



## Meeting Abstracts

### Plenary Session

#### Abstract 1

##### **Listen Up, Parents! The Relative Importance of Adult-Child Conversations, Adult Speech, and Television to Language Development**

*Frederick J. Zimmerman, PhD, Health Services, University of California, Jill Gilkerson, PhD, Jeffrey A. Richards, MA, Infoture, Inc.*

**Purpose:** To test the independent associations of adult language input, television viewing, and adult-child conversations with child language acquisition among infants and toddlers. **Methods:** We enrolled 308 representative families with children ages 2-36 months in a study of the home language environment and child language development (Phase 1). Of these, 71 families continued for a longitudinal assessment over an additional 9 months (Phase 2). Child language development was assessed by the Preschool Language Survey, 4th Edition (PLS-4). Adult language input, adult-child conversations, and television viewing were assessed in home over several 12-hour sessions by unobtrusive electronic observation. In the cross-sectional sample we regressed PLS-4 scores on adult language input, television viewing, and adult-child conversations, controlling for child and family social and demographic attributes. In the longitudinal sample we regressed the Phase 2 PLS-4 scores on Phase 1 adult language input, television viewing, and adult-child conversations, controlling for Phase 1 PLS-4 scores and social and demographic attributes. This research was funded in part by the Infoture Corporation, Boulder, CO. **Results:** When included separately in cross-sectional regressions controlling for social and demographic attributes, adult language input and adult-child conversations were both significantly positively associated, and television was significantly negatively associated, with the PLS-4. When these variables were simultaneously included, only adult-child conversations retained its magnitude and significance. Similarly, in the fully-adjusted longitudinal regression, only adult-child conversations was a significant predictor of subsequent PLS-4 scores. **Conclusion:** The effects of adult language input and television viewing on child language development are fully mediated by adult-child conversations. Parents should be encouraged not merely to provide language input to their children through reading or storytelling, but to engage their children in two-sided conversations.

#### Abstract 2

##### **Identification of Children with Autism Spectrum Disorders (ASDs) by the Ages and Stages Questionnaires (ASQ)**

*Robert E. Nickel, MD, Pediatrics, Child Development & Rehabilitation Center, Oregon Health & Science University, Kimberly Murphy, Early Intervention Program, University of Oregon, Karen Grant, PsyD, Pediatrics, Child Development & Rehabilitation Center, Oregon Health & Science University, Jane Squires, PhD, Special Education/Early Intervention Program, University of Oregon*

**Purpose:** Determine the accuracy of a general developmental screen, the ASQ, in identifying children with ASDs in a referral sample. Several targeted screens for autism have been developed for use by primary care providers (PCPs), and guidelines developed by the American Academy of Pediatrics recommend use of a targeted screen at 18 months. PCPs, however, do not use developmental screens regularly in their practices, have little familiarity with autism screens, and are unlikely to add a second formal screening test to well child visits. **Methods:** Ongoing chart review of children 1-5 years of age who

received a diagnosis of an ASD based on comprehensive evaluation including developmental assessment, ADOS and structured autism interview. The Ages & Stages Questionnaire (ASQ), a parent-completed developmental screen, was completed by parents just prior to the autism or child development clinic appointment. The ASQ, a series of questionnaires for children 4-60 months of age, contains questions on communication, gross motor, fine motor, problem solving and personal-social skills.

**Results:** 58 children had an ASD diagnosis and ASQ data. They were 13.5 to 61 months of age, 47 (81%) 3 years of age or less. 45 children (77.6%) had autism, 13 another ASD and 52 (89.2%) had DQ <70. All failed one or more areas on the ASQ; 56 (96.6%) failed the communication section; 50 (86.2%) personal-social and 47 (81.0%) problem solving. A typical pattern on the ASQ for young children with ASD appeared to be delays in all skill areas except for passes in gross and/or fine motor skills.

**Conclusion:** This study reports preliminary data that a developmental screen, the ASQ, has high sensitivity in the identification of children with ASDs. Limitations of this study are the referral sample, small sample size, few high-functioning children with ASDs and few children less than 2 years of age.

### **Abstract 3**

#### **Suicidality among Children and Youth with Special Health Care Needs**

*Andrew J. Barnes, MD, Marla E. Eisenberg, ScD, Michael D. Resnick, PhD, Pediatrics, University of Minnesota*

**Purpose:** Children and youth with special health care needs may be especially vulnerable to emotional and behavioral problems. It is less clear whether these youth are also at risk for self-harm or suicidal thoughts, feelings, and behaviors. **Methods:** Cross-sectional analysis of self-report data from over 136,000 6th, 9th, and 12th-grade youth who took part in the 2007 Minnesota Student Survey. Logistic regression was used to control for covariates; identify key explanatory variables; and estimate the odds of suicidal ideation, self-harm, and suicide attempts among those with and without special health care needs (chronic physical and/or mental health conditions of >12 months' duration). **Results:** Independent of race, socioeconomic status, family structure, substance use, and emotional distress, youth with *both* chronic physical *and* mental health conditions (n=4099) had higher odds of suicidal ideation (Odds Ratio (OR) 2.5, 95% Confidence Interval 2.3-2.8), self-harm (OR 2.5, 2.3-2.8), and attempted suicide (OR 3.5, 3.2-3.8) than youth without such conditions (n=106,967). Youth with *either* a chronic physical health condition (n=12,554) *or* a chronic mental health condition (n=8752) alone were at intermediate risk. The findings were similar among males and females. **Conclusion:** Youth with chronic physical and/or mental health conditions are at high risk for emotional distress and suicidality. Preventive intervention programs that foster resiliency and socio-emotional well-being among children and youth with special health care needs should be developed and evaluated.

### **Abstract 4**

#### **Anterior Cingulate Activation During a Working Memory Task: A Comparison of Survivors of Leukemia and Healthy Children**

*Kristen E. Robinson, MS, Katherine L. Livesay, BS, Psychology and Human Development, Vanderbilt University, Laura K. Campbell, PhD, Department of Psychiatry and Neurobehavioral Science, University of Virginia Health System, Mary Scaduto, BS, College of Medicine, Ohio State University College of Medicine, Christopher J. Cannistraci, BS, Institute of Imaging Science, Vanderbilt University, Nashville, TN, James A. Whitlock, MD, Pediatric Hematology/Oncology, Vanderbilt University Medical Center, Bruce E. Compas, PhD, Psychology and Human Development, Vanderbilt University*

**Purpose:** A significant portion of survivors of childhood cancer experience long-term neurocognitive deficits, particularly in the areas of memory and executive functioning (Campbell et al., 2006). Specific mechanisms of neurocognitive deficits explored through neuroimaging has yet to be adequately considered. The Anterior Cingulate Cortex (ACC) is implicated by studies with populations showing similar deficits (e.g., individuals with Multiple Sclerosis) in working memory, and error detection and processing (e.g., Caccioppo et al., 2007; Sweet et al., 2006). **Methods:** This study examines executive functioning deficits of survivors of childhood Acute Lymphocytic Leukemia (ALL) who have shown evidence of neurocognitive deficits on assessment (WISC-IV, D-KEFS), compared to healthy controls (HC). Functional neuroimaging (fMRI) was used to compare groups performance on the N-back, a

working memory task. Neurocognitive testing and fMRI was conducted on 15 children (8 survivors and 7 controls), an adequate sample size for analyses on fMRI data. **Results:** Analyses of assessment data confirmed that controls scored significantly higher ( $p < .05$ ) on the VCI ( $d = 2.27$ ), WMI ( $d = 1.53$ ), PSI ( $d = 1.69$ ), and FSIQ ( $d = 2.13$ ) of the WISC-IV, and Sorting ( $d = 1.40$ ) and Color-Word Association ( $d = 1.19$ ) subtests of the D-KEFS. Between group GLM of fMRI data on the N-back indicates that survivors displayed greater changes in BOLD response ( $t > 8.55$ ; False Discovery Rate (FDR)  $< .05$ ) in the dorsal ACC (Brodmann's area 32), although they performed similarly to controls on the task itself. **Conclusion:** These results support a model of compensatory activation, similar to that observed in MS patients (Sweet et al., 2006). Findings indicate that deficits in survivors of ALL are evident through both neurocognitive assessment and brain region activation during fMRI. Concurrent examination of testing and brain imaging enables the connection of behavioral observations with underlying neurological characteristics of deficits in survivors, and may help provide insight into mechanisms through which deficits appear.

## Abstract 5

### Language Development in Children Born Prematurely: Growth Curve Analyses Addressing Influential Factors

*Julie A. Slay, PhD, Iola S. Gwizdowski, MS, Research, Children's Health Council, Anne M. DeBattista, MSN, Cheryl Goldfarb-Greenwood, MSN, Pediatrics, LPCH at Stanford University, Lynne C. Huffman, MD, Heidi M. Feldman, MD, Pediatrics, Stanford University*

**Purpose:** Studies of serial language testing in children born prematurely have yielded mixed results; some reports suggest little change with increasing age, other reports suggest continued improvement. In this study, we examined language development of premature infants participating in a community-based collaborative that promotes early access to intervention services. **Methods:** 266 children born prematurely were followed prospectively for 4.5 years. All weighed  $< 2500$  grams at birth and had  $> 1$  risk factor for developmental problems. Four developmental assessments were conducted (i.e., late infancy, toddler, preschool, preK) and included collection of Vineland Communication Scale data at each assessment. Other relevant data included maternal education, child gender, child days in NICU, and early intervention (EI) service receipt. Growth curve analyses were conducted to determine how social, biological, and environmental (treatment) factors contribute to developmental trajectory of language. **Results:** Language performance declined over time, with some recovery seen at the preK assessment. This developmental trajectory was not influenced by child days in NICU, but was affected significantly by maternal education, child gender, and intervention service receipt. Less maternal education, male gender, and service receipt were associated with lower child Vineland Communication scores at each assessment. Growth curves demonstrate similar rates of change for subgroups (e.g., male/female, service/no service). **Conclusion:** Certain social, biological, and environmental factors affect the trajectory of language development in children born prematurely. Service receipt appears associated with poorer outcomes, reflecting service eligibility requirements. Children who receive services and those who do not receive services (possibly because of ineligibility) demonstrate similar rates of decline in language performance; this suggests children who do not receive services have unmet needs. Apparent language improvement after age 4 may reflect measurement that is more precise and/or real change in developmental trajectory.

## Abstract 6

### Discourse skills following early childhood traumatic brain injury

*Nicolay C. Walz, PhD, Behavioral Medicine, Shari L. Wade, PhD, Rehabilitation, Cincinnati Children's Hospital Medical Center, Keith O. Yeates, PhD, Psychology, Nationwide Children's Hospital, H. Gerry Taylor, PhD, Developmental and Behavioral Pediatrics, Case Western Reserve University, Terry Stancin, PhD, Pediatric Psychology, MetroHealth Medical Center*

**Purpose:** The purpose of this study was to examine emerging discourse skills following early childhood traumatic brain injury (TBI). A growing body of literature suggests that deficits in core neuropsychological abilities may impact emerging social-communicative competence following pediatric TBI. One of the hypothesized core neuropsychological skills is narrative discourse, defined as the ability to express and organize information from a narrative. **Methods:** For the current study, narrative discourse skills were

examined 18 months after injury in 75 children with a history of TBI and 84 children with a history of orthopedic injuries (OI), aged 3-6 years at the time of injury. As part of a larger neuropsychological assessment, children completed a discourse measure that required them to listen to a conceptually complex, abstract story involving perspective-taking and a lesson. Children were immediately asked to retell the story. They were then asked questions about the explicit and implicit content of the story and to rate statements from the story as important or unimportant to the main message or lesson. **Results:** Responses were reliably coded by 2 independent raters. The TBI group had significantly shorter retells with fewer independent clauses and less sentence complexity in comparison to the OI group. The TBI group also had retells with less information, less episodic structure, and less preservation of the central story meaning in comparison to the OI group. The TBI group was less able to correctly rate unimportant statements as such. **Conclusion:** Our findings suggest that children with TBI may have trouble remembering, extracting, and expressing meaning from spoken language. These discourse deficits may help explain some of the communication difficulties children with TBI have in social interactions, as well as their academic difficulties in school.

## **Abstract 7**

### **Do Children Have Written Language Disorder without Reading Disorder? Results from a Population-Based Birth Cohort Study**

*Slavica K. Katusic, MD, Health Sciences Research, Robert C. Colligan, PhD, Psychology, Amy L. Weaver, MS, Health Sciences Research, William J. Barbaresi, MD, Pediatrics and Adolescent Medicine, College of Medicine, Mayo Clinic*

**Purpose:** It is often assumed that Written Language Disorder (WLD) occurs almost exclusively in association with Reading Disorder (RD). This study was designed to identify and characterize all children with WLD who did not have comorbid RD in a well defined population-based birth cohort. **Methods:** Subjects included all children born 1976-1982 in Rochester, MN who remained in the community after age 5 (N=5718). Records from all public, private schools, all sources of medical care and private tutoring were reviewed in detail for every child in the birth cohort. All individually administered IQ and achievement tests, comorbidities (including RD) and Individualized Education Program (IEP) data were abstracted. Three formulas (regression-based discrepancy, non-regression-based discrepancy, low achievement) were used to identify all WLD and all RD cases. WLD subjects who did not have RD were designated as WLD only. Four specific writing difficulties (grammatical/punctuation errors, poor paragraph organization, multiple spelling errors, excessively poor handwriting) were determined by research criteria utilizing DSM-IV-TR descriptions of these four specific types of writing difficulty. **Results:** Among all WLD incidence cases (N=806) we identified 203 (25%) subjects with WLD only. Cumulative incidence rates of WLD only, by age 19, varied from 1.1% to 4.0% according to the formula used. Within each formula boys were more likely to be identified as WLD only than girls (RR=1.5 to 2.1). The majority (83%; N=169) of all WLD only subjects had various combinations of four specific types of writing difficulty. Among 203 WLD only subjects 57.1% (N=116) had any of IEP services and 12% (N=24) of WLD only subjects received speech/language services. **Conclusion:** This is the first study investigating the incidence and characteristics of WLD only in a community-based birth cohort. It suggests that isolated WLD is not rare among school children and that is more common among boys than girls. These results provide research based information to ambulatory and school settings to promote increased effort to identify and provide timely intervention for boys and girls with WLD, even in the absence of RD.

