

Plenary Sessions

Abstract 1

Epilepsy in Children with ADHD: A Population-Based Study

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Purpose: Prior studies have shown a higher incidence of symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD) in children with epilepsy, but few studies have examined epilepsy in children with ADHD. Our aim was to determine the incidence of epilepsy among ADHD children in a population-based birth cohort and describe the characteristics of children with both ADHD and epilepsy. **Methods:** All medical records from a previously identified cohort of 358 research identified incident ADHD cases and 728 age- and gender-matched controls without ADHD were reviewed from birth to age 20 for history of a seizure disorder. Data were abstracted from all subjects with seizures including clinical characteristics of seizures, testing, and treatment. Duration of follow-up was calculated from the date of birth until the date of epilepsy or last medical consultation prior to age 20. Cox proportional hazards models were fit to evaluate the association between ADHD status and time to epilepsy diagnosis. The association was summarized by calculating the hazard ratio and corresponding 95% confidence interval. Seizure characteristics were compared between ADHD cases and controls using the two-sided Wilcoxon rank sum test and the Fishers exact test. **Results:** Over a mean follow-up of 19.2 years for the cases and 18.9 years for controls, ADHD cases were 2.7 times more likely to have epilepsy than controls (95% CI 0.94 - 7.76; $p=0.066$). Compared to the six controls with epilepsy, the eight ADHD cases with epilepsy developed seizures at an earlier age (median 5.5 vs 15 years; $p=0.020$) and experienced more frequent seizures (more than monthly, 63% vs 17%; $p=0.14$). Among the children with ADHD, children with epilepsy were less likely to have received a clinical diagnosis of ADHD compared to children without epilepsy (63% vs 89%; $p=0.052$), and only half of children with ADHD and epilepsy were prescribed stimulants compared to 85% of the children without epilepsy ($p=0.025$). **Conclusion:** Our study suggests that the incidence of epilepsy is higher in children with ADHD than in children without ADHD. Epilepsy in children with comorbid ADHD appears to be more severe than in those without ADHD. Finally, there appears to be a reluctance to diagnose and treat ADHD among children with epilepsy.

Abstract 2

The Global Failure: Barriers in Developmental and Behavioral Pediatrics Residency Training: Survey of Rotation Directors

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Purpose: To identify specific barriers occurring during the 1-month rotation in Developmental Behavioral Pediatrics (DBP). **Methods:** BACKGROUND: Pediatricians in practice report persistent discomfort in identifying and managing DBP issues, despite efforts to enhance DBP training, including a mandated 1-month rotation, plus longitudinal training in DBP. Few studies have examined barriers that occur during the 1-month rotation that interfere with preparing MDs to identify and manage DBP issues. METHODS: All DBP rotation directors of US pediatric residency programs were invited to complete an anonymous web-based survey. The 39-item survey was designed by 3 DBP rotation directors from different university-based programs. Items were developed based on related studies and professional experience and covered the following areas: faculty and trainee demographics, training methods and content, funding sources and performance evaluation methods. Rotation directors were contacted up to 3 times over a 2-month period. **Results:** A total of 129 out of 187 US directors completed the survey (69%). About 1/3 have served in this position over 10 years; over 1/3 are not board-certified DB Pediatricians and about 40% are not Society of Developmental Behavioral Pediatrics members. About 1/3 of programs report being unsuccessful in meeting the 8 Academic Pediatric Association guidelines for DBP training. Resident barriers included: 1) In 30% of programs, most residents take vacation during rotation and in 60% of programs some residents take vacation, and 2) 43% of residents miss aspects of the rotation due to on-call responsibilities. Faculty barriers included: 1) 54% of rotation directors receive no salary support for their role, although 36% reported spending more than 10 hours and often more than 20 hours/month in rotation implementation and 2) 40% of respondents reported that support from their chairman was not adequate. **Conclusion:** In many programs, resident and faculty barriers continue to interfere with successful implementation of the DBP resident rotation. These barriers contribute to continued discomfort with DBP issues in practice.

Abstract 3

Deletions of Neurexin-1 Predispose to a Wide Spectrum of Developmental Disorders

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Purpose: Neurexin1 (NRXN1), an evolutionarily conserved structural component of the synaptic complex, is essential for proper synaptic function. Research has implicated mutations in neurexin-1 (NRXN1) in a variety of conditions including autism, schizophrenia, and nicotine dependence. To our knowledge, there have been no published reports describing the breadth of the phenotype associated with mutations in NRXN1. Our purpose is to describe the range of phenotypes associated with deletions of neurexin-1 gene in a clinical cohort. **Methods:** We present a medical record review of patients with deletions involving exonic sequences of NRXN1. We ascertained cases from 3450 patients referred clinically for comparative genomic hybridization (CGH) testing from March 2007 to January 2009. **Results:** Twelve patients were identified with exonic deletions of variable size and location along the NRXN1 gene. Four cases were confirmed denovo deletions and 5 were parentally inherited from a mildly affected or unaffected parent. The phenotype of individuals with NRXN1 deletion is variable and includes

autism spectrum disorders, mental retardation, language delays, and hypotonia. There was a statistically significant increase in NRXN1 deletions in our clinical sample compared to control populations described in the literature ($p < 0.0001$). **Conclusion:** Our study suggests that deletions of NRXN1 predispose to a wide spectrum of developmental disorders. As more patients are identified through CGH strategies, long term follow up and detailed phenotyping will be essential for a clearer understanding of the NRXN1 deletion phenotype.

Abstract 4

Maternal & Infant Risk Factors Associated with Infant Inconsolability: Who is crying now?

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Purpose: To examine the prevalence of infant inconsolability and determine associated infant & maternal risk factors in a population based study. **Methods:** 7,934 RI women giving birth between 2004-2007 were surveyed using the Centers for Disease Control's Pregnancy Risk Assessment Monitoring System with a 73.8% weighted response rate. Infant inconsolability was defined as being "somewhat" or "very" difficult to calm when crying or fussing with a prevalence of 8%. Mean infant age was 111 d and 89.5% were 2-4 mos. **Results:** Infant characteristics associated with their inconsolability included birth weight $< 2500g$ (10.8% vs. 7.8%, $p < 0.001$) and gestational age < 37 wks (9.9% vs. 6.8%, $p < 0.05$), but not infant age. Maternal characteristics associated with infant inconsolability included: maternal race (W=7.7%, B=7.2%, A= 17.1%, Am Indian=5.6%, Other=12.8%, $p < 0.001$), Hispanic ethnicity (12.6% vs. 7.2%, $p < 0.0001$), younger maternal age ($< 20yr=11.9%$, $> 35yr=6.5%$, $p < 0.001$), lower maternal education ($< 12th=10.6%$, $12th=8.5%$, $> 12th=6.8%$, $p < 0.01$), lower maternal income ($< \$15000=10.4%$, $> \$50000=6.5%$, $p < 0.01$), and public prenatal health insurance (9.9% vs. 6.8%, $p < 0.001$). Mothers of inconsolable babies were more likely to acknowledge post-partum depressive symptoms (15.7% vs. 6.9%, $p < 0.001$) as well as a lack of knowledge of shaken baby syndrome (10.9% vs. 5.5%, $p < 0.01$). In addition, these mothers were also more likely to report their own experience with intimate partner violence in the previous 2 years (10.5% vs. 5%, $p = 0.0001$). **Conclusion:** This study identifies a potentially dangerous association between infant inconsolability, maternal depression, lack of knowledge regarding the safe handling of babies and multiple demographic risk factors including domestic violence. Pediatricians evaluating fussy babies should inquire about maternal mental health and exposure to domestic violence, educate parents on the consequences of shaking an infant and be knowledgeable of community resources to help families with these concerns.

Abstract 5

Increasing Blood Draw Compliance in Children with Autism Spectrum Disorders (ASD)

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Purpose: Previous research shows that children with ASD have increased medical fears and a high prevalence of anxiety problems. We developed an intervention to address anxiety and

noncompliance with blood draws for children with ASD. **Methods:** Participants: Thirty-three children, ages 3 to 13 years, participated in the intervention. Families were offered the parent-administered intervention after endorsing concerns about venipuncture during an enrollment screener for a larger study of ASD. Materials: The Blood Draw Kit includes detailed instructions for the parent and child, an individualized social story, and a Boardmaker picture schedule. Additionally, families are given a kit of venipuncture materials including rubber gloves, alcohol swabs, band-aids, an elastic tourniquet, and a 5ml plastic syringe. Procedure: The overall practice consists of multiple parent-led sessions. Each describes a portion of the blood draw, builds on the session prior, and culminates in the administration of a pretend blood draw. The intervention schedule is flexible and adaptable for the individual. After participation is complete, parents receive a survey to report on their child's experience. **Results:** Prior to the intervention, 245 children with ASD were seen through the larger study; 35 were unable to successfully complete the blood draw (14%). Since offering the program, 25 of 73 children who completed the research blood draw have participated in the intervention. Of those 25, 24 children successfully gave blood (96%). Children who received the intervention were 4 times more likely to complete the venipuncture than children seen prior to implementing the program (OR= 4.000 (95% CI: 0.524-30.521)). Participants were recruited using a standardized protocol and did not differ pre- and post- intervention on measures of gender, age, ethnicity, cognitive impairment, or severity of symptoms. **Conclusion:** Preliminary results show 24 successes to date and an increased compliance rate for the intervention group. Positive response to our program has important implications for venipuncture compliance for children with ASD in both clinical and research settings.

Abstract 6

Reading, Teaching, Play and Verbal Responsivity are Associated with Enhanced Attention at 24 Months

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Purpose: Attention, an aspect of self-regulation, is important for learning and behavior. We sought to determine whether the cognitive home environment in low SES infants/toddlers was associated with attention at 24mos. **Methods:** Longitudinal analysis of mother-infant dyads followed from birth-24mos. Consecutive dyads enrolled in urban public hospital. Inclusion criteria: English/Spanish language, no medical complications. Dependent variable: Attention (24mos) - Infant Toddler Social Emotional Assessment (ITSEA) Attention Subscale. Independent variable: Cognitive home environment (6,14,24mos) - StimQ, with 4 subscales: reading, teaching, play and verbal responsivity. Potential confounders: sociodemographics, maternal depression, 6mo temperament (STSI). **Results:** 158 children assessed for attention at 24mos. 60.1% of mothers did not graduate HS; 90.5% Latina. StimQ total and reading at 6,14 and 24mos correlated with attention at 24mos (See Table). Correlations also found for teaching, play and verbal responsivity. In multiple regression adjusting for all confounders, StimQ total scores at the 3 ages entered as a set into model accounted for 13.2% of the variance in attention at 24mos ($p < .001$). A 1 SD increase in 6mo StimQ was associated with a .66 times

reduction in odds of having attention in the "Of Concern" range ($p=.04$). **Conclusion:** Reading, teaching, play and verbal responsivity in low SES infants/toddlers are associated with enhanced attention at 24mos. Strategies to enhance these activities, such as Reach Out and Read, should be integrated in primary care. Funding: NICHD R01 HD047740-05, Tiger Foundation, Marks Family Foundation.

