73 PEDIATRIC BURN VICTIMS: AN ECOBEHAVIORAL ANALYSIS Kenneth J. Tarnowski, L. Kaye Rasnake, James A. Mulick, Laura Smith, & Thomas R. Linscheid. Ohio State University & Children's Hospital, Department of Pediatrics, Columbus, OH

Investigators assert that the ward behavior of pediatric burn victims is a variant of the "ICU syndrome". Given the lack of data from pediatric burn care units (PBCU's) and the differences which exist between these patient units and PICU's systematic observational data were collected on 40 PBCU patients. An observational coding scheme was used to code patient and staff responses for a total of 1919 observations. Patients were often observed (49% of observations) in burn unit locations (e.g., playroom) outside of patient rooms. Children were most often awake (75%) with neutral affect (61%). Positive affect and verbal-motor distress were noted during 18% and 24% of observations, respectively. Patient-staff verbal interactions were frequent (>50%) while physical interactions were less common (8%). Other individuals were often observed in close proximity to patients (nurses-33%, other patients-33%, family-16%, psychosocial staff-11%, child life-6%, & physicians-4%). Children engaged in a variety of ward activities (playing-32%, walking-10%, TV-8%, & reading-2%) and received medical treatments during 5% of observations. These data contrast markedly with those available from pediatric ICU studies. Children on PBCU's are more alert, physically active, exposed to more environmental stimulation, and exhibit more positive affect that their ICU counterparts. Results indicate negative responses and poor adaptation of children to PBCU's environments may be exaggerated.

†74 NEUROPSYCHOLOGICAL CORRELATES OF A CONTINUOUS PERFORMANCE TASK IN ATTENTION DEFICIT DISORDER (ADD) Barbara L. Trommer, Rudy Lorber, Kevin Armstrong, JoAnn Hoeppner, (Spon.by J.Pasternak) Northwestern Univ., Evanston Hosp.,Dept.of Peds.,Evanston, IL.

Automated continuous performance tests(CPT) are gaining popularity as aids to the diagnosis of ADD. We administered a commercially available visual CPT to 40 children who met the DSM-III criteria for ADD (mean age 9.7 yrs, mean Connors PSQ score 17.2) and found that 35% performed within the normal range and would thus go undetected by this measure. Therefore, 14 additional ADD children (mean age 9.0 yrs, mean Connors PSQ score 17.2) underwent neuropsychological testing to determine the relationship between cognitive variables and two measures of CPT performance: total correct responses (i.e., attentiveness) and total commission errors (i.e., impulsivity). Abstract reasoning (e.g., Category test) was found to be positively related to total correct responses ($r=.57;N=12;p<.05$) and inversely related to total commission errors ($r= -.54;N=12;p<.05$). Measures of non-verbal problem-solving (e.g., Object Assembly and Block Design subtests of the WISC-R) were positively related to correct responses ($r=.67;N=11,;p<.02$ and $r=.66;N=11;p<.02$, respectively). Those children who performed in the abnormal range on the CPT accounted for the poorest performances on the measures of verbal and non-verbal problem-solving, and IQ scores. These results suggest that performance on a CPT is not independent of higher level cognitive factors and is thus not purely a function of sustained attention and/or the ability to inhibit impulsive responding. Therefore, caution must be used in the interpretation of CPT performance in the diagnosis and treatment of ADD.

●75 LANGUAGE DEVELOPMENT IN CHILDREN WITH ADVANCED PHYSICAL MATURATION. Bruce E. Wilson and Peggy McCardle. (Spon. by Itzhak Brook) Walter Reed Army Med. Center, Dept. of Peds, Washington, DC; and USUHS, Dept. of Peds, Bethesda, MD.

Differences in language development and function have long been noted between males and females. These are felt to result from the faster maturation rate in females, leading to increased bilateral language function in the brain (Waber, 1976). To test this, we examined language function in two groups with rapid maturation, using the Clinical Evaluation of Language Function. Patients, 5 to 12 years old, with idiopathic precocious puberty (n=12) or congenital adrenal hyperplasia (CAH) (n=14), were tested. We hypothesized that sex hormone exposure might be related to the observed differences, since they emerge in late childhood. Girls with CAH are exposed to androgens and represent a natural cross-over between genetic sex and hormone exposure. The comparison score (language processing vs production) was significantly lower in children with androgen exposure, both male and female ($p<0.025$). No differences were observed between diagnoses, sponsor rank (a measure of socio-economic status), or degree of physical advancement as measured by bone age. On subtest scores, estrogen exposed children scored better in oral directions and word series, while androgen exposed children scored better in confrontation naming accuracy and word associations. These results suggest hormonal exposure affects language development, and that current theories may be overly simple for this complex area.

76 BEHAVIORAL FUNCTIONING AND SOCIAL COMPETENCY AMONG HEMOPHILIC ADOLESCENTS. Alan D. Woolf,Eugene J. D'Angelo,Jocelyn Bassette,& Leonard Rappaport (Spon. by David G. Nathan). Harvard Medical School & The Children's Hospital, Dept. of Medicine, Boston, MA.