## **Abstract 8**

### **Siblings and Mental Retardation: Relationships and Caretaking in Latino and nonLatino Families**

*Debra Lobato, PhD, Brown University, Barbara Kao, PhD, Pediatrics, Wendy Plante, PhD, Bradley Hasbro Children's Research Center, Warren Alpert Medical School at Brown University, Edicta Grullon, MA, Lydia Cheas, BA, Bradley Hasbro Children's Research Center, Rhode Island Hospital*

**Purpose:** The impact of a child's disability on siblings may vary across cultures. Individualistic cultures emphasize the autonomy of each sibling whereas familistic cultures socialize siblings toward interdependence. This study examined sibling relationships and caretaking among Latino and nonLatino families of a child with mental retardation (MR) and Latino and nonLatino control families. **Methods:** 22

Latino MR and 16 Latino control families, and 22 nonLatino Caucasian MR and 16 nonLatino Caucasian control families participated. Siblings (45% male) were 8-15 years old (mean =11.7 yrs) and 76% were older than the child with MR/control. The children with MR/control (65% male) were 3-18 years old (mean = 9 yrs). Sibling relationship quality, sibling's family and caretaking obligations, and parent-reported social support were assessed with standardized measures. **Results:** Siblings' family obligations negatively correlated with the age of the child with MR/control ( $r = -0.24, p < .05$ ). Latino MR siblings reported higher levels of sibling kindness ( $F(3,72) = 4.71, p < .01$ ) and involvement ( $F(3,72) = 3.44, p < .05$ ), as well as the highest levels of family ( $F(3,74) = 4.07, p < .01$ ) and sibling ( $F(3,71) = 4.49, p < .01$ ) obligations. NonLatino MR siblings reported the lowest levels of family and sibling obligations. Within the nonLatino MR group, greater parent reliance on relatives for help was associated with siblings' report of less involvement ( $r = -0.44, p < .05$ ) and more avoidance ( $r = -0.43, p < .05$ ) of the child with MR. **Conclusion:** This study provides preliminary evidence of cultural variations in the experiences of siblings of children with MR. Latino siblings reported higher levels of positive relationship qualities and caretaking responsibilities. NonLatino Caucasian siblings reported lower levels of sibling obligations and had less involvement with the child with MR when parents relied more on relatives for help. Cultural differences in caretaking expectations may be related to differences in the quality of sibling interactions. The increasing numbers of Latino families in the US warrant more culturally sensitive understanding of family adaptation.

## Abstract 9

### Parental Depression: Parenting, Child Development, and Consequences for the Use of Parent-Report Screening tools.

Angela LaRosa, MD, Michelle M. Macias, MD, Pediatrics, Medical University of South Carolina, Frances P. Glascoe, PhD, Pediatrics, Vanderbilt University

**Purpose:** To define differences between depressed and nondepressed parents in terms of perceptions of children's developmental and health status, parenting behaviors, and child outcomes. **Methods:** Subjects were 382 children between birth and two years of age whose parents were representative of US demographics. Sites (across 17 US States) included pediatric practices, public health departments, day care centers, and early intervention programs. Measures included: The Brigance Infant Toddler Screen, the Brigance Parent-Child Interactions Scale, a rating scale of child development and health, and a scale psychosocial risk including caretaker depression. **Results:** 15% of parents had elevated scores on the depression screen. Depressed parents were more likely to perceive their children as having health problems ( $OR = 2.5, 95\%CI = 1.72 - 3.64$ ) and were 2.2 times as likely to rate their children as below average or average ( $95\%CI = 1.51 - 3.46$ ). Their children were 1.7 times more likely to perform below cutoffs on the examiner-administered version of the Brigance Screens ( $95\%CI = 1.1 - 2.5$ ). For children scoring in the above-average range, those with depressed parents were less likely to be rated as above-average ( $\chi^2 = 6.107, p < .05$ ). Depressed parents were also less likely to read to their child ( $OR = 2.3, 95\%CI = 1.72 - 3.06$ ), talk about objects their child notices ( $OR = 2.5, 95\%CI = 1.92 - 3.39$ ), or to report helping their child learn new things ( $OR = 1.9, 95\%CI = 1.8 - 2.68$ ). **Conclusion:** In this sample of very young children, parental depression had a significant and adverse association with optimal parenting behaviors, parental perspective on health and development, and on child outcome. Although depressed parents were accurate in their appraisals of development that was average or below average, they had difficulty accurately rating children with above average development. Interventions in parental depression should address parenting behaviors and perceptions of child development and health.

## Abstract 10

### Early Potential Markers of Autism Spectrum Disorders in NICU Infants

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**Purpose:** NICU infants may be at higher risk for Autism Spectrum Disorders (ASD). Our studies follow development of regulatory influences on attention, motor, and communication from birth in NICU infants. This report compares archival prospective neonatal and infant data to identify marker behaviors prior to diagnoses. **Methods:** NICU infants later diagnosed with ASD ( $n=36$ ; 17 by co-author ILC, 19 by other sources/highly suspected) were compared to controls (NO-ASD;  $n=153$ ; matched on gender (>80%

male), GA (23-41 wks) and birth year(1994-2006)) on a range of behaviors from birth to 19 months. **Results:** ASD had higher-educated mothers, and no differences on intrauterine growth or Apgar Scores. In analyses controlling CNS severity and maternal education, ASD exhibited behavioral deficits from the newborn period. Their neonatal neurobehavior showed more visual asymmetry, hypotonicity in arms, tone differences in arms vs legs, and less decrease in # abnormalities at 1 month ( $p < .01$ ). They had poorer arousal modulation of visual attention out to 4 months ( $p < .001$ ), with more attention to faster stimuli (like younger or cocaine-exposed infants). Item analyses of BSID-II showed shifts in patterns of differences across age. At 7 months, deficits were in attention and fine and gross motor behavior. By 16 months, deficits shifted to cognition and communication (as well as attention and fine and but not gross motor). Thus, behavior from birth showed slower resolution of neonatal problems (visual asymmetry and tone), atypical preference for increased visual stimulation, and decline in both MDI and PDI BSID scores as early as 7 months. **Conclusion:** As early as newborns, infants later diagnosed with ASD may form a distinct sub-population within NICU babies, with atypical visual, motor, and regulatory development compared to other high-risk infants. Decline on standardized testing may be expected as early as 7 months, which typically only occurs in infants with the most severe CNS pathology. These effects may be potential pre-diagnosis markers or precursors. Studies of NICU infants might provide insight into increasing incidence of ASD, verification of reports implicating perinatal/neonatal factors, and opportunity to observe and identify potential markers and precursors at much younger ages than symptoms are seen or ASD diagnosed.

## Abstract 11

### Joint Effects of Tobacco and Lead Exposure on Susceptibility to ADHD in U.S. Children

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**Purpose:** To determine the independent and joint associations of prenatal tobacco and childhood lead exposure with ADHD in a national sample of U.S. children, and whether tobacco and lead effects are modified by child sex. **Methods:** Data is from NHANES 2001-2004, a cross-sectional, nationally representative sample of the U.S. population, with a focus on children 8-15 years old ( $N=2,588$ ). Prenatal tobacco exposure was measured by report of maternal cigarette use during pregnancy. Lead exposure was assessed using current blood lead level. The Diagnostic Interview Schedule for Children (Parent Module) was used to ascertain the presence of ADHD in the past year based on DSM-IV criteria. Analyses identified predictors of ADHD using multivariable logistic regression and adjusted for child age, race/ethnicity, income, birth weight, current tobacco exposure, and additional sociodemographic predictors. **Results:** 8.7% (95%CI 7.3-10.1) of children met DSM-IV criteria for ADHD. Prenatal tobacco exposure (AOR=2.4 [95%CI 1.5-3.7]) and higher current blood lead level (3rd vs 1st tercile AOR=2.3 [95%CI 1.5-3.8]) were independently associated with ADHD. Compared to children with neither exposure, those with both exposures (prenatal tobacco exposure and 3rd tercile lead levels) had a substantially increased risk (AOR=8.1 [95%CI 3.5-18.7]) of ADHD (tobacco-lead interaction term  $p < 0.001$ ). These joint effects appeared to be stronger for boys (AOR=11.5 [95%CI 4.5-29.7]) than girls (AOR=4.1 [95%CI 0.7-25.7]), but the three-way interaction between tobacco, lead, and sex was not significant. **Conclusion:** We conclude that prenatal tobacco and childhood lead exposure are risk factors for ADHD in U.S. children, especially for those sustaining both exposures. The observed toxicant effects do not appear to be sex-specific.

## Abstract 12

### Ostracism as a Factor in Child and Adolescent Adjustment

*Conway F. Saylor, PhD, Psychology, The Citadel, Kim A. Twyman, MD, Developmental and Behavioral Pediatrics, Medical University of South Carolina, Steve A. Nida, PhD, Psychology, The Citadel, Kipling D. Williams, PhD, Department of Psychological Sciences, Purdue University*

**Purpose:** The purpose of this study is to examine Ostracism, ignoring and excluding of a target individual, which has seldom been investigated as a clinical factor in child and adolescent adjustment. The growing literatures on bullying and social aggression underscore the importance of investigating

ostracism in pediatric populations. **Methods:** Participants in this IRB-approved study were 180 youth aged 8-17 (Mean age= 12.4; 54% male; 70% Caucasian) recruited from outpatient private and public primary care, developmental-behavioral pediatrics, and cystic fibrosis(CF)clinics. Youth self-report on Kovacs Childrens Depression Inventory (CDI), Reynolds Bully-Victimization Scale (BVS), and our pilot Ostracism Scale were examined relative to Parent report on Achenbach Child Behavior Checklists (CBCL) and medical records data on diagnosis, height, and weight. Williams (2001) proposes that ostracism acts to threaten 4 basic needs: the need to belong; the need for self-esteem ; the need for "meaningful existence"; and the need for control. The 15-item pilot Ostracism Scale included 3 items to assess level of threat to each of these 4 needs and added 3 items to quantify actual ostracism experiences. **Results:** Internalizing, Externalizing, and Total CBCL scores were all significantly correlated ( $r = .19-.30$ ,  $p < .02$  or better) with Ostracism on every factor except control and meaningful existence. There were significant correlations ( $r = .30-.53$ , all  $p < .001$ ) between CDI percentile, total ostracism score, and all of the ostracism factors. In Hierarchical multiple regression analysis with potential predictors of CDI depression including age, gender, BMI, BVS victimization score, and ostracism, total score on the Ostracism Scale emerged as the sole significant predictor, accounting for 31% of the variance (Beta = .43, SE= .06,  $p < .001$ ;  $R^2 = .31$ ). Patients with CF had highest ostracism scores, followed by patients with developmental/behavioral issues. **Conclusion:** Ostracism experiences should be further examined as a factor in child adjustment, especially depression.

### **Abstract 13**

#### **Social Deficits in Children with Bipolar Disorder: The Role of Face Emotion Misperception**

*Brendan A. Rich, PhD, Psychology, NIMH/Catholic University*

**Purpose:** Pediatric bipolar disorder (BD) is a highly debilitating childhood psychopathology, and one prominent impairment is social deficits. This study sought to elucidate the behavioral, cognitive, and neural mechanisms of social dysfunction in youths with BD by examining possible face emotion misperception. **Methods:** Our sample consisted of 55 youths (ages 7-18 years) with strictly defined DSM-IV BD defined by euphoric, episodic mania (14.9+2.0 years; 45% male; IQ=108.9+17.6) and 66 healthy controls (14.7+1.6 years; 45% male; IQ=109.8+8.2). Subjects completed a series of face processing tasks and a functional Magnetic Resonance Imaging (fMRI) scan to measure face emotion identification and associated neural function. Social function was measured using a battery of self- and parent-report rating scales. **Results:** Results found that BD youths misidentified face emotions, misperceived neutral faces as threatening, and required more intense displays of emotion even when they were able to correctly identify face emotions. fMRI data found that these face processing deficits in BD youths were associated with hyperactivation of key emotion-processing brain regions, including the amygdala and prefrontal cortex. Further, BD youths displayed deficient neural communication between brain regions responsible for processing emotional stimuli and those which regulate social cognition. Finally, the behavioral, cognitive, and neural deficits seen in BD youths when misperceiving face emotions were significantly correlated with prominent social deficits, including poor relationships with peers and family members. **Conclusion:** These results clarify the nature of face emotion misperception in BD youths and the brain perturbations which may cause such impairments. Further, this study establishes a relationship between face misidentification and social dysfunction. These results have important implications for understanding the mood and behavior dysregulation characteristic of pediatric BD, and for identifying effective psychosocial treatments. Further, these results may aid in addressing the controversy surrounding the diagnosis of BD in children and adolescents.

### **Abstract 14**

#### **The Lived Experience of Children & Adolescents with Special Needs**

*Susan Speraw, PhD, Nursing, University of Tennessee*

**Purpose:** Persons with disabilities are experts on their own life experience, yet they are rarely asked for their accounts of daily life. This phenomenological research sought to fill this gap, illuminating the lived experience of young people with disabilities or special needs, from their own perspective. **Methods:** Thirty individuals, age 7 through 29, with a broad range of disabilities were interviewed throughout the United States. Recruitment was through organizations that serve disabled individuals. Face-to-face

interviews began with the open-ended statement: The thing that I want to know is what its like to be you. Tell me what its like to be you. This qualitative approach reduced bias, allowing participants maximum freedom to discuss their experience of being in the world. Average taped interview length was one hour. Transcripts were analyzed with the aid of an interdisciplinary research group, and a thematic structure of the experience of being a person with a disability was derived. Member-checking verified the final interpretation. **Results:** Participants viewed themselves through a lens of normalcy, and perceived themselves as having typical feelings, desires for acceptance, and many positive attributes. All saw themselves as able, determined to succeed and overcome their struggles. Their lives were lived in this context of normalcy. Figural aspects of being in the world with a disability included relationships with peers and family, and issues of exploitation stemming from personal vulnerability and abuses of power. Recognition that they were different evolved over time, and awareness was often associated with feelings of isolation and diminished self-esteem. **Conclusion:** Findings have relevance to health professions as we examine what it means to be fully human, and the importance of supporting self care agency and dignity, even for those who are most challenged. The importance of presence and fostering genuine relationships with our clients is critical. Educational programs must prepare professionals to support quality of life and create a balance between agency and care for persons with special needs.