Correlations: StimQ (6,14,24mos) with ITSEA Attention

	6mos	14mos	24mos
StimQ Total	.32**	.24*	.37**
Reading	.27**	.19*	.37**
Teaching	.08	.21*	.24**
Play	.18*	.17	.27**
Verbal Responsivity	.28**	.02	.12
			* $p<.05$, ** $p<.01$

Abstract 7

Occurrence of Specific Written Learning Disorder (WLD) Among Individuals with Mild Intellectual Disability in a Population-Based Birth Cohort

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Purpose: Special education laws exist to ensure timely intervention for children with learning disabilities. However, these laws consider learning disability and intellectual disability as mutually exclusive categories, excluding many children from evidence-based interventions. Children with primary neurodevelopmental disabilities are more likely to exhibit secondary disabilities. This suggests that children with intellectual disability should have higher rates of WLD than those without intellectual disability and should not be excluded from targeted remedial interventions. **Methods:** Subjects included 5699 children born between 1976 and 1982 in Rochester, MN who remained in the community after the age of 5 years and who did not have severe intellectual disability. Records from public and nonpublic schools, medical facilities and private tutorial services were reviewed, and results of individually administered IQ and achievement tests were abstracted. Mild intellectual disability was defined by full-scale IQ scores between 51 and 79. WLD was established by research criteria based on 2 discrepancy formulas, 1 regression-based and 1 non-regression based. **Results:** 91 subjects were classified as having mild intellectual disability based on at least one documented IQ score 79. Among these 91 children, 13.2% ($n=12$; 5 females, 7 males) met research criteria for WLD while their IQ was 79, compared to 9% ($n=502$; 139 females, 363 males) of children whose IQ always remained 80 (OR 1.5; 95% CI, 0.8-2.9; $p=0.16$). Among females, 11.6% with mild intellectual disability met criteria for WLD versus 5.1% of females without intellectual disability (OR 2.4; 95% CI, 0.9-6.3; $p=0.058$). In males, 14.6% with mild intellectual disability met criteria for WLD, compared to 12.5% of males without intellectual disability (OR 1.2; 95% CI, 0.5-2.7; $p=0.67$).

Conclusion: Our data indicate that children with mild intellectual disability are at least as likely to exhibit WLD as children without intellectual disability. However, our data show a trend toward increased WLD rates in females with mild intellectual disability compared to female peers without intellectual disability. Thus, children with mild intellectual disability should be evaluated for WLD and receive special educational services aimed at achieving optimal writing potential to maximize functional independence and quality of life.

Abstract 8

Is there an Association between Videogame Use and Attention and Hyperactivity Symptoms?

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Purpose: The objective of our study is to investigate the relationship between videogame use and attention and hyperactivity (A/H) symptoms using data from a national sample. Our primary hypothesis is that increased videogame use is associated with increased A/H symptoms. Our secondary hypothesis is that increased videogame use early on is associated with A/H symptoms 5 years later. **Methods:** This is a secondary data analysis of the Panel Survey of Income Dynamics, a longitudinal cohort study of U.S. families. We included children ages 3 to 18 years who had complete data for 1997 and 2002. We derived duration of videogame use from parent-completed time use diaries. The primary outcome was a composite score of A/H symptoms from the Behavioral Problems Index (BPI), a parent questionnaire derived from the Child Behavior Checklist. To analyze the relationship between videogame use and BPI scores, we used bivariate analyses and multivariable regression controlling for covariates such as age, race, gender, ADHD diagnosis, television exposure, parent education, income, psychological well-being and parenting aggravation. **Results:** 1,556 children had complete data for both years. In 1997, average age was 7.5 years; 51% were boys. (See table for descriptive results) Our cross sectional analysis revealed no significant association between videogame use and BPI scores for 1997 or 2002. Longitudinally, the amount of weekday videogame use in 1997 was significantly associated with higher BPI scores in 2002 after controlling for gender, age, parent education, BPI score in 1997, ADHD diagnosis, television exposure and videogame use in 2002. **Conclusion:** Young children who play more videogames during the weekday may be more likely to present with increased A/H symptoms 5 years later.

	1997	2002
Diagnosed with ADHD	78 (5%)	124 (8%)
Videogame players	519 (33%)	738 (47%)
Weekday Videogame Use	0.6 hours	1 hour
Weekend Videogame Use	1.3 hours	1.8 hours
Mean BPI Score (5-15)	6.9	7.1

Abstract 9

Neural Correlates of Reading Disability: Implications for the use of Low Achievement, Aptitude-Achievement Discrepancy, and Response to Intervention (RTI) Models to Define Poor Readers

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Purpose: The three most widely used methods to identify individuals with reading disability are either solely by low reading achievement, by the discrepancy of aptitude and reading achievement, or by response to intervention (RTI). It has been shown that there are no significant differences between children identified using the first two methods in core reading-related skills and their developmental trajectories. These studies suggest that individuals with reading difficulties regardless of their aptitude would show similar neural signatures. In addition, the RTI model suggests that poor readers who do and do not respond to intervention will show different brain patterns even before they receive intervention. The purpose of the study was to examine brain activation differences in poor readers with and without low IQ, and also in poor readers who do and do not respond to intervention. **Methods:** Children (N=131) received functional MRI (fMRI) of phonological processing and a standard battery of neuropsychological assessment. Study 1 (N=57) included 15 poor readers with low IQ (LowIQ), 16 poor readers with typical IQ (TypIQ) and 26 typical readers. Among the 31 poor readers, 21 received intervention and 11 were considered as responders and 10 as non-responders. Study 2 (N=74) included 20 children in the LowIQ group, 18 in the TypIQ group and 36 control children. **Results:** In Study 1, poor readers (LowIQ and TypIQ) compared to the typical readers showed significantly reduced activation in bilateral parieto-temporal, left inferior frontal, right middle temporal and middle frontal regions, most of which are involved in phonological processing and reading. There were no significant differences in brain activation between the two groups of poor readers. Results were mostly replicated in Study 2. In addition, in Study 1 responders compared to non-responders showed greater right parieto-temporal activation, considered to be important for compensatory reading skills. **Conclusion:** This is the first neuroimaging study to examine the neural correlates of different classification models in poor reading children. The results provide additional evidence that aptitude does not need to be considered when identifying poor readers. Our results also support the RTI model in identifying poor readers in most need.

Abstract 10

Individual Differences in Infant Speech Perception Predict Language and Pre-Reading Skills through Age 5 Years

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Purpose: Many children struggle in learning to read, which most often perpetuates into reading difficulty through adulthood, particularly in the absence of early intervention. Given previous literature documenting links between speech perception and pre-reading ability, this longitudinal study examined how individual differences in preverbal speech perception relate to

preschool phonological awareness (PA), a documented precursor to early literacy success.

Methods: A subset of a larger longitudinal project, a total of 25 children (8 girls) without known developmental or neurological concerns participated in all assessments. At ages 7 and 11 months, phonetic sensitivity was measured behaviorally by speech sound discrimination (for a native vowel contrast). Vocabulary development was examined at age 2 years via a normed parent report instrument. Phonological awareness and general language skills were measured at age 5 years using multiple standardized clinical assessment tools. **Results:** Results: Infant sensitivity to the vowel contrast at 7 months was positively associated with performance on phonological awareness at age 5 years ($p < .01$), while controlling for vocabulary at age 2. Importantly, cluster analyses revealed three statistically distinct subgroups of infants: those who showed comparatively low sensitivity at both 7 and 11 months, those who showed an increase in sensitivity from low to high, and those who started and remained high. After controlling for socio-economic status and general cognition, the low-low subgroup performed on average nearly one standard deviation below the other subgroups on the phonological awareness test at 5 years. On the general language tests at both 2 and 5 years however, the low-high group scored significantly higher than the low-low and the high-high groups, which were comparable to each other. **Conclusion:** Individual trajectories in sensitivity to native language cues within the first year of life predict both language and pre-literacy skills through age 5 years, supporting the notion that changes in early speech perception plays an important role in language acquisition. Based on these preliminary data, a working hypothesis is that the earlier an infant becomes attuned to the phonetic patterns relevant in the native language, the sooner he or she will successfully master phonological awareness.

Abstract 11

Multiple Perspectives of Children's Social Adjustment after a Sibling's Death from Cancer

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Purpose: Cancer is the leading cause of death by disease for children ages 2-15, yet its impact on siblings has received little empirical attention. Within the first year of a child's death, we compared the social adjustment of bereaved siblings to peers from the perspective of multiple informants at school and in the home. **Methods:** Three to twelve months after a child's death from cancer ($M = 9.52$ months, $SD = 0.42$), families with a surviving child ($n = 67$) were recruited (70% participated) from three, large children's hospitals. Bereaved siblings were 8-17 years old and on average attending 6th grade. Comparison peers ($n = 67$) from the classroom were matched for age, race, and gender. The sample was 76% Caucasian and 57% female. In a school-based assessment, siblings and classmates completed the Revised Class Play (RCP) to assess behaviors, as well as measures of friendship and peer acceptance. Teachers completed the RCP and Teacher Report Form (TRF). At a subsequent home visit, bereaved siblings and comparison peers (ages 10-17) completed the Self Perception Profile for Children (SPPC) and Youth Self Report (YSR), and their parents completed the Child Behavior Checklist (CBCL). **Results:** Mixed models analyses with a matched pairs design revealed that teachers viewed bereaved siblings as more prosocial ($p < .05$), and bereaved siblings felt they were less

victimized than peers ($p < .05$). The groups did not differ in number of best friends, reciprocated friendships, or peer acceptance ratings. Bereaved siblings had significantly lower scores on social self-concept, as well as YSR and CBCL Total Competence scores ($p < .05$). Analysis of YSR and CBCL subscales indicated small to medium effects for Social Competence and Activities. In general, child grade/age and time since death were not associated with social functioning.

Conclusion: Within the first year of losing a brother or sister to cancer, bereaved siblings were similar to peers on most measures of behavior, friendship, and peer acceptance, suggesting social resilience in the school setting. However, home-based assessments suggest that children's social competence and involvement in activities may decline after a sibling's death.

Abstract 12

Love in the Time of HIV/AIDS: Adolescent Couples and Sexual Risk Behavior

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Purpose: HIV/STD prevention with youth has focused on individual-level cognitive factors, and neglected how relationship characteristics affect condom use. **Methods:** We screened inner-city youth aged 14-17 from outpatient medical practices to identify those in sexual relationships >4 weeks duration. We enrolled 139 heterosexual couples, which was 85% of those meeting eligibility criteria (age difference < 3 yrs; partner lives in same city). Teens individually completed measures on computer every 3 mos. for 1 yr. whether still in the relationship or not. Baseline data are reported here. **Results:** On average, boys were 1 yr older than their partners. 25% of couples were Black, 47% Latino and 27% mixed. Mean couple age was 16 mos. per boys' report and 12 mos. per girls'. Partners generally agreed about relationship characteristics: being in a serious relationship (68%), being in love (80%), that they would be together forever (future commitment, 64%) expecting monogamy (64%), mutually trusting the partner to be faithful (29%), and saying said the relationship was very/extremely important (salience, 82%). On the Sexual Relationship Power Scale couples agreed that they had equal power. 42% of couples agreed they were completely comfortable talking to each other about serious things, and on the Openness in Communication subscale, boys and girls had high levels of open communication. In a regression predicting unprotected vaginal sex, we used a Poisson model adjusting for over-dispersion. Generalized estimating equation methodology was used to account for correlation within couples. The equation controlled for couple age, respondent age, partner age difference, and gender and included being in love, salience, perceived salience to the partner, future commitment, expected monogamy, actual monogamy, trust, communication and power. Being in love (estimate=2.09, $p < .005$) and trusting one's partner (estimate=.66, $p < .05$) were significantly associated with more unprotected vaginal sex.

