-1983, 271 (0.9%) weighed <1250 gm and 124 (46%) survived. Of 103 who are now 1 yr corrected age or older, 78 (76%) have been successfully followed for at least 1 yr. Mean birthweight and gestational age were 1045 gm (range 709-1250) and 30 wk (range 25-40). Mean maternal age was 22 yr; mean number of yr of maternal education was 10. Mean MDI (mental index) was 97 (<50-140) with 14 (18%) infants scoring >1SD below the mean. Mean PDI (motor index) was 87 (range <50-122) with 21 (27%) infants scoring >1SD. This inborn, poor, medically complicated group of VLBW infants was retrieved at a high rate and shown to have a favorable developmental outcome with a program designed to provide continuity of care and comprehensive medical and developmental services.

●44 ANALYSIS OF FINE MOTOR DYSFUNCTIONS IN CHILDREN WITH SEVERE WRITING DIFFICULTY. Thomas J. Hathaway, Melvin D. Levine, and Terry Fenton. The Children's Hospital, 300 Longwood Ave, Boston, Mass. 02115.

233 9-15 year old students from 3 towns were selected by school personnel as meeting present criteria for low academic productivity with normal IQ. Another cohort (n=426) were selected randomly from the same schools. 15% of all subjects and 29% of unproductive ones were rated by teachers as having severe writing problems. 13 items were devised and administered blindly to assess four fine motor components: Eye-hand coordination, Proprioki nesthetic feedback (gnosia), Motor praxis/organization, and Motor memory. Eye-hand tests did not discriminate good from poor writers (p=NS), but other associations emerged:

Component	Writing Impaired	Non-writing Impaired	P
Eye:Hand	19%	12%	NS
Feedback	15%	5%	<.01
Praxis	31%	19%	<.05
Memory	33%	20%	<.01
Planning & Memory	23%	9%	<.01

Highest correlations were between combinations of these dysfunctions and global writing impairment, as well as just low written volume.

Fine motor disabilities are a common neurodevelopmental cause of low academic productivity. The tendency to equate fine motor ability soley with eye-hand coordination is misleading; more careful assessment of non-visual feedback, praxis, and memory is critical for the identification and management of hidden handicaps reducing output in middle childhood.

45 PERFORMANCE OF CHILDREN TO 8 YEARS WHO RECEIVED NEONATAL INTENSIVE CARE. Jane V. Hunt, William H. Tooley, Bruce A.B. Cooper. Cardiovascular Research Institute, University of California, San Francisco, CA 94143

We tested 297 children repeatedly from 6 mos to 8 yrs. All were born in 1965-1975 and required neonatal intensive care because of low birth weight (BW) and/or hyaline membrane disease. Most were from middle-class families. All but 5% were testable at 8 yrs with standard psychological tests. In all, 86% had IQs >85; for infants with BW ≤1500 the proportion was 80%. For the whole group, mild intellectual disabilities were the major adverse outcomes detected at 8 yrs.

Two specific disabilities that occurred frequently were low visual-motor integration scores (VMI deficit) and language disability (low WISC-R Verbal IQ--Low VIQ). The behavioral antecedents of these problems were examined by comparisons with IQ-matched groups that did not have the disability. The VMI deficit group had lower IQ than its comparison by 2 yrs of age and thereafter. The Low VIQ group did not differ from its comparison group until age 3 yrs when lower IQ was noted which persisted through age 6 yrs. Predictive test items associated with the observed IQ differences have been identified. The neonatal precursors of specific disabilities were also examined. VLBW was associated with Low VIQ but not with VMI deficit. Sex differences were not significant in these discrete outcomes. When an overall illness rating which had been assigned to each infant was considered, the Low VIQ group have been significantly more sick than all other children except those with IQ <75.

(Supported by HL-27356 and HD-17669)

†46 EXPOSURE TO NARCOTICS IN-UTERO: ANALYSES OF SPECIFIC COGNITIVE BEHAVIOR AT 6 AND 12 MONTHS OF AGE, Karol Kaltenbach and Loretta Finnegan, Jefferson Medical College of the Thomas Jefferson University, Department of Pediatrics, Philadelphia, PA

Existing data regarding the development of infants exposed to narcotics in-utero have consistently found their developmental status to be well within the normal range at 6 and 12 months of age but often report finding differences between the developmental scores of infants exposed to narcotics in-utero and comparison infants. Development is assessed with the Bayley Scale of Infant Development and the data reflect differences in mean developmental summary scores. In order to determine if these differences reflect deficits in specific areas, we examined the pass/ fail rate on individual Bayley items according to subscales of different behaviors. The following subscales (derived by Kohen-Raz, Genetic Psychology Monograph, 1967), were used: Eye-hand; manipulation; object relation; imitation-comprehension; and vocabulary.