## Abstract 15

### Prevalence of Gastrointestinal Symptoms and Food Allergy in Preschool-aged Children with Autism Spectrum Disorders

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**Purpose:** To examine the frequency of parentally reported gastrointestinal symptoms and food allergies in children with ASD compared to children with developmental delay(DD) and typical development (TD).

**Methods:** Participants were enrolled in the CHARGE Study, a population-based case-control study of 2-5 year olds with ASD, other developmental delays and children from the general population. Included in this analysis were 354 children with ASD confirmed by ADOS and ADI-R, 101 children with confirmed DD and 222 typically developing children. Developmental and adaptive functioning were assessed by the Mullen Scales of Early Learning and the Vineland Adaptive Behavior Scales. Demographic and medical information was ascertained from California birth records, questionnaires, and clinic medical assessments. Parents completed the CHARGE GI History, which includes 10 Likert scale items. Logistic regression models adjusted for child's age, sex, and ethnicity were used to compare the frequencies of common GI symptoms and food allergy across groups. **Results:** 47% of parents of children with ASD reported GI symptoms as occurring frequently or always compared to 34% of parents of children with DD (odds ratio [OR] 1.75 [1.09, 2.83] and 10% of children with TD (OR 8.4 [5.2, 14.2]). Only sensitivity to food was reported more commonly in ASD than DD (OR 2.5; [1.4, 5.0]) and TD (OR 7.3; [4.0, 14.5]). Parents of children with ASD were more likely to report bloating (OR 4.9; [1.9, 16.6]), diarrhea (OR 8.8; [3.5, 29.8]) and constipation (OR 5.6; [2.5, 14.9]). than parents of TD children. These symptoms were not reported more frequently in ASD than DD. Children with ASD were 1.7 times more likely to have parentally reported food allergies compared to TD children (95% CI 1.1, 2.7), but not more likely to have food allergy than children with DD. **Conclusion:** Parents of children with ASD are more likely than parents of children with DD or TD to report increased frequency of at least one GI symptom, with food sensitivity being the most commonly reported symptom. These results are consistent with previously reported findings in smaller studies.

## Poster Session 1

### Abstract 16

#### An fMRI Study of Language Function in International Adoptees

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**Purpose:** We tested the hypothesis that early environmental deprivation coupled with exposure to Chinese (Ch) or Eastern European (EE) languages prior to the age of 9 months results in long term differences in the neural circuitry supporting monolingual English in adopted children later in their childhood. Functional MRI (fMRI) was used to test this hypothesis by comparison with matched control groups of American born (AB) English speakers. **Methods:** Girls now age 6-10 years adopted from China (n=9) and Eastern Europe (n=9) by English-speaking families were recruited through a pediatric hospital based adoption center after more than 6 months in an orphanage or other institution, a measure of early environmental deprivation. fMRI scans were performed on a 3Tesla MRI scanner using EPI BOLD sequence. A covert verb generation language task was used with a tone-cued bilateral finger tapping control task. The fMRI data were processed using in-house software developed in the IDL environment (ITT, Boulder, CO). Pre-processing steps included geometric distortion and motion correction. The data were then transformed into the Talairach space, allowing data from multiple subjects to be combined into composite activation maps computed using a General Linear Model with random effects and correction for multiple comparisons. **Results:** Contrasts between the groups a) AB Vs EE, b) AB Vs Ch, and c) Ch Vs EE were obtained from the composite activation maps generated for each group. EE born adoptees appear to have atypical lateralization in Broca's area compared with the AB group. Ch born adoptees demonstrated atypical lateralization of semantic language function with an apparent shift of Wernicke's area toward the right hemisphere. **Conclusion:** Findings suggests that institutionalization during infancy with minimal exposure to another language has a long-term impact on the neural circuitry of language supporting English language development with subtle differences between the Ch and EE groups highlighting a possible influence of tonal Asian language exposure.

## **Abstract 17**

### **Externalizing Behavior and Substance Use among Survivors of Childhood Cancer: The Predictive Role of Peer Relationships**

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**Purpose:** Examine associations between peer relationships and externalizing behaviors, including substance use, among survivors of childhood cancer and comparison peers during the transition to emerging adulthood **Methods:** Longitudinal evaluations were completed with 56 children with cancer and 60 classmates matched for age, gender, and race. Children were 8-15 years old at initial recruitment (M = 11.32) and 18-20 years old at follow-up (M = 18.6 years). Social behavior and peer acceptance were assessed in school at baseline. Survivors, peers, and parents reported on externalizing behaviors and substance use an average of 7.32 years later. Severity of initial treatment and late effects were rated by healthcare providers. **Results:** Survivors were similar to peers on externalizing behaviors at baseline and follow-up, as well as alcohol and tobacco use at follow-up. Survivors were less likely to have used marijuana, but no differences were found in use of other substances. Among survivors, older age at diagnosis was associated with increased alcohol, tobacco, and drug use, as well as participation in antisocial activities. Survivors who relapsed smoked cigarettes more often than those who did not. Higher Popularity/Leadership scores at baseline were associated with more alcohol and illegal drug use at follow-up. Higher Sensitive/Isolated scores were associated with less substance use across drug categories. **Conclusion:** Participation in externalizing behaviors was similar for survivors of childhood cancer and peers. Survivors who were older at diagnosis or relapsed were at greater risk for substance use and may be appropriate targets for intervention. Clinical efforts should focus on decreasing risk behaviors, as even normative experimentation may have profound health consequences (e.g., organ damage, future malignancies) for survivors.

## Abstract 18

### Optimism, Affective Functioning, and Quality of Life in Children About to Undergo Stem Cell Transplantation (SCT)

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**Purpose:** To examine correlates of optimism and pessimism in medically-challenged children and adolescents, including 1) demographic and medical variables and 2) child adjustment variables.

**Methods:** Children (N = 165, 58% male, 74% Caucasian) age 6-18 (M = 13.0 years, SD = 3.8) about to undergo SCT were recruited from 4 pediatric hospitals to evaluate a behavioral intervention to improve child and parent adjustment during hospitalization. At baseline, prior to randomization and myeloblastic preparative therapy, children completed the Youth Life Orientation Test to measure optimism and pessimism as well as measures of positive mood, emotional distress (depression, anxiety, post-traumatic stress [PTS] symptoms), and quality of life. Parents reported on their children's emotional distress and quality of life. **Results:** Levels of optimism and pessimism did not differ by child gender or age. Lower SES was associated with heightened optimism,  $r = .23$ ,  $p < .01$ , but was unrelated to pessimism. Optimism was positively and significantly correlated with child report of positive affect and child- and parent-report of quality of life ( $r = .20$  to  $.49$ ). Optimism was negatively and significantly correlated with symptoms of depression, anxiety, and PTS by self- and parent-report ( $r = .36$  to  $.48$ ). Pessimism correlated with these variables in the opposite direction. **Conclusion:** Children's optimism and pessimism demonstrated moderate correlations with multiple indicators of emotional, behavioral and physical functioning as reported by both children and their caregivers. Prior work on optimism has rarely included children. This work suggests that this dispositional characteristic of a child may influence adjustment during a time of medical distress, however further work is needed to determine what mechanisms, such as specific coping strategies, may be responsible for this association.

## Abstract 19

### An RCT of Videotaped Interactions During Pediatric Well-Child Care to Promote Child Development: Early Educational Outcomes

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**Purpose:** Primary care parenting interventions are an innovative, low cost, public health strategy for promoting school readiness in children at risk due to poverty. The Video Interaction Project (VIP) pairs families with a child development specialist who facilitates interactions through review of videotapes made of parent and child at each well child visit; parenting pamphlets and developmentally appropriate learning materials (toys and books) are also provided. We have previously documented effects on cognitive and language development at 21 and 33 mos. In this study, we sought to assess whether VIP has long-term effects on early educational outcomes. **Methods:** Consecutive Latino mother-infant dyads at risk for adverse developmental outcomes due to low maternal education (defined as not having completed high school) were enrolled in an urban public hospital nursery, and randomized to VIP or control (C). At ages 5 - 7 yrs, cognitive ability (WISC-IV) and achievement (Woodcock-Johnson III/Bateria III) were assessed in the child's dominant language; social competence/behavior was assessed by parent interview (CBCL). **Results:** 86/150 (57%) children enrolled at birth were assessed for at least one outcome (50 VIP, 36 C). VIP and C families were similar for maternal education (mean (sd) 6.8 (2.2) yrs), Spanish primary language (92%), birthplace outside US (93%), and child first born (29%). VIP was associated with a reduced rate of borderline IQ (VIP 19% vs. C 33%;  $p = .04$ ) and with enhanced Processing Speed ( $p = .04$ ). In addition, a trend was seen for increased early word reading ( $p = .09$ ). As in prior assessments, differences between VIP and C were greater in children of mothers with 7-11th grade education for IQ (100.2 (11.8) vs. 86.3 (8.7);  $p = .06$ ) and behavior (42.6 (10.5) vs. 50.8 (13.4);  $p = .05$ ). Effect sizes (Cohen's  $d$ ) were  $.3 - .4$  for the sample as a whole and  $.7 - .9$  for children of mothers with 7-11th grade education. **Conclusion:** VIP, a primary care based intervention during pediatric primary care

visits from ages 0 to 3 yrs, resulted in improved early educational outcomes at ages 5 to 7 yrs in at-risk children.

## **Abstract 20**

### **A Randomized, Double-blind, Crossover Laboratory Classroom Study of Once Daily Dexmethylphenidate in Children with ADHD: Rapid Onset of Action**

*Frank Lopez, MD, Psychiatry, Children's Developmental Center, Rafael Muniz, MD, Mary Borrello, RN, Clinical Development/Medical Affairs Neuroscience, Kevin McCague, MA, Biostatistics, Novartis Pharmaceuticals Corporation*

**Purpose:** To confirm the efficacy of dexmethylphenidate extended-release (d-MPH-ER) vs placebo (PBO) as measured by change from predose at 0.5 hours postdose in Swanson, Kotkin, Agler, M-Flynn, and Pelham (SKAMP) Combined score in children with ADHD. **Methods:** Children (6-12 years) with ADHD were randomized to receive d-MPH-ER 20 mg/day or PBO, sequentially, for 7 days each with the final dose administered in a laboratory classroom setting on Day 7. The primary efficacy comparison was change from predose at 0.5 hours in SKAMP-Combined score, with additional assessments at 1, 2, 4, 6, and 8 hours postdose. Secondary efficacy measures included SKAMP- Attention and -Depotment and Math Test-Attempted and -Correct scores, and behaviors across treatment periods as measured by the Conners' ADHD/DSM-IV Scale for Parents (CADS-P). In an exploratory analysis, a daily diary card was completed by parents on the subject's in-home behavior before school and parental reaction was collected. Safety was assessed by adverse events (AEs), monitoring of vital signs, and ECGs. **Results:** A total of 86 patients (53 boys, 33 girls) with a mean age of 9.5 years were randomized and included in the intent-to-treat analysis. Significant improvements in SKAMP-Combined scores were noted at 0.5 hours and all timepoints postdose for d-MPH-ER vs PBO ( $p<0.001$ ). d-MPH-ER also demonstrated significantly better improvement than PBO from 0.5 hours postdose through the 8-hour laboratory classroom day on SKAMP-Attention and -Depotment, and Math Test-Attempted and -Correct scores. Change from baseline in CADS-P scores were significantly greater with d-MPH-ER vs PBO (-16.382 vs -4.622;  $p<0.001$ ). Responses to all diary questions indicated significant improvement with d-MPH-ER vs PBO ( $p<0.001$ ). Overall AE rates were 17.4% for d-MPH-ER and 22.1% for PBO; the most common AEs were upper abdominal pain (d-MPH-ER 3.5%; PBO 4.7%), headache (d-MPH-ER 3.5%; PBO 2.3%), and increased appetite (d-MPH-ER 0%; PBO 3.5%). **Conclusion:** d-MPH-ER was well tolerated. Once daily d-MPH-ER 20 mg provided significant improvement at 0.5 hours post-dose in attention, depotment, and academic performance which was sustained for 8 hours postdose in children with ADHD.

## **Abstract 21**

### **First Concerns About Autism: Parent Retrospective Report Versus the Pediatric Record**

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**Purpose:** Understanding the reliability of parents' recall of the age and type of first concerns they had for their ASD child compared to the age and type of concerns noted by their primary care physician (PCP) in the pediatric medical record is important for research and clinical purposes. **Methods:** Participants were parent/s of 94 children ranging in age from 1 year, 3 months to 12 years, 8 months. Average age of children was 4 years, 7 months. Males comprised 85% ( $n=80$ ) of the sample. All children received an Autism Spectrum Disorder (ASD) research diagnosis. The Autism Diagnostic Interview-Revised and the Toddler version were used as part of the screening evaluation. First concerns were coded according to the Toddler version. Pediatric medical records were available for 22 participants with the remainder forthcoming. **Results:** Mean age of recognition (AOR) of first concern was 16.9 months ( $SD=7.4$ ,  $n=94$ ). Preliminary data ( $n=22$ ) indicates parents' report of AOR of first concern ( $M=16.1$ ) did not differ significantly from that noted in the pediatric record ( $M=14.1$ ;  $t(21) = .89$ ,  $p>.05$ ). Speech delay/deviance was reported with the highest frequency by parents (62.8%,  $n=94$ ) and the pediatric record (63.6%,  $n=22$ ). The second highest frequencies were reported by parents as social interaction (45.7%,  $n=94$ ) and

by the pediatric record as medical problems such as seizures and delays in milestones other than language (36.4%, n=22). **Conclusion:** There is consistency between retrospective report of AOR and PCP records. Parents and PCPs label concerns beyond speech delay in different ways, with parents reporting concern about their child's social interactions and PCPs documenting concern regarding medical problems with the second highest frequencies. This difference may reflect a difference in definition, such that PCPs may label concerns about social interactions as a delay in milestones. The average age of first concern reported by parents and noted in the pediatric record was 14-16 months. These findings support the importance of early screening for ASDs and the timely referral for diagnostic evaluation and services when concerns are noted.