Conclusion: Serious relationships are common and developmentally appropriate in middle adolescence, and national data suggest that teens use condoms in casual relationships. Thus, most unprotected sex among teens occurs in serious relationships. We conclude that prevention programs must focus on risk for HIV/STIs in love relationships, and address the delicate and complex challenge of recommending condom use with a trusted partner.

Abstract 13

Poor Sleep in Adolescents with Chronic Pain: Outcomes from a Trial of Online Cognitive Behavioral Therapy

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Purpose: Disrupted sleep is a challenging sequela of chronic pain in adolescents. Although identified as an important outcome, sleep is rarely incorporated into interventions or measured as a treatment outcome. We conducted a randomized controlled trial of online family cognitive-behavioral therapy (CBT) including behavioral (e.g., relaxation training), cognitive, and parent operant strategies. One lesson focused on improving sleep hygiene. We evaluated treatment effects on adolescent pain, disability, and sleep at post-treatment. **Methods:** Thirty-three adolescents (M=14.8 years; 70% female) with chronic headache, abdominal, or musculoskeletal pain wore an actiwatch for 7 days pre-treatment and immediately post-treatment. The online CBT group (n=17) received 8-10 weeks of online family CBT + standard care, while the wait-list control group (n=16) continued with standard care. Actigraphy, an objective sleep measure using a motion-sensing device, assessed sleep duration and sleep efficiency (percentage of time in bed spent asleep). **Results:** At post-treatment, on average adolescents had insufficient sleep duration (M=6 hrs 57 min, SD=52 min) and low sleep efficiency (M=84.8%, SD=4.8). ANCOVAs controlling for pre-treatment values were conducted on the primary treatment outcomes of pain, disability, and sleep. Analyses indicated significant group differences on disability (p=.04) and pain (p=.05) at post-treatment showing improvement for adolescents receiving online CBT in comparison to the control condition. However, despite changes in pain and disability, there were no significant group effects from pre- to post-treatment on sleep outcomes. In regression analyses controlling for treatment group, sleep efficiency was a significant predictor of disability outcome scores (p=.03) but not of pain scores. **Conclusion:** In sum, while the CBT intervention produced positive effects on pain and disability, it did not improve sleep outcomes in adolescents with chronic pain. Given the significant sleep disturbances experienced by these adolescents and their relationship to disability, there is a clear need to develop and test more intensive sleep interventions in this population.

Abstract 14

Impact of Self-Concept on Readiness for Change in a Pediatric Obese Population

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Purpose: Pediatric obesity is a national epidemic. The increase in the rates of obesity has led to the need for the development of multidisciplinary pediatric obesity intervention programs. With the crucial addition of behavioral health professionals in these intervention programs,

focus has turned to examining lifestyle and psychosocial factors related to weight gain and program benefit. Motivation to change is noted to be a key factor that determines program adherence, and this factor is noted to be impacted by various psychosocial factors, including self-concept. The current study examines the potential relationship between self-concept and motivation to change. **Methods:** 144 children (BMI > 85thile, mean age = 12.56, SD = 1.90; 71 males, 73 females) participating in a 12-week obesity program were included. Participants completed an intake assessment including an evaluation of self-concept, (Piers-Harris Self Concept Scale-2nd Edition), and motivation for change, the Readiness for Change Questionnaire (RFC) (developed by the program/based on constructs of the URI Change Assessment scale). Four domains of self-concept- the Intellectual and School Status, Physical Appearance and Attributes, Popularity, and Happiness and Satisfaction- were utilized in this study. The RFC consists of two factors, cognitive and emotional readiness for change. **Results:** Hierarchical regression analyses demonstrated that self-concept variables significantly predict cognitive (F (5, 137) = 3.175, p = .01, R² = 0.102) and emotional (F (5, 136) = 5.558, p < .01, R² = 0.169) readiness for change after controlling for gender. More specifically, a child's self-concept of intellectual and school status significantly predicted cognitive readiness for change (t = 1.963, p = .05) while popularity significantly predicted emotional readiness for change (t = 3.03, p < .01). In addition, overall self-concept significantly predicted total readiness for change (F (2, 139) = 21.895, p < .01) after controlling for gender. **Conclusion:** These results indicate that self-concept can greatly contribute to children's cognitive and emotional readiness for change, which in turn can affect their outcome in a pediatric weight management program. To be maximally effective, interventions must address children's self concept as well as their cognitive and emotional readiness for change.

Abstract 15

Autism Spectrum Disorders and Health Care Expenditures: the Impact of Co-morbidities

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Purpose: Autism Spectrum Disorders (ASD) are associated with many co-occurring conditions, among them intellectual disability (ID), problems with attention and hyperactivity, epilepsy and seizures. Although many studies calculate mean medical expenditures of children with ASD, few investigated how the different comorbidities affect them. The objective of this study is to provide estimates of the medical expenditures of publicly insured children and adolescents with ASD in the United States and to describe how specific co-morbidities impact those costs.

Methods: We used MarketScan Medicaid data from four states and selected individuals with Autism Spectrum Disorders related claims in the years 2003-2005. We restricted our sample to individuals age 17 or less who had 330 days of coverage in Medicaid in 2005. We identified children with the specific co-morbidities as well. We then computed their medical expenditures, as the sum of inpatient, outpatient and drug claims expenditures stratified by comorbidities. In addition, we determined how each co-morbidity impacted the cost. **Results:** We identified a sample of 9,388 individuals with ASD out of 2,256,234 persons enrolled for the year 2005 who were aged 17 or below. This yields an administrative prevalence of 41.6 per 10,000 which is similar to population prevalence based on medical records only. Average total

expenditure per child age 2 to 17 is US\$16,770 compared to US\$ 1,630 for controls. On average, 20% of children age 8 to 17 have a diagnosis of intellectual disability and the total expenditures of children with ID is 2.6 times those of children without. **Conclusion:** Further analysis will investigate problems with attention and hyperactivity of the childhood and adolescence, epilepsy and seizure. Information on which co-morbidities substantially increase medical expenditures can be used both to raise awareness and focus secondary prevention efforts when possible.

Poster Symposium Abstracts

Abstract 16

Development of Children Born Prematurely: Advantage of Beginning Early Intervention in the First Year of Life

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Purpose: Implementation of federal legislation IDEA Part C varies across states and few states consider biological risks in determining eligibility for early intervention(EI). Differences in age of enrollment and intensity of services may affect rates of developmental progress in this population. The purpose of this study is to compare rates of developmental progress as a function of timing and intensity of services. **Methods:** 84 preemies(mean GA= 30.5 weeks, range 24-36 weeks)were followed prospectively from birth to age 3 years. For each child, data were collected from EI agencies with respect to the timing, intensity, and duration of EI services. Based on the start date of EI services, children were divided into 3 groups:(1)children who began intensive EI before age 1 year(Early EI);(2)children who were monitored before age 1 year and began intensive EI after age 1 year(Early monitoring-Late EI);and,(3) children who began intensive EI after age 1 year(Late EI).To assess developmental progress, evaluations including the Vineland Adaptive Behavior (VABS)Composite Standard Score were collected when the child was 4 months and 36 months of age. A VABS change score was calculated for each child (score at 36 months - score at 4 months). Chi-square and t-tests were used to compare groups in terms of sociodemographic variables. ANCOVA was used to compare change scores by group, controlling for total EI service hours and 4 month VABS scores. **Results:** The 3 groups were similar in terms of sociodemographic and gestational age characteristics. Overall, mean VABS scores at 36 months were in the low average range. VABS scores were lower at 36 months than at 4 months. Children in the Early Monitoring and Late EI had significantly more negative mean change scores than the children in the Early EI group. **Conclusion:** In this sample of preemies, receipt of intensive EI before age 1 year led to greater developmental progress than starting EI services after the 1st year of life.

Impact of Timing and Intensity of EI on Developmental Progress

	Number of Children	Mean Change Score	Sig.
Early EI	21	-5.81	
Early Monitoring-Late EI	18	-12.06	.05
Late EI	34	-12.41	.05

Abstract 17

Missed Opportunity for Developmental Support During Hospitalization: A View from a Developing Country

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Purpose: In low and middle income countries where well-child care may not be optimally available, hospitalization of young children is an important period that may enable the opportunity to detect developmental difficulties and to support child development. The purpose of this study was to detect the rates of developmental difficulties and the need for developmental support in children aged 0-3 years that were hospitalized during an acute illness at Kecioren Research and Training Hospital in Ankara, Turkey. **Methods:** All children aged 0-3 years who were hospitalized during a 6-month period were assessed by two specialists with the Guide for Monitoring Child Development (GMCD). The GMCD is a practical, open-ended interview that catalyzes communication between clinicians and caregivers, obtains a portrayal of the child's development, has been standardized and validated for Turkish children and is being used internationally. **Results:** Of the 250 patients, 56% were boys and median age was 8 months (range: 1- 35 months). Most mothers (51%) had only primary school education and 43% were younger than 25 years of age. Most patients were hospitalized for respiratory tract infections (37%), acute gastroenteritis (8%), or urinary tract infections (10%). Most mothers (76%) did not have concerns about their children's development. Only 20 children (8%) had developmental disability requiring early intervention or rehabilitation. Many children however (64%) had developmental difficulties that required counselling about home-based activities that can enhance early childhood development. In only 5% of children, developmental disabilities and difficulties had been detected prior to the hospitalization. The remaining children had received neither services nor counselling. **Conclusion:** The results of this study demonstrate that developmental difficulties are common, and hospitalization offers an opportunity to detect, and manage such difficulties

Abstract 18

Structural Barriers to Early Intervention Services for Foster Children in Massachusetts

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Purpose: This study was designed to identify factors that facilitate or prevent access to and utilization of Early Intervention (EI) services by foster children in the greater Boston area. The 2003 federal Child Abuse Prevention and Treatment Act mandated the implementation of provisions and procedures for referral of a child under age 3 who is involved in a substantiated case of child abuse or neglect to EI services, funded under part C of the Individuals with Disabilities Education Act. **Methods:** A semi-structured interview guide was developed and in-depth qualitative interviews were conducted with EI providers in the metro Boston area and child welfare workers at the Massachusetts Department of Children and Families (DCF). **Results:** Analysis of these data, using a process of coding consensus, co-occurrence, and comparison, found that DCF-involved children had unique living situations that compromised the ability of EI providers to conduct an accurate eligibility assessment. For children in foster care, limitations included confidentiality constraints on information shared between EI and DCF, foster parents' incomplete knowledge of developmental histories, and frequent placement changes (often without advance notice to EI programs). Additionally, aspects of program design disproportionately affect foster children and make it less likely that these children will be deemed eligible for services. For example, the requirement to evaluate the current home environment means that eligibility for EI services is based on the foster parent home, and does not take into account the long-term effects of trauma on a child's development. For children involved with DCF but living with their biological parents, mandated referral cases often require more time and resources than those screened into the system from other sources, given complicated trauma histories, parental distrust of public service systems, and a lack of family and social supports. However, reimbursement for EI outreach and services is based on face-to-face contacts, and does not support case coordination or missed appointments. **Conclusion:** Overall, these findings suggest that implementation of mandated referral policies cannot serve their intended purpose unless the unique needs of abused and neglected children are taken into account from the outset.