As part of an investigation of the needs of boys with hemophilia, we compared their behaviors and social competencies with those of an unaffected control group.The parents of 10 younger (8-11 years) and 20 older (12-21 years) boys with factor VIII deficiency and 30 whose sons were of corresponding ages and SES but were without significant medical problems were administered the Child Behavior Checklist (CBCL).The t Test for Independent Samples was used to make comparisons between groups.Results showed younger boys with hemophilia were rated as exhibiting more depression ($p<.05$), uncommunicative behavior ($p<.02$), social withdrawal ($p<.01$), and aggressivity ($p<.007$) than did their unaffected counterparts.Older hemophilic boys were rated as experiencing more somatic complaints ($p<.02$), uncommunicativeness ($p<.007$), immaturity ($p<.04$), delinquent-like behavior ($p<.05$), aggressivity ($p<.003$), hyperactivity ($p<.025$), overall behavioral difficulties ($p<.002$), and greater externalizing ($p<.003$) and internalizing ($p<.01$) symptom clusters than controls.Comparisons of CBCL scores between younger and older hemophilic boys revealed greater social withdrawal in the older group ($t=2.79;p<.009$).Such findings suggest the predominant difficulties of younger hemophilic boys were lower social interaction along with associated dysphoric symptoms;whereas older boys manifested increased behavioral difficulties which corresponded with reduced social competency.Our results have important implications for the types and intensity of support services which should be made available to families of children and adolescents with hemophilia.

CARDIOLOGY

†77 DECREASED ERYTHROCYTE Na^+ PUMP ACTIVITY IN NORMOTENSIVE CHILDREN OF HYPERTENSIVE PARENTS Bruce S. Alpert, R. William Caldwell, Joseph K. Murphy, Eliane S. Willey, Emel Songu-Mize, and F. Bruder Stapleton, University of Tennessee, Memphis, LeBonheur Children's Medical Center and the Clinical Research Center, Departments of Pediatrics and Pharmacology, Memphis.

Increased erythrocyte (RBC) intracellular Na^+ and depressed RBC Na^+-pump activity (NaPA) occur in adults with essential hypertension (EH). Lithium-Na countertransport (Na influx) has been found to be increased in RBC of normotensive (N) children of hypertensive parents, and may serve as a marker for later EH. To examine whether RBC NaPA (Na efflux) was also associated with parental EH, and perhaps with an increased likelihood of subsequent EH, we assayed ouabain-sensitive ^{86}Rb-uptake in the RBC of 61 N children, 41 with N parents (Group I), and 20 with at least 1 parent with EH (Group II). RBC NaPA was assessed both in plasma from the same subject and in a Krebs buffer. When NaPA was assayed in plasma, values were significantly lower in Group II, 3.07 ± 0.39 (mean ± sem) nmol/mg prot/30 min, compared to Group I, 4.35 ± 0.36 ($p<0.03$). RBC NaPA assayed in Krebs buffer was not statistically different (2.45 ± 0.48 vs 3.25 ± 0.40 $p<0.2$) for Groups II and I, respectively). Racial comparisons showed consistent trends (B>W), but no statistical significance. Thus, in a small biracial sample, NaPA was inhibited in N children whose parent(s) had EH. This may prove to be a sensitive marker for adult-onset EH, allowing prospective detection, intervention, and possible prevention of EH.

●78 MYOCARDIAL CONTRACTILE RESPONSES TO FORSKOLIN AND MILRINONE DURING POSTNATAL MATURATION. Michael Artman, James Wicke, Phillip A. Kithas, David B. Crump, Samuel J. Strada (Spon. by Robert C. Boerth) Univ. South Alabama College of Medicine, Depts. of Pediatrics and Pharmacology, Mobile, AL.

We determined the contractile responses to newer cardiotonic drugs in isometrically contracting right ventricular papillary muscles isolated from newborn (NB; 24-48 hrs), immature (IM; 14-18 days), and adult (AD; 6-10 months) rabbits. Cumulative dose-response relationships were obtained in each age group to forskolin, an agent that directly stimulates adenylate cyclase activity independent of adrenergic receptors, and to milrinone, a relatively selective inhibitor of high-affinity cAMP phosphodiesterase (PDE) activity. Both drugs increased developed tension and shortened time to peak tension and relaxation time. Tabulated below are results for the maximal rate of tension development (DT/dt) at low and high concentrations of forskolin and milrinone.

	DT/dt (% of control; mean±SEM)			
Age	Forskolin		Milrinone	
Group	1.0μM	10μM	30μM	700μM
NB	666±118	1218±209	84±18	94±22
IM	404±65	509±56	139±12	339±38
AD	184±15	278±29	122±9	170±21

The dramatic inotropic response to forskolin in NB myocardium suggests that at birth: 1) myocardial adenylate cyclase activity is well developed, and 2) the PDE system is inadequate to hydrolyze excessive cAMP. The latter conclusion is further supported by the lack of response to milrinone in NB muscles. These findings may have important implications in the design of cardiotonic drugs for use in the immature heart.