## **Abstract 22**

### **Intrauterine Growth Restriction and Future Social-Emotional Problems**

*Caroline J. Hill, MD, Angela LaRosa, MD, Michelle M. Macias, MD, Developmental Behavioral Pediatrics, Medical University of South Carolina, Amy Ruddy, BS, Lakshmi Katikaneni, MD, Neonatology, Medical University of South Carolina*

**Purpose:** To determine whether intrauterine growth restriction (IUGR) and subsequent poor growth are risk factors for social and emotional problems (SEP) before age 3 years compared with other high risk children followed at a NICU Developmental Follow-up Clinic. **Methods:** A retrospective chart review was completed on 250 children evaluated at the NICU Developmental Follow-up Clinic at the Medical University of South Carolina. The population included infants with birth weight <1500 grams, mechanical ventilation >10 days, small for gestational age (SGA) and/or IUGR, prenatal drug exposure, Apgar score <3 at 5 minutes and perinatal neurological morbidity (ie. intraventricular hemorrhage grades 3 and 4, periventricular leukomalacia etc.). The mean chronological age was 15.6 months and the mean gestational age was 31 weeks. At the visit caretakers completed the Ages and Stages: Social Emotional questionnaire and each child was designated at risk or age appropriate for SEP based on established cut-off scores. Height, weight, and head circumference were measured. Developmental status was determined by the Capute Scales and modified Peabody Gross Motor Test. Delay was defined as a developmental quotient of <80, with age adjusted for prematurity until 24 months of age. A sample size calculation was performed in order to have 80% power. **Results:** 22% of all the children in the study were identified as having SEP. Children with IUGR/SGA had a significantly higher risk of having SEP than the comparison group (OR 3.98, 95% CI [1.78, 8.87]). Of the patients with IUGR/SGA, those with poor growth (<5th percentile) at the follow-up visit were more likely to have SEP than those with normal growth (OR 2.0, 95% CI [0.46, 8.63]) but the difference was not statistically significant. Delayed scores on developmental testing were significantly associated with SEP, but there was no difference between the growth-restricted and comparison group. Birth weight, neurological morbidity, and drug exposure was not associated with SEP. **Conclusion:** Infants with IUGR/SGA have an increased risk for associated SEP. Subsequent poor growth in early childhood may be associated with an increased risk of SEP. Regular screening for early detection of SEP and subsequent intervention is essential in the prevention of more significant developmental and behavioral disorders. Research is needed to further investigate perinatal morbidity, nutrition, and the development of SEP.

## **Abstract 23**

### **Difficulties and Strengths of Growing up with Attention Deficit Hyperactivity Disorder (ADHD): A Qualitative Analysis of Adolescents' Perspectives**

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**Purpose:** To explore adolescents' perceptions of what was both difficult and good about having a diagnosis of childhood ADHD and to explore reasons adolescents report they have outgrown ADHD. **Methods:** Qualitative analysis of responses to open-ended questions on a cross-sectional survey of adolescents diagnosed with ADHD before age 10. Teens who reported outgrowing ADHD were asked, "How do you know that you have outgrown ADHD?" All participants were asked, "What was hard for you about having ADHD?" and "What was good about having ADHD?" Responses were coded by 2 study

team members and analyzed for emerging themes. **Results:** One hundred fifteen adolescents were enrolled in the study. The mean age was 15.5 +/- 1.7 years, 73% were male, and 63% were taking medication for ADHD. Only 16% of teens reported having outgrown their ADHD. Within this group, we identified 3 major reasons for perceiving ADHD had been outgrown, including: 1) being better able to concentrate, 2) being less hyperactive, and 3) having better self-control. The most common areas of difficulty reported by the adolescents included: 1) controlling behavior, 2) academics, and 3) interpersonal relationships. When adolescents were asked what was good about having ADHD, many responded, "nothing" or "I don't know". However, common strengths reported by adolescents included: 1) physical activity/ athletics 2) personality and character, 3) receiving extra support services, and 4) creativity. **Conclusion:** Children growing up with ADHD face many challenges, however, adolescents with this diagnosis report areas of strength and resilience that have helped them to be successful. A better understanding of adolescents' perceptions of growing up with ADHD can lead to more effective treatment strategies for this population.

## Abstract 24

### Language Outcomes in Children with Cochlear Implants and Additional Disabilities

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**Purpose:** Children receiving cochlear implants (CI) with additional disabilities (AD) have largely been excluded from studies on outcomes of CI recipients. The literature reports case series on children with AD, but evidence regarding the effect of CIs on language outcomes has been lacking. The purpose of this study was to determine if children with CIs and an additional disability have improved language skills following cochlear implantation. **Methods:** Children who received a CI <36 months of age with a known developmental delay prior to implantation were enrolled for a one-time language evaluation. Pre-CI language quotients (LQ) were compared to language test results at the time of the study using Signed Rank test. A comparison of language abilities to pre-CI developmental quotients (DQ) was also performed to determine if children were moving toward their cognitive potential regarding language. **Results:** 16 children with a variety of additional disabilities completed post-CI language evaluations. A third of the children had only one developmental concern, 1/3 had 2 ADs and 1/3 had 3 ADs. The median (range) post-CI expressive and receptive LQs were 32 (11-119) and 35.5 (7-116) respectively. Children had significant increases in median expressive and receptive LQ post implant (11.8 points,  $p=0.03$ ; 9.8 points,  $p=0.004$ ). Although the DQs were highly correlated with the LQs of children in the study ( $\rho=0.83$ ,  $p<0.001$ ), the LQs were significantly lower than the DQs (median 22 point difference for expressive and 15 points for receptive  $p<0.01$ ). Among children using sign language supports, almost all (6/7) had improved comprehension and expressive communication when using sign support compared to presenting the test questions in an auditory/oral format only. **Conclusion:** Although the majority of children made some measureable language progress over time, many still had a disproportionate language delay as compared to their cognitive potential.

## Abstract 25

### Vocabulary production in monolingual and bilingual children in a high-risk infant follow-up program

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**Purpose:** Bilingualism is thought to be advantageous for language and cognition in typically developing children. Few studies have investigated the effects of bilingualism on language development in children at risk for or with developmental delays. We tested whether vocabulary production of at-risk infants and toddlers differed depending on monolingual (M) vs bilingual (B) exposure. **Methods:** Participants (N=19, M=7, B=12) were at risk for language difficulties due to preterm birth or perinatal complications. Bilingual families spoke European (N=6), South Asian (N=4), and East Asian languages (N=2). Uncorrected ages ranged from 12-36 mths (M mean: 20.6, B mean: 23.0). Gestational age ranged from 26-40 wks (M mean: 32.3, B mean: 33.4). 50% of monolinguals and 57% of bilinguals were male. Scores from the MacArthur-Bates Communicative Development Inventories (CDI) served as dependent variables. Actions

and Gestures from the CDI:Words and Gestures measured nonverbal communication. Vocabulary Production from the CDI:Words and Sentences measured expressive vocabulary. **Results:** Actions and Gestures scores ranged from 5-99 percentile (overall mean: 66.2; M mean: 54, B mean: 74,  $p=n.s.$ ): Total vocabulary scores (English plus Non-English) ranged from 5-70 percentile (overall mean: 16.4; M mean: 12.1, B mean: 19.0,  $p=n.s.$ ). ANCOVA revealed no difference in scores for non-verbal communication, total vocabulary or English vocabulary in the monolingual vs bilingual groups, after controlling for age. A stepwise linear regression revealed that age, and not gender or monolingual vs bilingual exposure predicted differences in total vocabulary production raw scores ( $p=0.007$ ). **Conclusion:** Mean percentile scores for vocabulary were low in this high risk sample. Monolingual vs bilingual exposure was not associated with total or English vocabulary size. These preliminary findings suggest that bilingual exposure in linguistically at-risk children may not negatively influence expressive vocabulary development. Such findings have relevance for bilingual families of at-risk children and the clinicians who advise them about how to facilitate language development.

## **Abstract 26**

### **On the Web: Comparing Normative Questionnaire Data Gathered on Children via the Internet with Traditional Pencil/Paper Completion**

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**Purpose:** Normative data for a screening tool, the Ages and Stages Questionnaires (ASQ), was collected via conventional pencil and paper completion as well as electronically, on the Internet. Parents of young children from 2 months to 5½ years completed developmental questionnaires on their children. **Methods:** Approximately 2000 questionnaires were completed across 19 age intervals on the Internet; 3200 pencil and paper questionnaires were also completed by parents. To advertise the data collection web site, announcements were posted on parenting bulletin boards such as [www.babycenter.com](http://www.babycenter.com) and [craigslist.com](http://craigslist.com). Approximately 200 parents per month responded to electronic ads and parenting web sites announcements. Pencil and paper tests were collected through community-based early childhood programs such as Head Start, Healthy Start, and childcare programs. Item response theory (IRT) modeling, including differential item functioning (DIF) analyses were conducted. **Results:** Out of 570 items, statistical findings indicated 60 ASQ items (10.5%) exhibited significant differential functioning comparing web-based (focal group) and paper-pencil (referent group). Most DIF was found in the 4 month ASQ interval. Overall, DIF items within each domain were not all positive or negative  $t$ -values. **Conclusion:** Electronic data collection strategies appear to be promising for data collection on normative assessments. DIF analyses for the ASQ suggest that there are some differences between paper and electronic completion of questionnaires; however, these differences were minimal and there are strategies to minimize differences.

## **Abstract 27**

### **Early Head Circumference Measurements in Children with Autism Spectrum Disorders**

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**Purpose:** Macrocephaly has been documented in approximately 20% of children with Autism Spectrum Disorders (ASD), with accelerated growth trajectories found in a subgroup of these children in the first 2 years of life. We attempted to replicate these findings in a large, population-based case-control study (CHARGE: Childhood Autism Risks from Genetics and the Environment) which included typically developing control children. **Methods:** Occipito-frontal circumference (OFC) at birth was obtained from general pediatric medical records. Physicians performed physical examination of study participants ages 2-5 years at the study clinic visit and anthropometric measurements were taken. OFC was compared to CDC and NHANES III reference data, with macrocephaly defined as  $> 2$  SD above the mean. ASD was confirmed with standardized measures, including the Autism Diagnostic Observation Schedule and Autism Diagnostic Interview-Revised. Typically developing children of the same age from the general

population were included, and all children were evaluated with the Mullen Scales of Early Learning and Vineland Adaptive Behavior Scales. **Results:** OFC measurements from birth and clinic visit were available for 117 patients with ASD (mean age: 41 months) and 49 typically developing control children (mean age: 38 months). Mean OFC at birth (ASD: 34.9 cm, typical: 35.3 cm,  $p=0.33$ ) and OFC z-score at clinic visit (ASD: 0.27, typical: 0.3,  $p=0.8$ ) were not significantly different. At clinic visit, 3.4% of the ASD group was macrocephalic compared to 2% of the control group (n.s.). OFC did not differ between groups after accounting for sex, age, and weight based on a linear regression model (birth:  $p=0.25$ ; clinic visit:  $p=0.65$ ). **Conclusion:** Children with ASD did not differ in OFC measurements, either at birth, or at clinic visit at 2-4 years of age, contrary to prior studies. Additional OFC measurements from medical records will be abstracted over multiple time points to develop head growth trajectories over the first few years of life to determine if there may be accelerated head growth without frank macrocephaly.

## Abstract 28

### Self-Esteem in a Population of Hispanic Obese Children and Adolescents

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**Purpose:** Self-esteem in overweight pediatric populations has been conducted in predominantly Caucasian populations. This study examines the relationship of self-esteem in a mostly Hispanic population of obese children. Self-concept was examined pre-and post- intervention via self-report in children taking part in a 12-week outpatient obesity program. **Methods:** Archival data was utilized from a multi-disciplinary pediatric obesity clinic. The Piers-Harris Self Concept Scale, Second Edition (PH2) was used to measure self-concept in children ages 7-18. On all scales higher scores indicate favorable self-concept. **Results:** 216 obese children participated. 50.9% were female, and 62.8% were Hispanic, 24.8% White, 9.7% Black, 2.8% other ethnic origins. The PH2 was administered to participants pre and post participation in the program. While all the mean scores fell in the average range on both the pre- and post-administration, the participants yielded higher mean scores on the post-administered scale. A t-test was conducted on participants who completed both the intake and exit Piers-Harris 2 ( $n=50$ , due to attrition). Significant differences were found on all the subscales and total score, at intake:  $t(49) = 44.15, 38.63, 30.83, 34.72, 35.63, 31.10, 34.06, p<.001$ ; at exit:  $t(49) = 40.46, 39.95, 34.61, 38.94, 39.18, 38.89, 37.29, p<.001$ . **Conclusion:** These data demonstrate significant improvements in the self-concept of obese children after the intervention. The children feel more happy and satisfied with their life and have a better evaluation of their own social functioning, including their perceived popularity, ability to make friends, and inclusion in recreational activities. They also endorse more positive mood states and are less nervous and fearful. Importantly, these findings reflect self-report from a predominantly Hispanic population. There are clear clinical implications in employing a multi-dimensional intervention approach in the treatment of obese children.

## Abstract 30

### Children of Mothers with Breast Cancer: The Association of Emotional Adjustment with Parental Distress and Family Relations

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**Purpose:** Breast cancer (BC) affects 1 in 8 women during their lifetime and 35% of women are diagnosed at an age when they may have school aged children living in their home. This study evaluated the emotional and behavioral functioning of children affected by BC and the association of child adjustment with multiple indicators of parental distress, marital and parent-child interactions. **Methods:** Evaluations were done with 40 families of women with BC who had at least one child age 8-16 years. Comparison families ( $N=40$ ) were recruited by identifying classmates matched for age, race, and gender. Fathers ( $N=58$ ) also participated. Children completed the Children's Depression Inventory and the Child Report of Parent Behavior Inventory (CRPBI). Parents completed the CRPBI, Dyadic Adjustment Scale, Symptom

Checklist 90-Revised, and Child Behavior Checklist (CBCL). **Results:** Mothers with BC and their spouses or partners reported higher levels of distress than parents in comparison families. However, no group differences were found in child functioning or family relationship variables. Despite evidence that parental distress was associated with child internalizing and externalizing behavior, little evidence was found of group differences in the strengths of these correlations. In contrast, warmth and support by both mothers and fathers were more strongly associated with internalizing behavior in families affected by breast cancer. Child self-report of depressive symptoms was not associated with any family variables in either sample. **Conclusion:** Children of mothers with BC appear to be resilient and maintain average levels of emotional and behavioral adjustment. Children may benefit when parents experience less psychological distress, and higher levels of parental warmth and support may be particularly helpful to children experiencing the strain of parental cancer.