Abstract 19

The Persistence of Sleep Disturbance in Children Evaluated for Autism Spectrum Disorders: Predictive Factors and the Impact of Co-Occurring Diagnoses

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Purpose: Mounting research suggests that children with autism spectrum disorders (ASDs) and other clinical diagnoses demonstrate a higher prevalence of sleep problems than typically-developing children. Additionally, sleep problems are related to a number of cognitive, emotional, and behavioral concerns in pediatric populations. Limited research exists comparing sleep problems in children with ASDs with sleep problems in other clinical populations, or exploring the length of these sleep problems. The current study sought to explore the development and improvement of sleep problems over one year, as well as predictors to help identify children at high risk for persistent sleep problems. **Methods:** Impact of age, cognitive functioning, adaptive functioning, behavioral functioning, and number of co-occurring diagnoses were explored as predictors, and comparisons between clinical groups were made. Subjects were 150 children referred for evaluation for ASDs in a hospital-based ASD assessment clinic. Measures of sleep, cognitive ability, developmental functioning, adaptive behavior, and behavioral functioning were administered in addition to other routine aspects of the multidisciplinary ASD assessment. The sleep measure was again administered one year later, with 49 participants responding. **Results:** Results indicated that children with ASD did not demonstrate sleep problems at a higher prevalence rate than other clinically-referred children, but both demonstrated prevalence rates at least double that of previously reported typically-developing populations. Additionally, sleep problems measured were persistent over time, showing no alleviation one year later. Finally, the primary predictor for sleep problems across domains and age-groups was daytime behavior problems. **Conclusion:** These findings lend importance to the assessment and active treatment of sleep problems across clinically-referred populations, particularly for those children with elevated daytime behavioral problems.

Abstract 20

Complementary and Alternative Medicine Use in Children with Cerebral Palsy

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Purpose: This study examined caregiver use of complementary and alternative medicine (CAM) to treat their child with cerebral palsy (CP). It also examined the types of CAM utilized and caregiver motivation for use of CAM. **Methods:** We mailed a self-report questionnaire to 584 caregivers of patients 5-18 years of age who had a billing code indicating a diagnosis of cerebral palsy and who received care in the Cerebral Palsy clinic at Children's Hospital Boston from September 2004-2006. The survey was adapted from previous CAM use surveys conducted at

our institution and underwent pre-testing with cognitive interviews of parent respondents. The survey addressed the following domains: type of CP, symptoms and medical care use related to CP, the child's level of physical function, modalities and frequencies of CAM used for the child, reasons for choosing CAM, satisfaction with CAM, and demographics. We used descriptive statistics to analyze our data. **Results:** After two mailings and a reminder postcard, our response rate was 44%. Respondents were 86% female, 76% Caucasian, 93% high school graduates, with 89% reporting household income greater than \$70,000. The children's mean age was 10.6 years. Overall, 95% of respondents reported using CAM for their child with CP. The most commonly-used modalities included exercise programs (70%), and other body-based therapies such as hippotherapy (47%), and aquatherapy (42%). Many families reported use of expressive environmental therapies (46%), spiritual practices (39%) and energy or healing therapies (32%). Most respondents (77%) reported using CAM to improve the overall well-being of their child, and 60-80% used CAM to improve specific motor symptoms such as spasticity and tone. In addition, more than 70% of families chose CAM because they were concerned about medication side effects, knew others who had benefited from CAM, liked to use a combination of CAM therapies and prescription medications, or therapies were recommended by friends or families of other children with cerebral palsy. CAM was recommended by physicians 39% of the time. **Conclusion:** CAM is commonly used in children with CP. Understanding the types of alternative therapies used and the motivation to use CAM in the CP population is essential for educating health care providers and enabling them to improve their care of children with CP. This study is one of the largest studies describing CAM use in the CP population.

Poster Session 1

Abstract 21

The Changing Landscape for International Adoption and Its Impact on U.S. Families

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Purpose: International adoption was increasingly popular through 2006, but the number of children adopted from abroad declined dramatically in 2008. At the same time, both implementation of the Hague Convention on Adoption in the U.S. and new restrictions by several major sending countries occurred. Parents who may have previously chosen international adoption are now forced to consider a different range of options for expanding their family. To the best of our knowledge, this is the first study to analyze the impact of the Hague Convention and the changing policies of sending countries on U.S. families seeking to adopt. **Methods:** This was a qualitative study of 8 prospective and 14 adoptive parents in the greater Boston area who completed a home study for an international adoption between 2006 and 2009. We conducted in-depth qualitative interviews to elicit the experiences of parents during their adoption process and factors that impacted their decision-making. We used open coding and thematic analysis to investigate relationships among themes. In order to triangulate

our parent interviews, we interviewed adoption experts and agencies for supplemental information about adoption trends. **Results:** We interviewed 22 parents, 6 experts, and 3 agency representatives. Parents based country choice on processing speed, affinity for the culture, and perception of child health. Common obstacles to adoption included bureaucracy and redundant paperwork, rule changes mid-process, agency turnover, inconsistent inter-agency standards, and ineffective communication from agencies. Many families were willing to consider children with special needs but felt unprepared due to insufficient preparation time and resources. Families were more likely to wait for the current adoption if they already had children, had already invested substantial time and money, felt affinity for the country's culture, or felt they were ineligible for other options. More than half our participants would recommend international adoption. **Conclusion:** Families described increased bureaucracy following implementation of the Hague Convention, limited choices due to new restrictions by birth countries, and continued agency variability. For parents, the decision to wait or explore other options was shaped by their previous parenting experience, cultural affinity, and investment in international adoption.

Abstract 22

Intersections Between Risk Perception and Health Risk Behavior Among Adolescents: The Adolescent Invincibility Tool

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Purpose: Health risk behaviors represent an area of significant health concern for adolescents. Measures capable of distinguishing between teens likely to participate in risky activities versus those likely to engage in protective health behaviors have the potential to aid providers in identifying at-risk teens and subsequently preventing negative health consequences. The current project aimed to explore the factor structure and predictive validity of a new measure of adolescent risk perception. **Methods:** Participants (215 adolescents, mean age=16.2, 61% male, 44% European American) completed the Adolescent Invincibility Tool, a questionnaire designed to assess risk perception, and the Youth Risk Behavior Survey, a measure of recent health risk behavior. **Results:** Principal Component Analysis yielded a four-factor solution of the AIT: Thrill Seeking (i.e., enjoyment from taking risks), Invulnerability (i.e., perceived susceptibility to harm), Nonconformity (i.e., desire for independence/individuality) and Perceived Control (i.e., beliefs regarding ability to manage consequences of risk). Regression analyses indicated that, after controlling for demographic characteristics, risk perception predicted a significant proportion of the variance in substance use and risky sexual behavior. However, gender was the only significant predictor of obesity risk. **Conclusion:** Results suggest that the AIT is comprised of four factors, corresponding to discrete aspects of risk perception, with utility in predicting particular forms of health risk behavior. Associations between types of risk perception and health behavior were complex, suggesting that simplistic measurement of risk perception is not appropriate. Findings support a model that categorizes perception into specific factors, rather than use of a global measure. Study findings also suggest that the AIT may be a viable new measure for identifying adolescents at risk for negative health outcomes. Future research should continue to delineate associations between particular aspects of risk

perception and risk behavior, explore potential mediating variables, and identify protective factors.

Abstract 23

The Parent-Child Collaborative Decision Making Instrument

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Purpose: Parent-child collaborative decision making (CDM) has been identified as a potentially important precursor to full decision making independence. The primary aim of this study was to develop a measure of CDM for the management of childhood chronic illness. Preliminary analyses of the first 100 participants are presented here. **Methods:** Participants included youth (8-19 years) with type 1 diabetes, cystic fibrosis, or asthma and their parents. Items for the Collaborative Decision Making Instrument (CDMI) were generated from a literature review and qualitative study. Participants also completed measures of child behavioral functioning, parent autonomy support, and family communication. **Results:** A principal components analysis of the Parent Version of the CDMI yielded an 18-item, 5-factor scale, explaining 67% of the variance in the correlation matrix. Communalities were in the moderate to high range (.51-.82); alphas ranged from .60 to .84. Item-subscale correlations ranged from .61 to .89. Older child age was associated with lower Parent Express Information/Opinion ($r = -.28, p < .01$) and higher Child Express Information/Opinion ($r = .20, p = .05$). More child attention problems were associated with higher Parent Express Information/Opinion ($r = .27, p < .01$). More child depressive symptoms were associated with lower Child Seek Information/Opinion ($r = -.21, p < .05$). Higher positive family communication was associated with higher Child Seek Information/Opinion ($r = .20, p < .05$ and $r = .28, p < .04$). Analyses suggested that aspects of CDM are associated with treatment adherence and adolescent decision-making competence. Preliminary testing of the Child Version of the CDMI was also promising. **Conclusion:** These findings suggest that the CDMI has a robust factor structure, adequate psychometric properties, and preliminary construct validity. Various child- and family-level variables were associated with CDM. The final version of the instrument will be used in longitudinal research to inform questions about developmental mechanisms underlying changes in CDM, predictors and outcomes of CDM, and how health care providers can facilitate the transition to independence for chronic illness management.

Abstract 24

The Utility of Universal Developmental Screening

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Purpose: To explore the clinical utility of formal developmental screening at 9 & 18 month well child visits & describe Early Intervention (EI) referral patterns using screening tools or developmental surveillance (DS). **Methods:** Convenience sample from 2 pediatric offices. Office 1(O1) uses the PEDS. Office 2 (O2) uses the ASQ. Retrospective chart review from 9-18 months. **Results:** In total, 117 charts reviewed in O1; 106 reviewed in O2. O1: 76 (65%) completed PEDS

at 9 months. 22 screens (29%) were positive. No subjects with positive screens referred to EI at 9 months. By 18 months, 6 w/positive 9-month screens were referred (9-month screen false positive rate=73%). At 18 months only 32% (n=34) of charts had completed screens. 20 (59%) were positive; 5 referred to EI (75% false positive). 100% of referrals identified by DS also. O2: 54 (51%) completed ASQs at 9 months. 3 screens(6%) were positive. No subjects with a positive screen referred to EI by 18 months. At 18 months, only 5% (n=6) of charts had completed screens. 3 screens (50%) were positive. None were referred to EI (100% screening false positive). Five(5%) children referred to EI through DS by 18 months. In total, 15% of the sample in O1 and 14% of the sample in O2 were referred to EI by 18 months. **Conclusion:** Screens not completed consistently. Even when screening results are available, pediatricians use clinical judgment more often to make EI referrals. Referral at 9 months is rare. Screening identifies more children for EI referral than DS but has very high false positive rates. When children identified by DS are combined with those who have known concerns (e.g. prematurity), EI referral rates in both offices match expected percentages of children with developmental concerns in the general population.