The Bayley Scale of Mental Development for 95 drug exposed infants and 33 comparison infants at 6 months of age was analyzed for pass/fail rates on eye-hand, object relationship and manipulation subscale items. Repeated 12 month Bayley assessments scores for 68 drug exposed infants and 31 comparison were analyzed in the same manner but with the inclusion of the imitation-comprehension and vocabulary subscale items. Results indicate that at 6 months of age drug exposed and comparison infants do not differ on pass/fail rates for eye-hand, object relations, and manipulation items. At 12 months of age, no differences were found on eye-hand and vocabulary items but differences were found in imitation-comprehension (x^2=4.69, $p < .05$), manipulation (x^2=4.12, $p < .05$), and object relations (x^2=3.32, $p < .05$)

These differences in specific behaviors may reflect only transitory delays or could be indicative of subtle developmental sequalae that have not been identified by the use of summary score assessments.

†47 ANXIETY LEVELS OF PARENTS OF INTENSIVE CARE NURSERY (ICN) PATIENTS. Gerald H. Katzman, Susan McQuiston, Eliza McCartney, Kathy Ahonen. (Spon. by M. G. Robinson), Medical College of Ohio, The Toledo Hospital, Dept. of Ped., Toledo, Ohio.

Parents of ICN neonates were administered the State-Trait Anxiety Inventory (Spielberger, 1983) following admission to ICN and approximately 7 days pre-discharge. Parents of well neonates two to three days of age were also studied. From the data obtained mean state anxiety (SA) was greater than trait anxiety (TA) for both mothers and fathers although statistically significant only for mothers ($p < .05$). SA levels for ICN mothers were higher than those of ICN fathers ($p < .05$), "well" nursery mothers ($p < .001$), and published norms for an age-matched female population ($\bar{x}$=36.17) ($p < .001$). A significant decrease in mothers' state anxiety ($p < .025$) occurred over time such that their pre-discharge levels approached normal. No correlation between a Neonatal Morbidity Scale (Minde et al, 1983) and maternal anxiety was found. Ongoing analyses of demographic variables and characteristics of the ICN are being carried out to identify factors which influence parental anxiety.

POPULATION GROUP	TRAIT ANXIETY $\bar{x}$ MOTHERS	TRAIT ANXIETY $\bar{x}$ FATHERS	STATE ANXIETY $\bar{x}$ MOTHERS	STATE ANXIETY $\bar{x}$ FATHERS
NICU Neonates (admission)	35.98 n = 50	36.03 n = 34	44.79 n = 47	38.32 n = 37
"Well" Neonates	35.42 n = 38	36.67 n = 15	31.56 n = 39	30.81 n = 16
NICU Neonates (pre-discharge)	33.29 n = 21	34.44 n = 16	34.19 n = 21	35.23 n = 17

●48 IS INTRAUTERINE GROWTH RETARDATION A RISK FACTOR OF CHILD ABUSE? John M. Leventhal, Anne Berg, Susan A. Egerter (Spon. by Paul McCarthy). Yale University School of Medicine, Yale-New Haven Hospital, Dept. of Pediatrics, New Haven

Although it has been suggested that IUGR infants, with their more aversive cries and poorer interactive capabilities than normal infants, may be at an increased risk of child abuse, few data are available to either support or refute this hypothesis. Therefore, we conducted a case-control study to determine whether IUGR infants are at an increased risk of being physically abused. Cases were children who: (1) had been born at Yale-New Haven Hospital and were reported because of suspected abuse to the hospital's child abuse committee from Jan. 1974-Dec. 1979, and (2) had evidence of definite or probable physical abuse based on a "blinded" review of the incident by one of the authors. For each case, one control without evidence of abuse was chosen from the hospital's log of births and matched to the case by age, gender, race, method of payment for the hospitalization, and source of pediatric care. To be certain that an association between abuse and IUGR was not missed, 4 different definitions of IUGR were used. Infants were defined as having IUGR if they had either a ponderal index that was below the tenth percentile for gestational age using the Kansas City or Denver growth standards or a birthweight below the tenth percentile using the same two standards.

We identified 117 case-control pairs that met the criteria for eligibility. The matched odds ratios for each of the four definitions of IUGR were less than one (ranging from 0.40 to 0.75). Thus IUGR infants occurred more commonly in the controls than the cases and therefore appeared to be at a decreased risk of abuse. The only significant matched odds ratio was for a low ponderal index according to the Kansas City standard (0.4, χ^2 = 5.60, $p < .05$). This result was not affected after controlling for possible confounding factors such as the mother's age or parity, or the child's age at the time of abuse.

Based on this carefully designed study, we conclude that IUGR infants are not at an increased risk of physical abuse and may be at a decreased risk.