### **Abstract 31**

#### **Adolescent Attention-Deficit/Hyperactivity Disorder, Combined Type and symptom severity: A comparison of self-and peer-reports**

*Rich C. Gilman, PhD, Psychology and Special Education, David J. Schonfeld, MD, Division of Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center*

**Purpose:** This study examined how youth reporting the most severe symptoms related to Attention Deficit Hyperactivity Disorder, Combined Type (ADHD-CT) differed from individuals who report relatively fewer, but still problematic symptoms. This study focused on older (i.e., high school) youth, to clarify the relationship between ADHD-CT and specific psychological, psychosocial, and educational indicators at this age level. Finally, almost all studies use adult-reports (i.e., teachers/parents) to compare against self-reports. This study incorporated peer-reports to investigate perceptions held towards youth experiencing different levels of ADHD-CT symptoms. **Methods:** Participants were 1,000 adolescents who were enrolled in four high schools in one Southern state. Adolescents completed the Behavioral Assessment System for Children-2nd Edition, a standardized multidimensional behavior rating scale. The Hyperactivity and Inattention scale items were used to classify youth into Clinically Significant, At-Risk, and Average Functioning groups. Dependent variables included self-reported educational (e.g., perceived school experiences), interpersonal (e.g., social stress), and intrapersonal (e.g., depression, anxiety) indicators. Peers rated each other on measures of popularity, likeability, and specific classroom and interpersonal behaviors. **Results:** Results found a significant and positive relationship between level of severity and self-reported maladaptive outcomes, and a significant and negative relationship with self-reported adaptive outcomes. Differential relationships were also found on the peer-reports. Mediation analyses revealed specific factors (e.g., structured home environments, positive peer interactions) that appeared to protect against maladaptive outcomes, regardless of group placement. **Conclusion:** Although a variety of negative outcomes correspond to higher levels of symptom severity, there are a number of factors that appear to protect against the more harmful effects of ADHD-CT. Suggestions to promote these factors will conclude the presentation.

### **Abstract 32**

#### **Perceived Heroism of Parents Predicts Psychosocial Outcomes and Appraisal of Heroic Acts**

*Conway Saylor, PhD, Psychology, The Citadel, Kim Twyman, MD, Pediatrics, Medical University of South Carolina, Lloyd Taylor, PhD, Psychology, The Citadel, Eve Spratt, MD, Psychiatry, Michelle Macias, MD, Pediatrics, Medical University of South Carolina*

**Purpose:** Media representation of childhood heroes as celebrities and fantasy heroes are inconsistent with data suggesting that many name parents and others close to them as hero(ine)s. This study compares psychosocial outcomes and appraisal of heroic acts of children who name parents as hero(ine)s versus those who do not. **Methods:** The 171 participants in this IRB-approved study who named any hero(ine) on interview were part of a sample of 180 youth aged 8-17 ( Mean age= 12.4; 54% male; 70% Caucasian) recruited from outpatient private and public primary care, developmental-behavioral pediatrics, and cystic fibrosis (CF) clinics. Youth self-report on KovacsChildrens Depression Inventory (CDI) ,parent report on Achenbachs Child Behavior Checklists (CBCL), and youth appraisal of Heroic Acts on Saylor's Heroic Acts for Children (HAC) were compared for youth naming a parent as hero

versus not. **Results:** Compared with youth not naming a parent as hero (n=101), youth naming parents as heroes (n=70) were significantly lower on both internalizing and externalizing subscales of parent CBCL ( $p < .001$ ) as well as on all CBCL subscales except thought problems and somatic complaints. They did not differ in self-reported depression on CDI. Those with parental hero(ine)s were also more likely to rate caring for ones family and community outreach as more heroic on HAC. Chi Square analyses revealed that students in both Resource placement and Honors classes were more likely than their typical peers to name parents as heroes. No relationship was detected between having parental hero(ine)s and child grade or age, family income, or parent marital status. Parents were named as hero(ine)s most often by youth with Cystic Fibrosis (92%), followed by no diagnosis (67%) but least often in youth with ADHD (34%). **Conclusion:** While preliminary, these findings underscore the importance of examining heroism concepts with pediatric populations with an emphasis on strengthening the role and importance of parents.

### **Abstract 33**

#### **Parental Concerns in the Initial Weeks after International Adoption**

*Shari L. Wade, PhD, Marina Bischoff, Marilyn Rice, Mary A. Staat, MD, Pediatrics, Cincinnati Children's Hospital Medical Center*

**Purpose:** To identify parental concerns shortly after international adoption and parent and child factors that were associated with elevated concern. **Methods:** 320 parents who had adopted a child between the ages of 3 months and 12 years within the past two months provided informed consent. Parents completed the Vineland Adaptive Behavior Scales (VABS), Adoption Concerns Interview (ACI), the Center for Epidemiology Depression Scale (CESD), and the conflict, cohesion, and expressiveness subscales from the Family Environment Scale (FES). **Results:** Ninety-three percent of participants completed the ACI; whereas 66% (n = 210) completed the self-report measures. VABS composite indicated mild delays (M = 82.78; SD = 15.26). 11.4% of parents reported clinically significant depressive symptoms. On the ACI, parents rated the child's behavior and health as the biggest sources of concern, with 74 and 71% of parents noting concerns in these areas, respectively. Stress regarding sibling's (66%) and spouse's reactions (57%), and the parent's own adjustment (66%) was also reported by the majority of participants. However, only 36% noted concerns about bonding. Overall stress levels on the ACI were related to the parent's level of depressive symptoms ( $r = .34$ ;  $p = .000$ ) and family cohesion and conflict ( $r = .21$ ,  $p = .003$ ). However, concerns were unrelated to the child's country of origin or level of adaptive functioning, number of days the child had been in the United States, or the number of other children in the home. **Conclusion:** These findings suggest that parents adopting children from abroad are most concerned about the child's health and behavior and relatively less concerned about whether the child will successfully bond with them. The parent's psychological status and family environment were more predictive of parental concerns than the child's adaptive functioning suggesting that it may be important to consider the broader social-environmental context to identify families at risk for experiencing greater stress following adoption.

### **Abstract 34**

#### **Delivering Parent Skills Coaching via the Web: A Pilot Study**

*Shari L. Wade, PhD, Karen Oberjohn, Abby Burkhardt, Pediatrics, Cincinnati Children's Hospital Medical Center, Ira Greenberg,, Interactive Media Studies/Art, Miami University*

**Purpose:** Training in positive parenting skills has been shown to reduce behavior problems in young children, with live coaching of the parent while interacting with the child constituting a critical component. In this pilot project, we sought to determine if positive parenting skills training, taught through live coaching, could be successfully adapted and implemented via the world wide web (WWW) for young children with traumatic brain injury (TBI) and their families. **Methods:** Six families of children between the ages of 3 and 8 who sustained a moderate to severe TBI in the past year participated. Each family received a computer, web camera, Bluetooth headset and high speed internet access. The intervention consisted of an initial face-to-face visit followed by nine web-based sessions providing training in parenting skills through didactic information, videos modeling the skills, and exercises reinforcing the concepts. After parents independently completed each web-based session, they met with a therapist via

videoconference to review the skills and practice them with the child while receiving live coaching through a Bluetooth ear piece. Outcomes included parent ratings of session content, changes in the frequency of target parent behaviors using the Dyadic Parent-Child Interaction Coding System, Third Edition (DPICS-III), and improvements on the Eyberg Child Behavior Inventory (ECBI). **Results:** Coaching via the WWW was successfully completed with all families. DPICS-III coding revealed an increase in parents' use of praise, reflection, and behavioral description coupled with a decrease in commands and negative comments across participants. Scores on the ECBI also decreased over time. **Conclusion:** Findings suggest that coaching positive parenting skills online is feasible, resulting in positive changes in both parent and child behaviors.

### **Abstract 35**

#### **Parent Readiness for Change and Perception of Child's Behavior in a Pediatric Obesity population: What makes parents more ready for change?**

*Aileen Arratoonian Vedda, BA, Dina Cuervo, MA, Psychology, Kiti Freier Randall, PhD, Psychology, Pediatrics & Public Health, Loma Linda University*

**Purpose:** Although empirical data is limited, parental involvement is noted to be essential for intervention in the epidemic of pediatric obesity. This study examined the correlates of Behavior Assessment System for Children Parent Ratings Scale (BASC-PRS) to Parent Readiness for Change (PRC) in a clinical sample of obese children and adolescents. **Methods:** Parents of forty-three children and adolescents (8-16; M=11) participated. PRC was assessed using the program's measure which was developed based on the University of Rhode Island Change Assessment scale. The stages of PRC (i.e. Precontemplation, Contemplation, Action and Maintenance) were correlated to BASC-PRS composite measures. **Results:** For children (8-11), there was a significant positive relationship between parental perception of internalizing problems and scores on the Precontemplation stage ( $r = .433, p < .05$ ). In addition, there was a significant negative relationship between internalizing problems and scores on the Action stage ( $r = -.449, p < .05$ ). For adolescents (12-18), there was a significant negative relationship between parent perception of adaptive skills and scores on the Action stage ( $r = -.753, p < .01$ ). A significant negative relationship was also observed between adaptive skills and the Maintenance and Action stage ( $r = -.590, p < .05$ ;  $r = -.753, p < .01$  respectively). In addition, there was a significant positive relationship between total PRC and externalizing problems ( $r = .615, p < .05$ ). **Conclusion:** Parents' perceptions of their child's psychosocial functioning were significantly associated with PRC. More specifically, parents' stage of readiness appears to be associated with internalizing behaviors and adaptive skills when comparing children and adolescents respectively. Further examination of these trends is needed to understand mechanisms of parental involvement and child behavior change in order to impact weight loss.

### **Abstract 36**

#### **Domains of Concern for Parents, Medical Professionals, and Youth with Cerebral Palsy**

*Jilda N. Vargus-Adams, MD MSc, Pediatrics/PM&R - Div of Pediatric Rehabilitation, Lauren E. Kennington, BS, Division of Pediatric Rehabilitation, Cincinnati Children's Hospital, Univ of Cincinnati*

**Purpose:** To describe the domains of concern for parents, medical professionals, and youth with cerebral palsy (CP) in terms of the International Classification of Functioning, Disability, and Health- Version for Children & Youth (ICF-CY). **Methods:** Qualitative research using the Delphi technique via an online or paper survey, analyzed using the International Classification of Functioning, Disability, and Health- Version for Children & Youth (ICF-CY). 17 youth ages 10-18 with CP and 19 parents of children with CP were recruited from the outpatient clinics of a tertiary care center. 39 medical professionals with expertise in CP were hand-selected to represent a broad range of backgrounds. All subjects were asked to respond to the open-ended query: 'What are the things you find most important to consider when you evaluate the effects of an intervention for yourself/your child/your patient with cerebral palsy?' Surveys were either mailed or conducted on-line. Responses were coded by two reviewers using the ICF-CY and discrepancies were resolved. **Results:** Responses were distributed with 36% in Body Functions and Structures, 45% in Activities and Participation, 10% in Environmental Factors, and 9% in non-ICF-CY concepts including quality of life. The most common responses overall were pain, motor function, mobility, community life, and public services which were endorsed by at least 25% of respondents. Medical

professionals identified more categories than parents or youth (6/respondent vs. 3/respondent) and were more likely to use general terms such as 'function', 'activity', 'participation', or 'quality of life'. Medical professionals listed pain, function, mobility, community life, and participation most often. Youth identified strength, gait pattern, hand/arm use, and use of assistive technologies as priorities whereas parents were concerned with motor function, communication, mobility, and public services. **Conclusion:** Although youth, parents and medical professionals generally agree on the relative importance of the major ICF-CY domains in evaluating the effects of CP interventions, the specific areas of concern demonstrate some differences. All surveyed groups indicate a desire to see changes in body functions and structures (pain, strength, movement), activities and participation (communication, walking, community life), and environment (public services).

## **Abstract 38**

### **Physician Comfort Level Providing Care to Young Adults with Developmental Disabilities**

*Thomas S. Webb, Internal Medicine, University of Cincinnati, James E. Keffer, Internal Medicine, Vanderbilt University, Michael S. Yi, Internal Medicine, University of Cincinnati*

**Purpose:** To determine the comfort level of physicians in each of 4 specialties (family medicine, internal medicine, medicine-pediatrics, and pediatrics) caring for transition-age young adults with developmental disabilities. **Methods:** A convenience sample of 2150 physicians practicing in Southwest Ohio were mailed a survey listing 20 different childhood-onset conditions, 9 associated with developmental disabilities, 9 non-developmental diagnoses, and 2 controls. Using a Likert scale (1=very uncomfortable to 5=very comfortable), physicians were asked to rate their comfort level providing care to a hypothetical patient age 15, 21, or 27 years old with each of the 20 diagnoses. We compared the proportions of responding physicians in each specialty who reported being somewhat or very comfortable providing care for each diagnosis. Other outcomes examined include physician demographics, patient age, and number of patients with the childhood condition seen in the last year. **Results:** 452 (21%) physicians responded to the survey; ranging from 14% of internists to 62% of med-peds physicians. Compared to pediatricians, internists were significantly less likely to report being comfortable with all 9 of the developmental diagnoses (OR 0.06 to 0.46,  $p<0.01$ ) and 3 of the 9 non-developmental diagnoses (OR 0.26 to 0.56,  $p<0.05$ ). Family medicine physicians were significantly less likely to report comfort for 7 developmental diagnoses (OR 0.18 to 0.50,  $p<0.05$ ) and 2 non-developmental diagnoses (OR 0.31 to 0.55,  $p<0.01$ ). Med-peds physicians were less comfortable than pediatricians in only one developmental condition and none of the non-developmental diagnoses. Adult-oriented physicians reported increasing comfort levels with all 9 developmental diagnoses when they had seen patients with the condition in their practice in the last year ( $p<0001$ ). **Conclusion:** Adult-oriented providers are less comfortable than pediatricians caring for young adults with developmental disabilities, but their comfort level significantly increases if they have seen patients with these diagnoses in the previous year.