Abstract 25

The Effect of Retinopathy of Prematurity on the Academic Outcome of Very Low Birth Weight Children at Age 12 in Mainstream Schools in Singapore

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Purpose: To determine the effect of Stage 1-3 Retinopathy of Prematurity (ROP) on the results of a state examination at age 12, in children born with very low birth weight (VLBW) of less than 1500g, who had pursued a mainstream curriculum. **Methods:** Parents of VLBW infants born between 1990 and 1992 were interviewed by telephone for the results of the Primary School Leaving Examination, a state examination for all mainstream students at age 12. ROP data were obtained prospectively. 4 groups were analysed: group 1-no ROP, group 2-ROP of any grade, Group 3-no ROP/stage 1-2 ROP, Group 4 stage 3 ROP. 4 subjects were analysed: English Language, Mathematics, Science and a second language, as well as the total examination score. Results were analysed by student's t-test and Fisher's exact test, using SPSS version 14. Children with severe visual impairment or other neurodevelopmental disabilities who were in special schools were not part of this study cohort. All children were screened for myopia at 7 and 12 years. **Results:** ROP status and full examination results were known in 84 (82.4%) of 102 children pursuing a mainstream curriculum. Mean birth weight and gestation were 1127.0 ± 222.0 g and 30.2 ± 2.9 weeks respectively. 21(25%) had ROP (6-stage 3, 11-stage 2, 4-stage 1). The mean WISC-III score of this cohort at age 8 was 100.4 ± 11.8 . There were no significant differences in the WISC-III scores between groups 1 and 2, and between groups 3 and 4. Between groups 1 and 2, there were no significant differences between the means of the total scores or the percentages of children who scored >50% or 75% of the total marks in each of the 4 subjects. 5 of 6 children in group 4 failed Mathematics compared to 31% of those in group 3(p=0.017). There were no differences between groups 3 and 4 in the total examination scores or in the marks obtained for the other subjects. **Conclusion:** Children with Stage 3 ROP may

have an increased risk of difficulty in Mathematics. There were no effects of ROP on language and science or in total examination scores.

Abstract 26

Effects of Pediatric Cancer on Friendship Homophily and Social Acceptance

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Purpose: Children with cancer may be at risk for problems with peers as a result of physical symptoms or treatments related to their condition (e.g., missed school, lack of participation in extracurricular activities, fatigue). Children generally associate with peers who have similar social characteristics (e.g., aggressive children befriend other aggressive children). By interrupting participation in social activities, cancer may disrupt typical patterns of friendship. This study was designed to examine differences in peer affiliation patterns and social acceptance between children with cancer and non-chronically ill, behaviorally similar peers. We expected that the friendships of children with cancer would be less homophilious with regard to social behavior and social reputation, relative to the friendships of non-chronically ill children, and that children with cancer would be less socially accepted. **Methods:** Children with cancer (N= 99) ages 8-15, undergoing chemotherapy for a non-primary central nervous system malignancy, were identified from medical records at a large, Midwestern medical center. For each of these children, data were collected in their classroom from peers (N= 2,302) using widely used measures of social reputation, friendship, and likability. Non-chronically ill comparison peers were classmates of children with cancer, matched on race, gender, behavioral reputation, and age. **Results:** Friendship similarity was generally equivalent across groups (cancer and comparisons), regardless of sex or age, with one exception: children with cancer were more similar to their friends with respect to sensitive-isolated social behavior, relative to comparisons. Although children with cancer and comparisons were similarly well-liked by peers, children with cancer received fewer friend nominations and had fewer mutual friendships. Together, these findings lend empirical support to a sentiment often expressed by children regarding cancer's impact on friendship: "I found out who my real friends are," meaning that children lose some of their more distal friends and grow closer to the friends that 'stick with them' during the course of their illness. **Conclusion:** Cancer may be particularly disruptive to less homophilious friendships. Given the long-term consequences of problematic peer relations, maintaining children's social ties during treatment could be a fertile area of focus for clinical care of children with cancer.

Abstract 27

Revision of a Parent-Completed Developmental Screening Questionnaire: Ages and Stages 3rd Edition

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Purpose: Collecting a broad and diverse standardization sample and conducting psychometric studies on the Ages & Stages Questionnaires, 3rd edition (ASQ-3), were overall study goals. 18,000 questionnaires were collected in order to determine new screening cutoff scores and study validity and reliability. **Methods:** First, the ASQ-2 was revised, including development of two additional questionnaire intervals (i.e., 2 and 9 month). Minor modifications were made to the existing questionnaires, such as revising wording for improved clarity and adding examples for broader cultural acceptability. Second, parents completed the revised ASQ-3, using both traditional paper/pencil and on-line formats. Third, an additional sample of parents/children was recruited for validity and reliability studies. **Results:** A sample of 18572 questionnaires was gathered on children between the ages of 1 to 66 months; 9733 paper questionnaires were collected as well as 8839 web-completed questionnaires. Concurrent validity, measured by comparing the classification of children based on their performance on a standardized test or eligibility assessment with their classification based on their performance on ASQ, ranged from .76 to 1.00 across intervals. Sensitivity overall was .86 and specificity .86. Reliability findings included coefficient alpha ranging from .51-.87; interrater reliability agreement between parents and professionals was .93 on questionnaire classifications (i.e., risk/typical) and test-retest reliability based on questionnaire classifications was .92. **Conclusion:** Data on the ASQ-3 (Squires & Bricker, 2009) suggest a valid and reliable questionnaire system, with an overall normative sample of 15,000 children representing all 50 US states. Because of its strong psychometric base as well as flexibility and cost effectiveness, the ASQ-3 should continue to be a viable, standardized developmental screening measure to assist in early identification efforts. Future validity and reliability studies with diverse populations are needed to improve the psychometric base.

Abstract 28

Developmental Screening in China: Use of a Parent-Completed Screening Test

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Purpose: As part of an effort to improve the outcomes of individuals with disabilities, the Shanghai government has launched a campaign to screen at least 95% of newborns. To meet this goal, the Ages & Stages Questionnaires (ASQ) was translated into Chinese and used in pediatric community healthy care centers in Shanghai. Screening cutoff scores were determined and reliability, validity, and utility were studied. **Methods:** The Ages and Stages Questionnaire system was translated into standard Simplified Chinese by developmental and language experts, back translated into English, and revised after field testing. The Ages & Stages Questionnaires-Chinese (ASQ-C) was then given to over 8000 children from 3 to 60 months of age when they came for their pediatric well child visits. Third, a random sample of 483 children/caregivers was asked to participate in convergent validity and reliability studies, using the Bayley Scales of Infant Development, 2nd Edition, and the Denver-II, Chinese version.

Results: Cutoff points were established for the ASQ-C, using a 2 SD cutoff score by domain across questionnaires. Inter rater agreement between ASQ-C completed by 112 caregivers and a professional assessor was .94. Test-retest reliability for 175 caregivers who completed 2 ASQ-C at a one-month interval was .94. Cronbach's coefficient alpha ranged from .37-79. Convergent validity, measuring agreement with BSID-II and Denver II outcome classifications (i.e., risk, typical) and ASQ-C outcomes (i.e., risk, typical), ranged from .57 to .94. Utility surveys indicated pediatric providers felt they learned about typical development when helping parents/caregivers complete the ASQ-C and that the model of completing the ASQ-C together with families worked well. Additionally, parents/caregivers felt that the completion of ASQ-C was valuable and they were excited to do related play activities at home. **Conclusion:** The ASQ-C was translated with cultural appropriateness in mind and functioned as a valid and reliable caregiver-completed screening test in this pilot evaluation in Shanghai. A larger and more diverse Chinese sample from other cities and rural areas is needed to further confirm these results. Low cost prevention and intervention activities will also be developed to improve the skills of the young children in China with developmental concerns and delays.

Abstract 29

A Training Model for the Diagnosis of Autism in Community Pediatric Practice

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Purpose: Early screening and diagnosis of autism spectrum disorders (ASD) currently represents a critical public health and clinical practice issue. Historically, waits for diagnostic services are quite lengthy and hinder the start of early intervention services thought to be crucial for optimizing functional developmental outcomes for children and their families. In this study we attempted to develop a training program designed to help pediatricians identify and diagnose young children with ASD in the context of traditional community practice settings with a very time-limited framework. **Methods:** 5 community pediatricians participated in an intensive training (i.e., use of MCHAT, Screening Tool for Autism in Two-year-olds (STAT), and brief diagnostic interview), conducted specialized 1-hour ASD diagnostic evaluations within their own practices, and then referred a consecutive series of children to a traditional medical center diagnostic clinic for an independent assessment of ASD. **Results:** Of the 5 community physicians attending the training, 4 referred patients for subsequent independent evaluation. 21 of 25 referrals completed the independent evaluation process (child age M = 30.48, SD = 3.74). An ASD diagnosis was confirmed based on independent evaluation in 14 out of 19 cases (74%). Of the 2 children (10%) referred without an ASD-risk classification, one child received a diagnosis of ASD subsequent to independent evaluation and one did not (50% agreement). Overall independent diagnostic evaluation was in agreement with initial pediatrician classification in 15 out of 21 cases (71%). Agreement varied greatly between the four referring pediatricians: 1/1 = 100%; 6/7 = 86%; 4/6 = 67%; 4/7 = 57%. **Conclusion:** The development of training methods for the classification of ASD within traditional community based pediatric practice holds promise. Specifically, introduction of basic interactive screening tools into a pediatric consultative model

may be able to successfully classify young children in a timely fashion to appropriate categories of risk. Such models must take into account the reality that significant revision and condensation of gold-standard assessment methodologies will undoubtedly contribute to more errors in definitive classification.

Abstract 30

Comparison of Ages and Stages (ASQ) and the Fluharty in a Low Income Population

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Purpose: Evaluate sensitivity and specificity of the Ages and Stages Questionnaire (ASQ) in identifying language delay among 3-5yo children in subsidized daycare (<150% federal poverty line), with the Fluharty as the gold standard. **Methods:** Data was collected from Oct 2004 to June 2005 from the 14 quality centers in Duval County, FL. Centers served mainly low-income children and were willing to participate in a quality improvement program. 570 children ages 3-5yo were indentified at the centers. 70% of parents returned consent forms, including 102 children in subsidized child care and 200 not in subsidized programs (55% <165% federal poverty line). 76% of participants received both ASQ (completed by childcare provider or parent) and the Fluharty Speech Assessment (completed by Speech Pathologist). Data was analyzed to determine the sensitivity/specificity of the ASQ to identify speech delays in this low income population. **Results:** Among the 302 children (48.3% male, 43.8% white, 55.3% low income), 37.1% failed the Fluharty while only 26.8% failed the ASQ. 71 children (23.5%) passed the ASQ but failed the Fluharty. 50% of children passed both assessments. Children were more likely to pass both assessments if they were not Black, not in subsidized childcare, not low income, and had health insurance. In specific areas of the ASQ relating to speech delays, 92 children (61%) passed ASQ specific speech and language screenings but failed the Fluharty. Overall sensitivity of the ASQ was 51% for all children and 46% for children in subsidized day care. The specificity of the ASQ was 68% for all children and 69% for children in subsidized day care. **Conclusion:** In a mainly poor inner city preschool cohort, sensitivity of ASQ was low. The Fluharty (completed by a SL/P) is a more sensitive for speech delays in this group. Screening tests can't be too sensitive, but the ASQ may miss too many milder language delays which are associated with risk of reading problems and school failure. Costs of implementing the Fluharty must be weighed against the long-term societal benefits of early detection of speech/language delays and early reading supports in this population.

Abstract 31

Socio-emotional Development after Extreme Prematurity in Children without Cognitive or Motor Disability

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Purpose: To determine if children born after extreme prematurity who have normal cognitive and motor development experience delays in socio-emotional regulation. **Methods:** The ELGAN study enrolled 1506 babies born before the 28th postmenstrual week at 14 US centers during 2002-2004 and collected maternal and neonatal data, protocol cranial ultrasounds and developmental follow-up. Of 1200 survivors at age 2 years, 904 were assessed with the Bayley Behavioral Rating Scale (BRS). A neurological examination, the Bayley Scales of Infant Development, 2nd edition Mental Development Index (MDI) and Psychomotor Development index (PDI), the Child Behavior Checklist and the Modified Checklist for Autism in Toddlers were also completed. **Results:** Among children with normal MDI and PDI (≥ 70), those with MDI or PDI 70-84 were about twice as likely to have abnormal scores on the BRS, as compared to those with MDI or PDI above 84 (Table). **Conclusion:** Abnormal BRS scores are associated with developmental delays identified with the MDI and PDI. However, even among infants without such delays, 16-33% have delayed development of regulatory competencies at age 2 years.

Relationship between BRS and MDI/PDI. These are column percents.

BRS Category	BRS Score	MDI<70	MDI 70-84	MDI 85+	PDI <70	PDI 70-84	PDI 85+	Row N
Orien/Engage	Non-Optimal	26	15	7	26	14	7	124
	Questionable	21	12	9	17	15	10	115
	WNL	53	73	85	58	71	84	649
Emot Reg	Non-Optimal	28	13	6	23	16	6	120
	Questionable	26	21	10	25	17	13	154
	WNL	46	66	84	52	68	81	614
Column N		238	225	425	278	180	430	

Abstract 32

Does Autoimmune Disease in Mothers with the Premutation of Fragile X Increase Risk of Autism Spectrum Disorders in Children?

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Purpose: Increased incidence of autoimmune diseases (AD) in families of children with Autism Spectrum Disorders (ASD) has been reported. Why autism occurs in some individuals with fragile X syndrome (FXS), but not all, is not known. In carrier mothers, there is an increased risk for AD. We therefore examined whether or not AD in mothers with the premutation of fragile X may increase the chance of having a child with ASD. **Methods:** Participants were enrolled in a

study of genotype-phenotype relationships in families affected by FXS. Included in this analysis were 36 carrier mothers (of 53 children) with AD and 36 carrier mothers (of 48 children) without AD. AD was diagnosed by a physician. ASD was confirmed by at least one of these measures, including ADOS, ADI-R and DSM IV. **Results:** The three most common AD in carrier mothers were thyroid problems (63.9%), fibromyalgia (30.6%) and multiple sclerosis (13.9%). Child's mean age, sex and type of the fragile X mutation between both groups of mothers with and without AD were not significantly different. Overall cognitive ability in both groups of children was in a mild range of intellectual disabilities. 35 of 53 children (66%) who have mothers with AD were diagnosed with autism (39.6%) and ASD (26.4%), compared to 25 of 48 children (52.1%) whose mothers never had AD met the criteria for autism (27.1%) and ASD (25%) (OR = 1.79 [0.80, 3.99], P = 0.15). Interestingly, children whose mothers had AD were likely to have higher rate of seizures (23.1% VS 4.2%, OR = 6.9 [1.46, 32.7], P = 0.006) and aggression (56% VS 28.3%, OR = 3.23 [1.38, 7.56], P = 0.006) when compared to the children whose mothers never had AD. **Conclusion:** There was no significant association between AD in carrier mothers and presence of ASD in their children. However, seizures and aggression are significantly increased in these children suggesting an additive effect in utero with exposure to AD or perhaps an additive genetic effect may lead to these problems.

Abstract 33

Computerized Working Memory Training with Survivors of Childhood Cancer

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Purpose: Neurocognitive late-effects in survivors of CNS-impacting childhood cancer are well-established in the literature. Specifically, deficits in attention and working memory appear to impede survivors ability to acquire new information at developmentally-appropriate rates. The present study evaluated a computerized, home-based working memory training program known as CogMedRM with CNS-impacted childhood cancer survivors. This program was developed for use with children with ADHD. It was hypothesized that participants who successfully completed the intervention would show increases in attention and working memory at the end of the intervention period as compared to children who completed a low-dose version of the program. **Methods:** 24 survivors of ALL and brain tumors aged 8-16 years with documented attention and/or working memory deficits participated in a randomized, placebo-controlled trial of a 25-session computerized, home-based working memory intervention. Survivors completed measures of intelligence (WASI), memory (WRAML2), attention (CPT-II, ConnersRating Scales), and quality of life (PedsQL") at baseline. Memory, attention and quality of life measures were repeated post-treatment (and 3-months later). Feasibility and acceptability data was collected after 12 and 25 sessions. **Results:** Children in both conditions demonstrated a high level of compliance with treatment, with 92% completing training. Additionally, parents and children reported high levels of feasibility and acceptability. Children who completed the intervention (n=12) demonstrated significant decreases in parent-rated inattention and increases in attention and working memory skills as compared to the

children who completed the placebo program (n=12). However, no significant differences in parent- or child-reported quality of life between groups were found. **Conclusion:** This pilot study of a home-based, computerized cognitive-training intervention provides evidence of the feasibility, acceptability, and preliminary efficacy of a novel approach to addressing neurocognitive late effects in pediatric cancer survivors. The intervention is convenient, cost-effective, and enjoyable for participants, and has the potential to be widely-disseminated among a survivor population.

Abstract 34

Adolescent Suicidality in Males and Females: A Longitudinal Investigation of Suicide Risk Predictors

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Purpose: Each year, 1 in 5 adolescents contemplates suicide, and 5% to 8% attempt suicide. Suicide was the 3rd-leading cause of death among youth 15 - 19 in 2005. Pathways of suicidality appear multi-determined by individual, social and familial risk factors, and may also be gender-specific. Males are almost 4 times more likely to complete suicide, while females are 2 - 9 times more likely to contemplate or attempt suicide. This longitudinal investigation compared suicidal and non-suicidal youth on the differential impact of risks over time. Given the prevalence of suicidality, it is important for frontline practitioners to be aware of gender-specific risk constellations. **Methods:** Participants were recruited from 3 ethnically diverse schools for a longitudinal, family-centered intervention study targeting adolescent behavior problems (see Connell et al., 2007). This study represents risk data collected in the 11th grade (n = 794; 53% male; 43% Caucasian) and its impact on suicidality 2 years later (n = 723). Risks assessed included depressive symptoms, antisocial behaviors, substance use, deviant peer affiliation, and family relationships. Logistic regression analyses identified risk impact on suicidality (i.e., ideation, plans, & attempts) 2 years later. **Results:** Suicidality was reported by 11% of males and females. Predictors of male suicidality included depressive symptoms (B=1.16, S.E.=.32, p<.01) and antisocial behaviors (B=1.07, S.E.=.52, p<.05), with a trend for past suicidal ideation under stress (p=.08). Among females, predictors included lack of intervention (B=.93, S.E.=.45, p<.05) and having deviant peers (B=.58, S.E.=.23, p<.05), with trends for depressive symptoms (p=.06) and past suicidal ideation under stress (p=.09). Ethnicity, substance use, and family relationships were not significant. **Conclusion:** The pathways of suicidality over time may differ based on sex. While both groups appear somewhat affected by past suicidal ideation under stress, males appear more affected by depression and impulsive-aggressive behavior, while females appear more affected by deviant peers and the absence of psychological intervention.

Abstract 35

Retrospective Case Studies on Childhood Disintegrative Disorder: A Report of the Diagnostic Features and Treatment Methods

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Purpose: Childhood disintegrative disorder (CDD) is a rare pervasive developmental disorder characterized by marked deterioration of developmental and behavioral functioning following a period of at least two years of generally normal development. CDD was the first diagnostic concept to be described in the literature that accounted for the severe and pervasive disorders of development in children; yet, it remains the least understood. The lack of knowledge could be due to a number of factors including the profound rarity of this disorder, the likelihood that CDD has been largely underdiagnosed, and the difficulty in properly identifying CDD apart from autism. Due to the limited number of case reports currently available in the literature, further research into CDD is warranted. The intent of this presentation is to review the current diagnostic description of childhood disintegrative disorder (CDD) and present the developmental, behavioral, psychosocial, and medical histories of nine children who have been diagnosed with this rare disorder at a major Midwestern medical facility. **Methods:** A medical index retrieval system was used to locate the medical record of any patient whose record was indicative of the presence of CDD. The search parameters included all possible diagnostic codes for CDD. The complete medical record for each patient was reviewed and indicated that a final positive diagnosis of CDD was made in nine of the 12 cases. **Results:** For each of the nine cases, all relevant information was abstracted from the child's medical record. Detailed and comprehensive report of the developmental, behavioral, psychosocial, and medical histories and treatment recommendations will be presented from two of the nine cases. Summary reports on the available information from the remaining seven cases will be presented. **Conclusion:** The addition of these nine case reports to the existing literature will have a major influence on the way that CDD is conceptualized and subsequently treated.

Abstract 36

Further Validation of the Pediatric Symptom Checklist with a Chronically Ill Pediatric Population

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Purpose: The purpose of the current study was to replicate/extend the literature assessing the psychometric properties of the Pediatric Symptom Checklist (PSC) as a screening tool for child behavioral symptoms. **Methods:** Parents of children (N = 393) diagnosed with either Type I diabetes or sickle cell disease (SCD) attending a routine medical appointment were invited to participate. Parents completed a demographic questionnaire, the Child Behavior Checklist (CBCL) and the PSC. Families were invited to complete the PSC again 1 month later. Half of the children had been diagnosed with Type I diabetes (52%) or were female (50%). The children ranged from 6 to 18 years of age; the majority was African-American (75%) and the remaining was Caucasian. The average score for the PSC was 10.37 (SD = 9.64) and the T-scores across all of the CBCL subscales fell within the non-clinical range. **Results:** An exploratory factor analysis of the PSC was completed using an oblique (promax) rotation. Based on the results of the scree

tests and eigenvalues greater than 1, a 4 factor solution accounting for 33% of the variance was examined. Item loadings greater than .30 were considered to be significant. The 4 factors included internalizing, externalizing, attention, and illness symptoms. Correlational analyses revealed a significant relation between the two PSC scores ($r = .70$, $p < .0001$). Furthermore, the four factors of the PSC were significantly related to all of the empirically derived subscales of the CBCL. The PSC internalizing factor had the highest correlation with the CBCL anxious-depression and withdrawn-depression scales ($r_s = .76-.78$, $p < .0001$) and the PSC externalizing scale had the highest correlations with the CBCL rule-breaking and aggressive behavior scales ($r_s = .67-.75$, $p < .0001$). The PSC attention problems factor and the CBCL attention problems scale ($r = .80$, $p < .0001$) and the PSC illness factor and the CBCL somatic complaints scale ($r = .70$, $p < .0001$) had the highest correlations. **Conclusion:** The findings from the present study suggest that the PSC has good construct validity, reliability and stability and may be useful for use in pediatric medical settings for identifying children who may be in need of further behavioral services.