## **Abstract 49**

### **Oral Feeding Difficulty at NICU Dismissal: A Marker of Later Disability in Preterms?**

*S Allen, MD, Developmental Pediatrics, University of Kansas Medical Center, Kansas City, Kansas, C Castor, RN, C Lambrecht, CPNP, Neonatology, University of Missouri-Kansas City, Kansas City, MO, H Kilbride, MD, Neonatology, University of Missouri - Kansas City, Kansas City, MO*

**Purpose:** This preliminary study investigates whether preterm infants with oral feeding difficulty at intensive care nursery dismissal (OFD) manifest developmental delay by early school age. **Methods:** OFD was retrospectively defined by use of feeding tube, and/or feeding more often than every 3 hours, and/or use of formula concentration exceeding 24 kcal/ounce at intensive care nursery (NICU) dismissal. Participants were chosen from a database of 328 infants, born at  $\leq 32$  weeks gestation who were dismissed from a level IIIc NICU between 2002 and 2004. 71 patients with OFD were identified (22% of database) and matched by birth weight (BW) and gestational age (GA) to 71 controls. These participants were contacted in follow-up; responders included subjects with ( $n=29$ ) and without ( $n=31$ ) OFD at age 43 to 81 months (mean 59.5). Families were interviewed by phone using the Vineland Adaptive Scales II plus a short questionnaire. Standard scores were calculated, and group comparisons were analyzed by chi-square and univariate analysis of variance with significance indicated by  $P<.05$ . **Results:** There were

no differences between OFD and control in BW ( $1044 \pm 379\text{g}$  vs  $1052 \pm 310\text{g}$ ), GA ( $28.1 \pm 2.4\text{wk}$  vs  $27.4 \pm 1.9\text{wk}$ ), grade III-IV intraventricular hemorrhage, retinopathy of prematurity requiring surgery, or supplemental oxygen at 36 weeks GA. OFD subjects were more likely receiving occupational therapy at early school age ( $p=.01$ ). However, there were no differences in Vineland domain scores of Communication ( $92 \pm 17$  vs  $93 \pm 12$ ), Daily Living ( $85 \pm 15$  vs  $89 \pm 15$ ), Social ( $81 \pm 10$  vs  $82 \pm 12$ ), Motor ( $85 \pm 16$  vs  $86 \pm 18$ ), or Composite ( $84 \pm 14$  vs  $85 \pm 13$ ) or any subdomains. Most OFD subjects (23/31) left NICU with feeding tube; these 23 children scored similarly to the other OFD subjects and to controls in all Vineland scores. By early school age, 5 OFD subjects still used feeding tube, and 2 were not using cup. **Conclusion:** OFD is prevalent in preterms at NICU dismissal. However, OFD subjects groups did not differ from controls in functional assessment scores by early school age. In this small sample, 20% of those discharged from the NICU with a gastrostomy tube still required device support for nutrition at school age.

## Poster Session 2

### Abstract 50

#### Ecological Measures of Executive Function and Discrimination of ADHD Subtypes

*Glen P. Aylward, PhD, ABPP, Pediatrics and Psychiatry, Southern Illinois University School of Medicine, Sandra Vicari, PhD, David Decker, MD, Psychiatry, SIU School of Medicine, Julia Ogg, PhD, Pediatrics, Southern Illinois University School of Medicine*

**Purpose:** 1). To evaluate how a caretaker-completed ecological measure of 8 EFs (Behavior Rating Inventory of Executive Function [BRIEF]) differs among a clinical sample of children referred because of school-related problems; 2) to determine if ADHD subtypes have different EF profiles **Methods:** Sample consists of 184 participants: 65% male, 94% white, M age=10.39 (range 5-18; SD=3.2), M grade=4.83 (K-12; 3.06), M FSIQ=92.8 (15.35). 18% did not have ADHD, 33% ADHD-C (includes 6 with H/I subtype), 36% ADHD-I, and 14% ADHD-NOS. The BRIEF was administered, consisting of 8 subscales: Inhibit, Shift, Emotional Control, Initiate, Working Memory, Plan/Organize, Organization of Materials, and Monitor. All scales have a M=50, SD=10 (t-scores). ADHD diagnoses were based on DSM-IV criteria. ANOVAS and discriminant analyses were employed. **Results:** Comorbidities were comparable across groups: adjustment disorders were less prevalent in the ADHD-C group (14% vs. 31-50%). The ADHD-C group scored higher on the Inhibit scale ( $p<.0001$ ); on the Emotional Control scale, those with ADHD-C were higher than the ADHD-I and NOS groups but not children without ADHD ( $p=.002$ ). The summary BRIEF group difference was significant ( $p<.0001$ ) with the ADHD-C group being higher. Working Memory was less problematic in the non-ADHD group ( $p=.01$ ). When a discriminant function was employed, 45% were correctly classified; many with NOS were classified as ADHD-I. Because the ADHD-I and NOS subgroups differed by <1.5 t-score points on all BRIEF subscales, the two subtypes were combined. Using 3 groupings (non-ADHD, ADHD-C and ADHD-I/NOS), correct classification improved to 54%. With comparison of 2 ADHD subtypes (C vs. I/NOS) 77% were correctly classified. Working memory was equally impaired in both groups ( $> 2.5$  SDs above average). **Conclusion:** There is much overlap in ADHD subgroups with regard to EFs loading on the Metacognition Index, with all groups demonstrating deficits. These problems in EF are non-specific with regard to ADHD subtypes. Most discriminating are the "hot" EFs of inhibition and emotional control, with clinical elevations being specific to the ADHD-C group, versus ADHD-I or NOS. ADHD-I and NOS subgroups are similar, differing with respect to age (10.45, 12.9 years), and both may include individuals with the sluggish cognitive tempo subtype.

### Abstract 51

#### Behavioral and Cognitive Executive Function Problems Have Different Profiles on Parent, Teacher, and Test Measures of ADHD

*Glen P. Aylward, PhD, ABPP, Pediatrics and Psychiatry, David Decker, MD, Psychiatry, Julia Ogg, PhD, Pediatrics, Sandra Vicari, PhD, Psychiatry, Southern Illinois University School of Medicine*

**Purpose:** To evaluate if children who scored in the clinical range on 4 EFs (BRIEF; 2 "hot" EFs [Inhibit, Emotional Control]; 2 "cool" EFs [Working Memory, Plan/Organize]) display different profiles on ADHD rating scales and other clinical measures. **Methods:** Sample consists of 184 participants, referred for

school problems: 65% male, 94% white, M age= 10.39 (5-18; SD=3.2), M grade=4.83 (K-12; 3.06), M FSIQ=92.8 (15.35). 18% did not have ADHD, 33% ADHD-C (included 6 with H/I subtype), 36% ADHD-I, and 14% ADHD-NOS. Using the WRAML/2, IQ, CPT, parent (PV) and teacher (TV) Vanderbilt scales, ACTeRS, and DSM-IV diagnosis, children scoring at a clinical cutoff of >1.5 SD above the mean (T-score >65) were compared to those <64. T-tests and X<sup>2</sup> were used. **Results:** Correlations among "hot" and "cool" EFs were moderate ( $r=.56, .66$ ). Children above the cutoff on Inhibit were more likely to have an ADHD-C diagnosis (67%), H/I symptoms, peer problems, disruptive behavior and not follow rules (TV), increased H/I and social problems on the ACTeRS, and problems with parents, peers, and organized activities (PV). Emotional Control elevations were associated with lower FSIQ, fewer normal CPT scores, poorer story memory; more inattentive symptoms, problems with peers, disruptiveness, and assignment completion (TV), problematic ACTeRS attention and H/I scores, and problems with parents, peers and H/I total (PV). Elevations on Working Memory were associated with deficits in visual STM, total attention scores, homework completion, and organizational skills (TV), overall school performance, writing, overall attention and H/I scores (PV). Plan/Organize elevations were associated with poorer visual STM, sentence memory, and the WRAML Attention Index, greater visual and auditory CPT difference scores, poorer math and homework performance (TV), total attention, reading and math performance, and relationships with parents and peers (PV). **Conclusion:** Parent reports of EF problems are associated with teacher reports regarding ADHD, academic, and classroom behavior, as well as standardized testing measures. "Hot" EFs are associated with behavioral and H/I symptoms and ADHD-C. "Cool" EFs are associated with cognitive issues and academic problems (particularly math). Clinical cutoff scores on "cool" EFs were not associated with a greater likelihood of ADHD-I/NOS diagnoses.

## Abstract 52

### Family Functioning as a Moderator of Recovery of Executive Function Skills following Brain Injury in Young Children

*Shari L. Wade, PhD, Nicolay C. Walz, PhD, Pediatrics, Cincinnati Children's Hospital Medical Center, Hudson G. Taylor, PhD, Pediatrics, Case Western Reserve University, Terry Stancin, PhD, Pediatrics, MetroHealth Medical Center, Keith O. Yeates, PhD, Pediatrics, The Ohio State University*

**Purpose:** To examine the relationship of family functioning (FF) to recovery of executive function skills (EF) following traumatic brain injury (TBI) in children aged 3-7. **Methods:** Participants included 87 children hospitalized for TBI and 199 hospitalized for orthopedic injuries (OI). They completed assessments at four time points over the initial 18 months post injury. EF was assessed using the Behavioral Rating Inventory of Executive Functions (BRIEF GEC). Family functioning (FF) was assessed using the Family Assessment Device. Mixed models analyses examined the relationship of pre-injury FF (as assessed at baseline) to recovery of EF skills over time in children with severe ( $n = 23$ ), moderate ( $n = 21$ ), and complicated mild (CM) TBI ( $n = 43$ ) relative to OI. **Results:** Analyses revealed a significant interaction between group, FF, and time since injury. Children with severe TBI had higher GEC scores (poorer EF) than the OI group at the 6-, 12-, and 18-month assessments, regardless of premorbid FF. Children with moderate TBI were only rated as having poorer EF skills than the OI group at 12 months post injury in the context of well-functioning families. To clarify the relationship of FF to EF, we examined each group separately. In these analyses, the effects of FF on EF were greatest in the OI group where children from well functioning families had lower GEC scores at all time periods; whereas FF was unrelated to EF over time in children with moderate or severe TBI. Children with CM TBI from well functioning families had lower GEC scores (better EF) than those from poorly functioning families at 6 and 12, but not 18, months post injury. **Conclusion:** Findings suggest that family functioning is predictive of children's EF among children without neurological insults; however this relationship may be diminished following moderate-to-severe TBI in young children.

## Abstract 53

### Academic Achievement in Survivors of Pediatric Brain Tumors

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*Andrea Farkas-Patenaude, PhD, Psychiatry, Christopher Turner, MD, Oncology, Dana-Farber Cancer Institute, Kathryn Vannatta, PhD, Center for Biobehavioral Health, The Research Institute at Nationwide Children's Hosp*

**Purpose:** To evaluate the academic achievement of survivors of pediatric brain tumors (SPBT) relative to control classmates. To examine the extent to which deficits in academic achievement for SPBT are moderated by medical factors, i.e., age at diagnosis and type of treatment, and family socioeconomic status. **Methods:** SPBT, ages 5-18 and 1-5 years post treatment, were identified from tumor registries at 4 pediatric hospitals and recruited to participate in a multiple assessment study that included data collection in each child's school and home. A case-control classmate was identified for each SPBT, matching for age, gender, and race. Data collection has been completed for 140 SPBT's and their controls. Measures completed with children included the Wide Range Achievement Test (WRAT) and the Wechsler Abbreviated Scale of Intelligence. Medical chart review provided diagnostic and treatment data. Preliminary analyses are available for 98 pairs. **Results:** Overall, SPBT demonstrated significantly lower levels of achievement than controls in reading, spelling, and arithmetic. SPBT who were younger at diagnosis (< 7 years) and received radiation demonstrated the poorest outcomes across domains, evidencing large effects relative to case-controls. However, SPBT who did not receive radiation also exhibited significant academic deficits relative to case-controls ( $d = -0.33$  to  $-0.66$ ). Final analyses will also examine whether the academic outcomes of SPBT are moderated by socioeconomic variables (e.g. parental education). **Conclusion:** This study supports frequently noted concerns about the potential impact of treatment for pediatric cancer on the quality of life of survivors. Although findings substantiate the detrimental impact of cranial radiation, we also find evidence that SPBT who do not receive radiation may experience academic difficulties and could benefit from ongoing support services and collaboration between medical and school systems.

## **Abstract 54**

### **Children's Methods and Modalities of Coping and their Psychosocial Health**

*Audrea R. Youngman, BA, Jeffrey Liew, PhD, Jessica Stubbs, Amanda Shaunessy, Department of Educational Psychology, Texas A&M University*

**Purpose:** The current study examines children's methods and modalities of coping in response to inhibition tasks where they are asked to wait or delay a desired behavior, and how such coping behaviors relate to their psychosocial health. **Methods:** Forty-five children (3 to 6-years-old) were presented with 2 inhibition tasks where they were asked not to touch a desired stimulus (bowl of M&Ms and treasure chest). The children were left alone in the room for 2 minutes. Children's behaviors were coded into 3 methods (distraction, attention, and non-engagement) and 3 modes (visual, physical, and verbal). Based on a sub-sample of participants, preliminary evidence suggests that the coding system was reliable across raters. Caregivers provided information about the child's internalizing, externalizing, and adaptive functioning. **Results:** Preliminary analyses were conducted with a sub-sample ( $n = 20$ ) of participants. Results indicate that children who used attentional strategies were rated as marginally lower on externalizing behaviors and significantly higher on adaptive behaviors,  $rs(18) = -.39$  and  $.41$ ,  $ps < .10$ . Children who used non-engagement were rated as marginally higher on internalizing behaviors but significantly lower on adaptive behaviors,  $rs(18) = .40$  and  $-.72$ ,  $ps < .10$  and  $< .001$ . In regard to modalities of coping, preliminary results indicate that children who used a physical mode were rated marginally higher on adaptive behaviors,  $r(18) = .41$ ,  $ps < .10$ . Children who used a verbal mode were rated as lower on externalizing behaviors,  $rs(18) = -.51$  and  $-.61$ ,  $ps < .05$  and  $.01$  and higher on adaptive behaviors,  $r(18) = .52$ ,  $p < .05$ . **Conclusion:** Preliminary evidence indicates that children's methods and modalities of coping behaviors to inhibition tasks can be reliably distinguished and observed, and each dimension of coping is related to psychosocial health in meaningful ways. Understanding coping across methods and modalities has implications for intervention and prevention programs.