Abstract 37

Can Minocycline be a Targeted Treatment of Fragile X Syndrome?

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Purpose: Minocycline can normalize the synaptic connections in the fragile X knock out mouse by lowering matrix metalloproteinase-9 (MMP-9) levels. This is a preliminary survey to see the benefits and the side effects of minocycline treatment in children and adults with fragile X syndrome (FXS). **Methods:** We surveyed 50 patients with FXS who received minocycline treatment for at least 2 weeks. Changes in language, academic abilities, attention, behaviors, physical features and adverse effects of minocycline were assessed by a parent questionnaire. **Results:** The mean duration of minocycline treatment was 3.6 ± 4.6 months. Of 50 families who were interviewed regarding treatment of their children, parents and/ or adult patients reported that 74 % had improvement in at least one cognitive/behavioral area including language (54%), attention (50%), social communication (44%), academic abilities (40%) and anxiety (30%). However, we also found 14% of patients became more hyperactive, 12% demonstrated an increase in moodiness and 12% developed sleep disturbances after minocycline treatment. There were additional side effects including loss of appetite (15.1%), gastrointestinal upset (11.3%), diarrhea (7.5%) and headache (7.5%). **Conclusion:** These findings suggest that there may be benefits from minocycline treatment in FXS especially in younger children. Controlled trials are needed to prove the efficacy of minocycline in those with FXS.

Abstract 38

Child Rearing Practices of Parents of Children with Cancer and Parents of Comparison Children: Perspectives of Parents and Professionals

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Purpose: The number of children diagnosed with cancer each year in the U.S. is increasing; the 5-year survival rate has improved dramatically. Parental reactions to their child's diagnosis could result in alterations of their child-rearing practices, although these changes may not be in the children's best interests as they become long-term survivors. The purpose of this study was to obtain predictions from experts in pediatric oncology about how pediatric cancer impacts child-rearing, and to determine whether parents of children with cancer report similar challenges. **Methods:** The Child-Rearing Practices Report (CRPR) was given to 11 professionals (4 MDs, 1 PNP, 2 LISW, 3PhD) with at least 2 years of experience in pediatric oncology. Data were also obtained from 94 mothers and 67 fathers of children with cancer (n = 98; 52 ALL; 29 lymphomas; 17 solid tumors), and 98 mothers and 75 fathers of comparison children (n = 98). Children with cancer were between 7-16 years (M = 12.01) and 34 of the children with cancer were female (35%). Comparison peers were the same gender/race, and closest date of birth and recruited one-to-one from each classroom of the child with cancer. All parent data were obtained in the home while children with cancer were in first remission on chemotherapy. **Results:** 8 of 11 experts predicted that 14 of the 91 CRPR items would be different for parents of children with cancer in the following areas: over-involvement, discipline, worries about the child, and nutritional concerns. Results from parents showed some differences from comparison parents, but not full agreement with the experts. Fathers of children with cancer rated 4 of the 14 predicted items differently than comparison fathers; mothers of children with cancer rated 6 of the 14 predicted items differently than comparison mothers. Mothers and fathers of children with cancer shared three concerns: worry about their child's health, tend to spoil child, and don't want child seen as different. **Conclusion:** Findings suggest differences in the impact of a child's cancer on child rearing for mothers and fathers with mothers showing more differences from comparison mothers. Over protective parenting is a real concern.

Abstract 39

"My IBD Book" : A Brief Drawing Intervention for Children Hospitalized with Inflammatory Bowel Disease

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Purpose: This study examines the effect of a brief guided drawing intervention on the attitude towards illness and hospitalization experience of children with Inflammatory Bowel Disease (IBD). **Methods:** Children aged 8-18 years old with IBD admitted to a pediatric hospital were given the opportunity to participate in a randomized controlled trial of a brief drawing intervention. Participants were randomized to receive either the brief art intervention or to be in the control group and receive usual hospital art care (child life, visiting artists, etc). The brief art intervention consisted of 2 sessions of 15 minutes each where a research assistant gave each participant drawing prompts related to IBD, including "draw IBD" and "draw your medications". Data was collected at 3 time points: study entry, at the end of hospitalization,

and 1 month after hospitalization. At the end of hospitalization, participants and parents completed a visual analog rating scale of their experience with art in the hospital. At each of the 3 time points, participants completed the Child Attitude Towards Illness Scale, a 13-item standardized measure, utilizing a 5 point likert scale. **Results:** There were 16 participants: mean age of 15.5, 12 female, 4 male, 8 with Crohn's, 8 with Ulcerative Colitis, 9 in the control and 7 in the drawing group. The drawing group had a significant improvement in attitude towards illness from 2.8 pre-intervention to 3.2 one month post-intervention ($p < 0.01$). The control group score remained 3.1 at both time points. The drawing group reported a significantly greater amount of art in the hospital, usefulness of art in the hospital, and fun with art in the hospital as compared to the control group ($p < 0.01$). There was a trend towards the intervention group reporting being less bored in the hospital and feeling like their parents and doctors better understood how they viewed their illness. **Conclusion:** A brief 30-minute, 2 session art intervention can improve the hospital experience and attitude towards illness of children hospitalized for IBD. In addition, there is a trend towards participation leading to children believing that their doctors and parents better understand their perspective on their illness.

Abstract 40

Promoting Developmental Screening Through Interactive Community-Based Education

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Purpose: To evaluate the impact of a community-based educational intervention on healthcare provider knowledge of developmental surveillance and screening and community resources, and to assess factors related to provider screening practices **Methods:** Healthcare providers (i.e, physicians, nurse practitioners, public health nurses) (N=117) of children age 0-5 attended an educational workshop. Learning objectives addressed the 2006 AAP policy statement on developmental screening and referral to community resources. Content was delivered using an interactive, case-based/problem-based learning (PBL) format. Provider knowledge was assessed pre-/post-intervention, with items grouped into 3 content categories: surveillance, screening, and resources. Pre-/post- responses, coded as correct or incorrect, were analyzed with Wilcoxon signed-rank test. Predictors of provider screening were assessed with logistic regression. **Results:** Providers improved their content knowledge across all 3 categories. Providers were able to define surveillance and screening and appropriate ages to conduct both, but were less able to provide indications for screening compared to surveillance. Providers increased their knowledge of autism screens and ages of children served by Early Intervention (EI) services, school districts, and a state-based program for children with cerebral palsy and other neuromuscular conditions (CCS-MTP). Providers showed improvement in their understanding of CCS-MTP, but showed relatively little improvement from high baseline rates of >80% correct responses related to understanding of EI and school district services. Initial regression analyses suggested that provider and practice factors did not influence frequency of screening. **Conclusion:** Interactive, case-based learning is an effective and innovative method for increasing provider knowledge of developmental surveillance, screening, and resources.

Further study is needed to determine the degree to which this type of intervention leads to practice change.

Abstract 41

The Role of Parenting Capacity Variables and Health-Related Quality of Life in Pediatric Cancer

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Purpose: To assess the relationship between parenting capacity variables, including parental overprotection, perceived child vulnerability, and parenting stress, and parent-proxy report of health-related quality of life in pediatric cancer. **Methods:** Participants were 89 parents of children, ages two to 16 ($M = 6.5$ years, 57% male, 80.9% Caucasian), who were diagnosed with pediatric cancer. Parent participants completed a demographic form, the parent-proxy report of the Pediatric Quality of Life Inventory 3.0 Cancer Module (PedsQL), Parent Protection Scale (PPS), Child Vulnerability Scale (CVS), and Parenting Stress Index/Short Form (PSI/SF). A medical chart review was also conducted. Participants were recruited while attending outpatient appointments at the cancer center of a midwestern childrens hospital. **Results:** Hierarchical regressions indicate that each of the parenting capacity variables was independently related to parent-proxy report of health-related quality of life. When the three parenting capacity variables were entered simultaneously into a single hierarchical regression, the results of the overall model were significant, $F(3, 81) = 7.577$, $p < .001$, and perceived child vulnerability emerged as a significant predictor of parent-proxy report of health-related quality of life, $t(84) = -2.826$, $p = .006$. **Conclusion:** Parental overprotection, perceived child vulnerability, and parenting stress were found to be related to health-related quality of life in a pediatric cancer population. The findings support a transactional relationship between discrete parenting variables and disease-specific health-related quality of life in children with cancer.

Abstract 42

Psychological Distress in the Pediatric Obese Population

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Purpose: While the literature on adult obesity has focused on psychological correlates, such as the relationship between depression and obesity, little research exists on these relationships in the pediatric obese population. Thus, the purpose of this study was to examine the psychological profiles of participants in a pediatric obesity intervention program through parent and self report measures. **Methods:** Data from 53 participants (22 males, 31 females, mean age = 9.3, $SD = 1.2$) in a 12-week pediatric obesity intervention program were utilized in this study. The participants were predominantly Latino ($n = 44$), though a few were African-American ($n = 3$), Caucasian ($n = 3$), and other ($n = 1$). The participants psychological profiles were obtained at intake from the Behavior Assessment System for Children (BASC) self-report, BASC parent

report, and Child Depression Inventory (CDI). **Results:** Mean scores on the overall behavior scales were in the Average range on both the self and parent report forms (BASC-PRS Behavioral Symptoms Index mean T = 51.9, BASC-SRP Emotional Symptoms Index mean T = 49.2). Mean scores on the depression and anxiety scales were in the Average range as well (BASC-PRS Depression mean T = 51.3, BASC-SRP Depression T = 49.1; CDI Total T = 47.2, BASC-PRS Anxiety mean T = 50.8, BASC-SRP Anxiety T = 47.3) However, a significant percentage of children were noted to be clinically elevated on the depression and anxiety scales (13-25% depression, 10-19% anxiety). Paired samples t-tests comparing parent reports to self-reports indicated no significant differences between parent and self report on the depression or anxiety scales ($t = 1.067-1.763$, $p = 0.158-0.084$). **Conclusion:** The study results suggest that on average psychosocial difficulties were not a significant clinical issue for the majority of the participants. However, a considerable percentage of the participants did report experiencing clinically significant levels of depression and anxiety that needs to be addressed therapeutically. These results indicate that intervention programs need to screen participants for psychological distress and provide appropriate interventions. Given the small number of participants and the homogeneity in their cultural backgrounds, additional, more stringent, research is needed to determine whether the relationship between obesity and psychological distress noted in this study can be generalized to the larger pediatric obesity population.

Abstract 43

Assessing Parent Interest in a Spanish-Language Parenting Intervention Offered in a Primary Care Clinic.