## Abstract 55

### Relationship of Binge Eating and Body Mass Index Change for Adolescents who had Participated in the Healthy Kids Healthy Weight Intervention

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**Purpose:** In a sample of adolescents who are obese and had participated in a weight-loss program, this study examined the association of binge-eating symptoms with reductions in body mass index (BMI) within a model containing demographics, psychosocial and process variables. **Methods:** Subjects had participated in a 12-week hospital-affiliated pediatric weight loss program. BMI change scores were calculated from measured heights and weights at the first session and again at the last session attended. Demographics (age, gender, race, and income) and psychosocial variables (self-esteem, depressive symptoms and body image) were collected at the initial evaluation by self-report questionnaires. The process variable was intervention dose. **Results:** Subjects were 143 adolescents ages 12-18 years ( $M=11.4$ ;  $SD=2.8$ ), 58% male and 70% Caucasian. The mean BMI at entry was  $35.2 \text{ kg/m}^2$  ( $SD=8.4$ ) and at the last session was  $34.5 \text{ kg/m}^2$  ( $8.5 \text{ SD}$ ), with an average of 7.8 ( $SD=3.5$ ) visits. Twenty-two selected *often* or more frequently for, *I have gone on binges where I feel I may not be able to stop*. Results of multivariable analyses with demographics, psychosocial and process variables were that reductions in BMI were significantly related to intervention dose ( $p=0.0001$ ) (i.e., the more visits attended, the greater the decrease in BMI score). Binge eating did not reach statistical significance but was the only other variable that stayed in the model at  $p<0.20$ . This could be an issue of power, because only 22 adolescents reported binge-eating *often* or more frequently in this sample. Findings from a larger sample will be presented at the meeting. **Conclusion:** Our findings show that the dose of a weight-loss intervention is vitally important for its success. Development of effective strategies to encourage program completion should be the continued focus of research and clinical efforts. Additionally, binge-eating behaviors among adolescents who are obese may play a role in impeding successful weight loss and therefore merit careful evaluation and consideration for treatment by trained professionals.

## Abstract 56

### Parenting Behavior in Adolescent Mothers: Does A History of Aggression Matter?

Cathy Scheiner, MD, Developmental and Behavioral Pediatrics, University of Maryland School of Medicine, Linda S. Grossman, MD, Pediatrics, University of Maryland School of Medicine, Maureen M. Black, PhD, Sarah E. Oberlander, PhD, Pediatrics, University of Maryland School of Medicine

**Purpose:** Physical aggression is common among urban low income adolescent females and may undermine parenting among adolescent mothers. To determine the effect of aggression on parenting we compared parenting behavior in adolescent mothers with and without a history of prenatal aggression. **Methods:** Data for this longitudinal study was obtained from a randomized control trial of home intervention among 181 low income primiparous African American adolescent mothers < 18 yrs at delivery (baseline). Infants were healthy, full term. Participants were grouped into 3 aggression categories based on self report of aggression during the preceding year: none, verbal only and physical (with or without verbal aggression). Parenting behavior at 24 months was assessed by 2 observational measures: Parent Child Early Relational Assessment (PCERA) and HOME Inventory (HOME) and 1 self report: Parenting Sense of Competence Scale (PSOC). A one way ANOVA, adjusted for age and intervention, compared mean differences of the 3 groups. **Results:** At baseline 30.9% reported physical aggression; 25.4% reported only verbal aggression and 43.1% reported no aggression. Scores on the HOME subscale measuring environmental stimulation were greater in the physical aggression group compared to the no aggression group ( $p<.05$ ). Scores on the PSOC ( $p<.05$ ), the HOME subscale measuring environmental stimulation and the PCERA Parental Engagement subscale were greater in the verbal aggression group compared to the no aggression group ( $p<.05$ ). **Conclusion:** In this sample aggression is prevalent. Parenting in mothers with a history of prenatal verbal aggression differed significantly from those with no history of aggression. This difference may reflect more effective parenting in those mothers with a history of prenatal verbal aggression. The meaning of different forms of aggression in the context of adolescent parenting and low income urban environments merits further study.

## Abstract 57

### Quality of Life Among Adolescents with Autism Spectrum Disorders

*Deborah L. Shipman, MD, Christopher Sheldrick,, Ellen C. Perrin, MD, Center for Children with Special Needs, Floating Hospital, New England Medical Center, Emily Neger, Psychology, Tufts University*

**Purpose:** Adolescents with Autism Spectrum Disorders (ASDs) have largely been neglected in the recent interest in understanding the quality of life (QoL) of adolescents with special health care needs. The goal of this study was to assess the reliability and validity of self-reports of QoL by adolescents with ASDs.

**Methods:** Thirty adolescents with an ASD completed: 1) computerized versions of two QoL instruments (PedsQL and KIDSCREEN); 2) screening tests for anxiety (SCARED), depression (SMFQ) and self-esteem (Rosenberg) and 3) a screen for intelligence (KBIT). Simultaneously, one parent provided demographic information and completed the BASC-2, the SRS, and two proxy forms of the same QoL questionnaires that the adolescents completed. The standard proxy represented the parent's opinions of the adolescent's QoL; the projective proxy represented how parents thought their child would respond.

**Results:** Internal reliability of the KIDSCREEN and the PedsQL were high, with Cronbach's alpha of .83 and .93. Correlations between the two were also high,  $r=.55$  for the total scores, demonstrating that they measure similar constructs. Construct validity is supported by correlations of the total scores on the KIDSCREEN and the PedsQL with the Rosenberg Self-esteem Scale ( $r=.56$  and  $.65$ ); and between the "Emotions" subscales on both instruments and the Short Moods and Feelings Questionnaire ( $r=.58$  and  $.64$ ), and the SCARED ( $r=.50$  and  $.57$ ). In addition, adolescents' scores correlated strongly with parent reports on both QoL instruments. Average correlations between parent standard proxy and child scores were  $r=.35$ ; between parent projective proxies and child responses  $r=.46$ . **Conclusion:** This pilot study demonstrates that QoL reports of adolescents with ASDs are consistent with their parents' standard and proxy reports. Previously developed Quality of Life measures can be used to assess QoL among adolescents with Autism Spectrum Disorders. Further study is needed to determine those factors that predict Quality of Life for this population and to develop a diagnosis-specific QoL measure for adolescents with ASDs.

## Abstract 58

### Detection, Assessment and Management of Developmental Difficulties in Young Children: A Survey of Processes Around the World

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**Purpose:** This study aimed to describe and compare processes of the detection, assessment and management of developmental difficulties in children aged 0-3 years in high and low- and middle-income (LAMI) countries. **Methods:** Countries with population greater than 5 million, and where an expert respondent was identified were included. Respondents were invited by the World Health Organization (WHO) to complete the Care for Children with Developmental Difficulties (CCDD) Survey, a structured web-based questionnaire. **Results:** Of the 33 respondents contacted, 31 (94%) completed the survey; 8 from high, 17 from middle, and 6 from low- income countries. The total population represented was 68% of the world population. Most respondents were academicians (84%), had at least 10 years of experience working with children with developmental difficulties in their countries (90%), and identified themselves as developmental or developmental-behavioral pediatricians (55%). In all countries, detection and assessment of developmental difficulties was conducted within health systems, mostly (74%) by pediatricians. In most countries (71%), standardized instruments and techniques were not routinely used for the detection, assessment or classification of developmental difficulties. Government subsidized services for children with developmental difficulties existed in 11 (48%) LAMI, versus 7 (88%) of high-income countries. In only 11 (36%) of countries (17% of LAMI versus 88% of high-income), more than half of children with developmental difficulties could receive services. Barriers to the detection, assessment and management of developmental difficulties were similar in all countries and included deficiencies in training of primary health care providers, and widespread unavailability of developmental specialists and services. **Conclusion:** The WHO CCDD Survey indicates that the process and barriers in the detection, assessment and management of young children with developmental difficulties are similar

between countries. There are marked discrepancies, however, in availability of services for children living in LAMI and high-income countries.

### **Abstract 59**

#### **Developmental Screening and Child Care**

*Jessica E. Foster, MD, Pediatrics, The Ohio State Univ. and Nationwide Childrens Hosp., Christine Daley, PhD, Preventive Medicine and Public Health, Kathryn Ellerbeck, M.D, Pediatrics, University of Kansas*

**Purpose:** Effective developmental screening in the community can lead to early identification and intervention. This project aimed to understand child care provider and parent knowledge, attitudes and beliefs about developmental screening. **Methods:** A series of focus groups with 10 parents and 5 semi-structured interviews with child care providers were performed at a private, accredited child care center that cares for approximately 85 children from age 12 months to pre-k. Data were analyzed using inductive ethnographic text analysis. **Results:** Parents and providers were generally well-educated and had interest in developmental screening. They were concerned about the social and emotional impact of developmental delays on children and recognized the importance of early intervention. Both wanted input in the screening process, recognized the value of a formal tool, and felt child care providers were qualified to screen. However, parents and providers wanted an outside "expert" to assist in screening to help avoid inappropriate "labeling" of a child. There was concern about disagreement that might surface during screening and a preference for in-person communication. **Conclusion:** This study suggests that effective developmental screening could occur in the child care setting. However, even in an accredited, high quality child care setting, there is discomfort stemming from misunderstanding about the purpose and process of developmental screening. Parental concern regarding labeling could be reducing compliance with recommended screening activities. This is a potential point for community intervention, education and further investigation as we try to improve early identification of children with developmental concerns.

### **Abstract 60**

#### **Are normal behavior problems exacerbated in children with ASD?**

*Jessica L. Roesser, MD, Strong Center for Developmental Disabilities, University of Rochester Medical Center*

**Purpose:** The behavioral characteristics of children with autism can vary broadly within the spectrum. Some problems parents describe are normal behaviors in typical children, but may be more prevalent in children with autism spectrum disorders (ASDs) or more difficult to address, making them appear to be more problematic. Specific behavioral phenotypes may correlate with childrens cognitive limitations or specific etiologic factors. **Methods:** Charts of 500 children with ASD seen at the Kirch Developmental Services Center in 2006-2007 were retrospectively reviewed for diagnosis, supporting data, presence of other medical or genetic problems, and cognitive abilities. Data on parental report of sleep difficulty, eating problems, and self-help skills like toilet training and continence were also gathered. These data were compared to published rates of sleep difficulty, picky eating and age of toilet training in typical peers. **Results:** Parents reported sleep problems in 33% of children with ASD. Difficulty falling asleep and frequent waking were the most common problems. Picky eating was reported 60% of the time, compared to a 20% prevalence in typical children in the United Kingdom. Texture aversion, food obsession, and pica were reported in children with ASDs, but much less frequently than picky eating. The average age of toilet training was 4 years, older than that seen in typically developing children. The only statistically significant predictors of behavioral difficulties were cognitive disability and presence of another behavioral difficulty. **Conclusion:** Children with ASD have more behavioral difficulties than peers. Picky eating was the most commonly reported problem. Many children had difficulties in both sleep and eating habits. This may be because of more behavioral dyscontrol in the child or because of less parental control. Perceived delays in toilet training may be related to cognitive abilities more than to the autism spectrum disorder.

## Abstract 62

### The Neural Basis of Language Processing in Persons with Down Syndrome

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**Purpose:** Persons with Down syndrome (DS) are impaired in verbal memory and language syntax, but perform well on semantic aspects of language processing. We used functional neuroimaging to investigate the neural basis of syntactic versus semantic processing in 8 persons with DS and 8 typically-developing individuals. **Methods:** Sentences containing syntactic and semantic anomalies and correct sentences (20 of each type) were presented audiovisually during fMRI scanning. Participants responded with a left or right-hand button-press indicating if the sentence is "good" or "silly". **Results:** DS participants had difficulty detecting syntactic anomalies (41% correct) but identified good sentences (83% correct). Performance on the two conditions was significantly different [ $t(6) = 6.25, p < .01$ ], consistent with previous results (Fowler 1990). fMRI data were analyzed using a general linear model approach; thresholded at a level of  $p < .05$  corrected. Subcortical regions and left inferior frontal gyrus were significantly more active for syntactic anomaly detection versus processing correct sentences in the DS group. A similar, but larger intensity/extent of activation emerged in the typically-developing group, who detected syntactic errors with greater accuracy (91% correct). For semantic anomalies, DS participants detected these anomalies more accurately (72% correct) than syntactic ones [ $t(6) = 4.03, p < .01$ ]. However, corresponding differences in fMRI activation between the two anomaly types in the DS group were minimal. One area significantly more active during semantic anomaly detection was found in the left temporoparietal junction. The typically-developing group also accurately detected semantic anomalies (95% correct) and a wider network of activation was observed compared to syntactic anomalies, including the left temporoparietal region, its right hemisphere homologue and left frontal cortex. **Conclusion:** These results suggest that individuals with DS have particular difficulties with syntactic processing but strength in semantic processing, and regardless of level of performance, show lower levels of neural activity in cortical regions underlying language functions.

## Abstract 63

### Comparison of Psychosocial Morbidity in Children With Deployed Versus Non-Deployed Parents

*Mary Catherine Aranda, MD, Pediatrics, Laura Middleton, PhD, Psychology, Eric Flake, MD, BethEllen Davis, MD, Pediatrics, Madigan Army Medical Center*

**Purpose:** To evaluate the relationship between parental military deployment and child psychosocial symptoms using the Pediatric Symptom Checklist (PSC). **Methods:** Setting- U.S. military primary care clinic, performing annual physical exams. 206 parents with children aged 4-16 years and 210 youth (11-16 years) participated. Participants completed a PSC and indicated whether they had a currently deployed parent. 3 target measures were mean PSC scores, subscale PSC scores (internalizing, externalizing, school, and attention issues), and PSC at risk scores. The parent PSCs and youth PSCs were anonymous and unlinked. The number of children without a currently deployed parent was randomly matched to equal the number of children with a deployed parent in both the parent PSCs and the youth self report PSCs. The total parent PSCs analyzed were 106 (53 deployed, 53 non-deployed). The total youth self report PSCs analyzed were 72 (36 deployed, 36 non-deployed). **Results:** The mean parent PSC scores (16.79 vs 10.92,  $p < 0.01$ ) and all the subscale scores ( $p < 0.04$ ) were higher for children with a deployed parent than for children without a deployed parent. In the parent group, 22.6% of the children with a deployed parent reached at risk PSC scores versus 9.4% of the children without a deployed parent ( $p < 0.07$ ). For the youth, mean PSC scores (19.25 vs 11.92,  $p < 0.01$ ) and 3 of the 4 subscale scores (internalizing, externalizing, and school issues,  $p < 0.01$ ) were higher for those who had a deployed parent versus non-deployed parent. In the youth sample, 22.2% of the youth with a deployed parent reached at risk PSC scores versus 8.3% of the youth without a deployed parent ( $p < 0.10$ ). There were no differences between the unlinked parent and youth PSCs except for school functioning. **Conclusion:** Children with a parent deployed showed an increase in psychosocial symptoms and 1 in 5 children with a deployed

parent were identified as at risk for psychosocial morbidity by both parent and youth self report. Youth self-report may be a reliable way to screen for psychosocial morbidity in military families.

## **Abstract 64**

### **Teaching Children With Autism: A Survey Among Educators in Rhode Island**

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**Purpose:** The prevalence of autistic children in Rhode Island (RI) has increased annually. In 2007, 1295 children received special education (SE) services for autism. Physicians and teachers both play a critical role in the care of autistic children with schools providing daily intervention; however, a comprehensive understanding of teachers' perceptions is not available. This study was undertaken to survey school staff about autism. **Methods:** Participants in a professional education conference on autism answered a 28-item IRB approved questionnaire (multiple choice or Likert scale). Results underwent descriptive statistical analysis. **Results:** Two hundred and sixty-three questionnaires were completed from 27 of 37 school districts; 69(26%) respondents taught preschool, 133 (49%) elementary, 85 (31%) middle or high school. One hundred and twenty-nine (49%) were teachers, 61 (23%) classroom aides, 22 (9%) other school staff. One hundred and fifteen teachers taught autistic children. Student profiles were: 26% Asperger disorder, 17% ASD, 12% PDD, 10% autism with MR and 11% autism without MR. One hundred and ninety-seven teachers used a SE approach, 58 used TEACCH, 35 used ABA. Eighty-nine teachers (79%) rated their schools as knowledgeable or better about teaching children with autism and 97 (87%) rated their schools as effective or better. Most frequent sources of information about autism were informal consultations within school, outside consultants and professional development. Seventy teachers (61%) reported no formal presentations on autism in the last 12 months and 18 (16%) reported only one. Physicians were infrequent sources of information. **Conclusion:** Teachers view their schools as knowledgeable about and effectively teaching autistic children. High functioning autism represents the majority of students. SE is most often used and approaches developed for autism are employed considerably less frequently. Physicians are infrequent sources of information on autism. This is a critical problem because it can impede the transfer of medical information and advances from a child's physician to his/her teachers, who are a child's primary treatment providers.

## **Abstract 65**

### **Occurrence of specific reading disability (RD) among individuals with intellectual disability in a population-based birth cohort**

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**Purpose:** RD is often defined as a discrepancy between intellectual ability and academic achievement. Special education laws consider RD and intellectual disability as mutually exclusive categories. However, children with intellectual disability may be at greater risk for discrepant achievement than children of typical intelligence. This study was designed to determine the incidence of RD among school-age children with and without intellectual disability in a population-based birth cohort. **Methods:** Subjects included 5699 children born between 1976 and 1982 who remained in the community after the age of 5 years and who did not have severe mental retardation. Records from all public/nonpublic schools, medical facilities and tutorial services and all IQ and achievement test scores were abstracted. Intellectual disability was defined by full-scale IQ between 51 and 79. RD was established based on 2 discrepancy formulas, 1 regression-based and 1 non-regression based. **Results:** 91 subjects were classified as intellectually disabled, based on at least one documented IQ score less than or equal to 79. Among these 91 children, 13.2% (n=12; 8 females, 4 males) met criteria for RD at a time when IQ was less than or equal to 79, compared to 7.5% (n=422; 103 females, 319 males) of children whose IQ always remained > 80 (OR 1.87; 95% CI, 1.01-3.45; p=0.043). Among females, 18.6% with intellectual disability met criteria for RD versus 3.8% of girls without intellectual disability (OR 5.78; 95% CI, 2.61-12.76; p<0.001). Only 8.3% of boys with intellectual disability qualified as RD, compared to 11.0% of boys without intellectual disability

(OR 0.74; 95% CI, 0.26-2.06;  $p=0.56$ ). **Conclusion:** Our findings indicate that girls with intellectual disability are more likely to also have RD compared to girls without intellectual disability. Intellectual disability and RD should not be considered mutually exclusive. Special education for reading should be offered to children with intellectual disability who also meet criteria for RD.

## **Abstract 66**

### **Does Parent Distress and Coping Influence Perceptions of their Child's Cancer Prognosis?**

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**Purpose:** We examined differences in physician and parent perceptions of prognosis for children with cancer, as well as how parent demographic factors, distress, and coping were associated with these discrepancies. **Methods:** Families were recruited to participate in a longitudinal study of coping and communication within one month of the child's new diagnosis or relapse of cancer. Approximately 87% of mothers ( $n = 77$ ) and 64% of fathers ( $n = 42$ ) participated. Children were 5-17 years old ( $M = 10.8$ ,  $SD = 3.9$ ), and the sample was 90% Caucasian and 52% male. Parents reported the probability of their child's five-year disease-free survival on a 0-100% visual analogue scale. Parents also provided background information and reported on their own coping and adjustment (i.e., symptoms of anxiety, depression, and post-traumatic stress). Attending physicians provided similar predictions regarding prognosis, and medical information was obtained from chart review. **Results:** The average discrepancy between parent and physician report of prognosis was 24% for mothers and 20% for fathers. Most parents (57% of mothers, 56% of fathers) were more optimistic ( $>10\%$  discrepant) than physicians about their child's chance of survival. Discrepancies were larger for mothers with lower educational levels,  $r = -.27$ ,  $p < .05$ ; fewer symptoms of depression,  $r = -.28$ ,  $p < .05$ , and more frequent use of primary control coping (particularly strategies involving emotional expression),  $r = .22$ ,  $p < .06$ . For fathers, demographic factors, distress, and coping were unrelated to discrepancies in prognosis. **Conclusion:** Results highlight parents' tendency to overestimate their child's chance of survival from cancer, as well as maternal factors that influence these perceptions. Medical communication that takes into account the educational level of parents, as well as coping and adjustment, may be important. Additional research should focus on how parents' perceptions of prognosis affect parent-child communication and treatment decision making.

## **Abstract 67**

### **Maternal Unresolved Grief Regarding a Preterm Birth: Implications for Attachment Security in Premature Infants**

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**Purpose:** For some mothers, the birth of a preterm infant is a vulnerable time, characterized by feelings of loss and grief. The mother's ability to adapt to a preterm birth has implications for the quality of early dyadic interactions and infant attachment. Previous research has suggested that mothers with unresolved grief are more likely to have infants who are insecurely attached. This has not been explored with parents of preterms. This study explores the association between maternal unresolved grief regarding a preterm birth and infant-mother attachment security in a sample of preterm infants. **Methods:** This study focused on a subset of infant-mother dyads who are part of a larger longitudinal study focusing on infants born preterm or low birthweight. The present analysis included data from birth, 4, 9 and 16 month visits, and included maternal depression measures (CES-D); a measure of neonatal risk; and the Reaction to Preterm Birth Interview (RPBI), a structured interview which assesses a parent's resolution of grief regarding a preterm birth. Outcome measures included the quality of parent child interactions and quality of infant-parent attachment. **Results:** ANALYSIS: The association between resolution of grief on the RPBI and quality of parent child interactions and security of attachment was explored using a series of 2x2 contingency tables with chi-squared analysis, and odds ratios with 95% CI. Potential confounding variables were assessed through a baseline comparison, and incorporated multiple logistic regression analysis for estimation of adjusted odds ratios with 95% CI. RESULTS: (1) Mothers who reported

elevated depressive symptoms at 9 months engaged in more anxious and intrusive interactions with their infants. (2) Maternal feelings of unresolved grief regarding the preterm birth experience, assessed at 9 months postterm, were associated with insecure infant-mother attachment at 16 months after controlling for maternal depressive symptoms at 3 timepoints. **Conclusion:** A mother's adaptation to having a premature infant has important implications for early dyadic interactions and attachment security.

### **Abstract 68**

#### **Current treatment practices of pediatric oncologists management of depression and anxiety disorders in 9 institutions across the United States**

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**Purpose:** Our purpose is to examine whether pediatric oncologists and fellows who see children with cancer who may have co-morbid depressive or anxiety disorders prescribe SSRIs; to determine why medications are initiated; and how FDA black box warning is monitored. We hypothesized that a majority of oncologists prescribe SSRIs for a minority of their patients. No hypothesis was generated regarding following the FDA black box warning. **Methods:** Nine institutions participated representing many regions of the US, including large teaching pediatric hospitals and smaller teaching hospitals. The 17-item questionnaire targets the use of SSRIs and mixed mechanism agents used to treat depressive and/or anxiety disorders. All of the medications carry the black label warning from the FDA. **Results:** To date, we have obtained data from 153 physicians from 9 institutions. 68% of pediatric oncologists reported prescribing antidepressants to children with cancer. Of those, 54% state that the FDA black label warning has not affected their prescribing practice. Analyses are ongoing examining reasons for initiation of treatment and decision making about ending psychotropic drug therapy. **Conclusion:** Preliminary analyses suggest that the FDA black box warning has not changed the prescribing practices of pediatric oncologists or their procedures for patient monitoring. Social policy implications are discussed.

### **Abstract 69**

#### **Supporting the Participation of Young Adolescents in Clinical Research**

*Mary B. Short, PhD, Psychology, University of Houston - Clear Lake, Susan L. Rosenthal, PhD, Pediatrics, University of Texas Medical Branch*

**Purpose:** In studies of sexual attitudes and behaviors, it is tempting to include only those over 18 years and call them adolescents; however, doing so fails to address the unique developmental needs of younger teens. Thus, we describe the risk behaviors and study participation of adolescent girls enrolled in a study on the acceptability of new methods of STI prevention. **Methods:** Sexually experienced adolescent girls (14-21 years) participated in a 6 month study with 3 face to face interviews and were asked to use a microbicide surrogate when having intercourse. Those under 18 years of age had parental consent. **Results:** Ninety-five of girls were under 18 years of age (8 were 14 years, 24 were 15 years, 29 were 16 years and 34 were 17 years of age). The race/ethnicity was as follows: 50% African-American; 34% Hispanic; 16% Caucasian. At enrollment, 17 had an STD and 32 a pregnancy history. Age of sexual initiation ranged from 11 years to their current age. Many participants had initiated sexual intercourse recently, with 50% of the 14 year olds to 6% of the 17 year olds having begun sex at their current age. Number of lifetime partners ranged from 1 to 20, with 50% of the 14 year olds and a third of 15 year olds having one life time partner. Two of the 14 year olds had rapid partner accrual; 1 reported sexual initiation at 14 years of age with 4 lifetime partners, and 1 began having sex at 11 years with 10 lifetime partners. All the 14 year olds completed all of face-to-face interviews. Rate of adherence for 15-17 year olds was 79% to 86%. Although overall older age was a predictor of using the surrogate, some adolescents in each

group used the surrogate product. **Conclusion:** This study demonstrates the feasibility of enrolling and maintaining participation of high-risk young adolescents. Since enrollment occurred shortly after sexual initiation, we were able to capture attitudes and behaviors that are just being established, which may provide an effective window of opportunity for intervention.

## **Abstract 70**

### **Constraint-Induced Movement Therapy in Children with Brachial Plexus Palsy**

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**Purpose:** Constraint-induced (CI) movement therapy improves hand/arm motor function in children with cerebral palsy (CP). It is believed that CI works by overcoming developmental disregard for the affected limb. Brachial plexus injury, though involving peripheral nerves, may be helped by CI through a similar mechanism. The study objective was to determine if CI leads to motor improvement in children with brachial plexus palsy (BPP). **Methods:** A prospective case series of 5 subjects (age range: 16 mo-5 yr) with perinatal BPP was used. Subjects underwent CI with 4 weeks of casting, weekly occupational therapy, and a home motor training program. Measures were done at baseline, immediately post-CI, and 1 and 6 months post-CI. Measures included the Pediatric Motor Activity Log (PMAL) and the Quality of Upper Extremity Skills Test (QUEST), which have both been used in CI studies on children with CP. Post-CI parent satisfaction surveys were completed. **Results:** All 5 subjects improved in the PMAL frequency of use score and quality of use score for the affected hand/arm. QUEST scores varied highly among the subjects. Parents reported that CI was useful for their child, they would recommend CI to other families, and would consider repeating CI with their child. **Conclusion:** This study is the first to identify CI as a potential non-surgical treatment for children with BPP. This case series supports a future randomized controlled trial to further evaluate this novel treatment. A validated outcome measure for quality of hand/arm movement specific to BPP is needed.

## **Abstract 80**

### **Successful implementation of developmental screening in a large university primary care network: Lessons learned**

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**Purpose:** The purpose of this project was to implement formal developmental screening using American Academy Pediatrics developmental screening guidelines released in 2006 in a large university-based primary care health system. **Methods:** This is an observational study of the implementation of formal developmental screening. The interventions included: 1. onsite education and support 2. the creation of electronic medical record prompts and documentation 3. resource/referral directory for each site. 4. streamlining of referral process through creation of referral letter in electronic medical record. Pre and post billing data from the health system and review of electronic medical records were used to track the number of developmental screenings in total and those completed at the specific well child visits. Referrals were tracked thru the review of electronic medical record. **Results:** Eleven practices including 46 physicians (family medicine, peds, med-peds) and 48 pediatrics and med peds residents received training and support in developmental screening from child development specialists. A total of 2,707 screenings were completed over the year, with 87% compliance at the designated ages. The number of screening in the nonresident practices went from 110 per year preimplementation to 1,488 over the 10 month implementation period. In the resident practice the percentage increase was less as they had already been screening on a limited basis. 248 children (9%) were referred to services as a result of the screening. Keys to success were developing on site relationships with physicians and staff, tailoring the screening program to each site's individual work flow, electronic medical record prompts, and individual physician feedback. **Conclusion:** Formal developmental screening can be successfully implemented in a large system using office based education and electronic medical record supports.