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Purpose: Latino children living in the United States are at increased risk for Disruptive Behavior Disorders (DBD)(Coatsworth et al., 2002). The long-term costs of DBD are overwhelming (Foster, Jones, and the Conduct Problems Research Group, 2005), yet fewer than 25% of Latino individuals receive the mental health care they need (Alegria et al., 2007). Behavior disorders respond well to early childhood intervention (Lochman, 2000), yet many Latino children will not be identified as needing services until they enter the school system (Wood et al., 2005). Primary care clinics are emerging as innovative and effective settings for detecting and providing interventions for child behavior problems even before children begin school (Stancin et al., 2009). For this study, the Chicago Parenting Program (CPP), a validated behavioral parenting intervention, was introduced in a pediatric primary care clinic specializing in treating Latino patients. The outcome of this study focused on assessing desirability of and interest in the Spanish-based parenting intervention. **Methods:** For the purpose of this study, all Spanish-speaking parents of patients aged 24 months - 8 years, 11 months old were approached during their child's scheduled clinic visit and screened for participation. Twenty families were approached during a two month period and asked to complete a developmental screener. Any parents who endorsed concerns about their child(ren)'s behavior(s) were invited to participate in the Saturday morning, weekly, hour-long parenting sessions. **Results:** Sixteen (73%) parents endorsed concerns about their child(ren)'s behavior and of those parents who endorsed

concerns, 14 (88%) parents expressed interest in participating in the parenting sessions. Parents reported satisfaction with the Saturday morning time slot and the availability of child-care during the parenting sessions. **Conclusion:** These data support initial acceptability of a primary care-based, Spanish-language, parenting intervention. Current and future research is focused on assessing the feasibility and effectiveness of the parenting intervention in this clinic setting.

Abstract 46

Cancer-Related Stressors and Emotional Adjustment in Children with Cancer

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Purpose: The purpose of this study was to examine which cancer-related stressors most affect children with cancer, and to examine the relationship between stressors and emotional distress in these children. **Methods:** Children (10-18-years-old; N = 58) reported on cancer-related stressors they had experienced on the Pediatric Cancer version of the Response to Stress Questionnaire (RSQ). The RSQ includes 10 items rated on a scale from 1 (not at all) to 4 (very) based on how stressful they have been. Mothers (N = 57) and fathers (N = 28) also completed the RSQ about their children. Children completed the Youth Self-Report (YSR) and parents completed the Child Behavior Checklist (CBCL) about the child's emotional distress. **Results:** The percentage of children, mothers, and fathers that rated each stressor as (3) "somewhat" or (4) "very" stressful for the child ranged from 7.1% (father report) for "not understanding doctors" to 70.2% (mother report) for "not able to do things" and "sick from treatment." The most frequently endorsed stressors across informants included disruptions in daily functioning (not able to do things; hospital/clinic visits) and side effects of treatments (pain, feeling sick). Total scores were also calculated by summing the 10 items. T-tests compared child, mother, and father total scores. Mother reports of their children's stress were significantly higher than child reports ($t = -2.45, p < .05$); no other comparisons were significant. Correlations between total stressor scores and the Anxious-Depressed subscales of the YSR and mother and father CBCL indicated that child and mother reports of the child's stressors were significantly correlated with child and mother reports of child emotional distress (r 's ranged from .25 to .38, $p = .01$ to .06). **Conclusion:** The results provide some of the first detailed information on the types of stressors experienced by children with cancer and indicate that higher levels of cancer-related stress are related to higher levels of emotional distress in children.

Abstract 47

Verbal Working Memory and Sentence Comprehension in Preterm Children 9-16 Years Old

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Purpose: In typically developing children, verbal working memory (VWM) has been found to

play an important role in sentence comprehension and to predict overall language performance. A study on the effects of prematurity on VWM in preschool-age children found that preterm birth negatively affected both phonological working memory and grammatical ability, which were correlated with each other. We sought to determine whether poor VWM would persist into school-age and whether VWM would contribute to differences in sentence comprehension, after controlling for the effects of intelligence. **Methods:** We assessed VWM (CELF-4 Language Memory Index), Verbal and Performance IQ (WASI), and sentence comprehension (errors in a complex sentence-picture matching task) in 56 children (ages 9-16 years) born prematurely and 25 age- and SES-matched controls. Hierarchical multiple regression analysis was performed to examine relationships among VWM, sentence comprehension, Performance and Verbal IQ (introduced first), birthweight, SES, and sex. **Results:** On all measures, the preterm group performed lower than the comparison group. In models predicting VWM, Verbal IQ (Beta .56, $p < .001$) and birthweight (.21, $p < .05$) accounted for 64% of the variance. In the model predicting sentence comprehension errors, Performance IQ (-.44, $p < .01$) and birthweight (.28, $p < .05$) accounted for 43% of the variance. VWM approached significance in the second model (.28, $p = .089$). Other factors were not significant. **Conclusion:** In older school-age children born prematurely, birthweight, as the index of prematurity, contributed to variance in VWM and sentence comprehension over the contribution from intellectual ability. The association of VWM and sentence comprehension was weak. Future research will assess whether the degree of white matter and other neural injury from prematurity explains the effects of birthweight on VWM and sentence comprehension.

Abstract 50

Obesity in Children and Adolescents with Chronic Pain: Associations with Pain and Activity Limitations

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Purpose: Obesity is associated with depression and disability in adults with chronic pain, but less is known about obesity among youth with chronic pain. The purpose of this study was to 1) identify the prevalence of overweight and obesity in children and adolescents receiving treatment for chronic pain, and 2) examine associations between Body Mass Index (BMI), pain intensity, activity limitations, and other patient characteristics in this population. **Methods:** Data was obtained from records of 118 patients, ages 8 to 18, seen in a multidisciplinary pediatric pain clinic in Oregon State. Information about child age, gender, pain problem, duration and severity, medical diagnoses, current medications, height and weight were collected from medical records and intake questionnaires. The CDCs pediatric BMI calculator was used to obtain percentile and category (underweight, healthy weight, overweight, obese). Children and parents completed the Child Activity Limitations Interview-21 (CALI-21), a self-report measure of activity limitations, which yield Active and Routine factor scores. **Results:** Results indicated a high rate of overweight and obesity among youth with chronic pain (10.2% overweight and 28.0% obese weight status). The rate of obese weight status was significantly

higher in the current sample (28.0%) compared to a large national sample rate of 21.0%, $\chi^2(1) = 3.24$, $p < .05$, and compared to a state estimate of 18.5%, $\chi^2(1) = 6.89$, $p < .01$. Presenting pain problem was related to BMI percentile such that children with low back pain had highest BMI percentile. Type of medication prescribed was not related to BMI or BMI percentile. BMI percentile was associated with limitations in vigorous activities (Active factor scores on the CALI) and higher pain intensity. **Conclusion:** BMI and weight status may be important factors to consider in the context of chronic pain and disability in children and adolescents. Future work should investigate the role of BMI in predicting other health and psychosocial outcomes in this population.

Abstract 53

The Victimization Pathway to Depressive Symptoms as Mediated by Self-Concept for Physical Appearance in Obese and Over-Weight Adolescents

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Purpose: This presentation examines peer victimization as a predictor of depression in obese and over-weight adolescents, specifically examining self-concept for physical appearance as a mediator of this link. **Methods:** To examine this issue, two studies were utilized. Study 1 was the National Longitudinal Survey for Children and Youth, a longitudinal study of a stratified random sample of Canadian children ($n = 1,287$) and study 2 was a longitudinal study of French-speaking students from the public schools in the greater Montreal metropolitan area ($n = 610$). Both studies examined self-reports of peer victimization, self-concept for physical appearance, and depressive symptoms during early adolescence. Height and weight were self-reported in study 1 and researcher measured in study 2. These measurements were utilized for classification of participants' weight status according to cut-off points on Centers for Disease Control and Prevention's revised growth charts. **Results:** While study 1 examined obese status and study 2 examined overweight status, path analyses found similar findings for both studies. Both found that for only those with higher weight status, and not for lower weight status, peer victimization predicted increases in depressive symptoms over time and that this link was mediated by self-concept for physical appearance. In other words for high weight status adolescents, peer victimization lead to decreases in self-concept which lead to increases in depressive symptoms. **Conclusion:** Because the findings were limited to just those with heavier weight status, it suggests that there may be a synergy between the risk-factors for being victimized, such as obesity, and the outcomes of being victimized, such as more negative feelings of self-concept and depression. Being victimized may not only reinforce the negative self-concepts that a risk-factor for victimization, such as obesity, may cause, but a risk-factor for victimization, such as obesity, will also make it more likely that the adolescent will be victimized indefinitely. In other words, the risk-factors that strengthen the links in this pathway may also keep the pathway intact because it is also a risk-factor for being victimized.

Abstract 54

Family Burden Associated with Academic and Behavioral Problems in Childhood Cancer Survivors

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Purpose: Specific aims were to: 1) investigate associations between child behavior problems and general and late effects-specific family burden; 2) identify a subgroup with presumed neuropsychological late effects, and 3) identify family burden specific to late effects. **Methods:** Survivors (n=43) of any childhood cancer and their parents participated in a cross-sectional survey by mail. The sample of survivors was 63% female and 83% Caucasian with a mean age of 12 years at time of study. Mean age at diagnosis was 3.2 years. Participants completed questionnaires assessing demographic and treatment information; late effects (academic, cognitive, and psychosocial concerns); general and late-effects-specific family burden; child behavioral functioning; and parent distress. **Results:** Significant correlations were found between late-effects-specific family burden and externalizing ($r=.38$) and internalizing ($r=.44$) child behaviors. General family burden was not significantly correlated with child behavior problems. Using our screening tool, we identified a subgroup with presumed late effects (n=14). T-tests comparing the survivors with and without late effects indicated that parents of survivors with late effects reported higher late-effects-specific burden ($t=-2.91$) and parental distress ($t=-1.70$). General family burden did not differ by late effects group status. **Conclusion:** Family burden specific to late effects was higher for parents of survivors with reported academic and behavioral late effects, indicating our measure identified unique burden for these parents. This burden was significantly associated with behavioral adjustment in childhood cancer survivors. Early detection and consistent measurement of late effects and disease-specific burden would facilitate intervention and potentially ameliorate the burden of late effects, including academic and behavior problems.

Poster Session 2

Abstract 58

Characteristics of Children with ADHD and High IQ: Results from a Population-Based Birth Cohort

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Purpose: Limited information is available on the characteristics of ADHD among children with high IQ, although studies suggest that there are similarities to children with ADHD and normal IQ. The objective of this study was therefore to describe, contrast and compare the characteristics of ADHD among children with high IQ versus normal and low IQ through long-term follow-up. **Methods:** 379 children with ADHD were identified from a 1976-1982 birth cohort (N=5,718). Records from all public/private schools in the community, all sources of

medical care and private tutoring centers were available and abstracted on 370. Research identified ADHD cases were defined by a model combining three categories of information (DSM-IV criteria, ADHD-specific questionnaires, clinical diagnosis). Full scale IQ scores obtained between ages 6 and 19 years were used to categorize children into 3 IQ groups: high (IQ \geq 120; N=34), normal IQ (80IQ \leq 120; N=276), and low IQ (51IQ \leq 80; N=21). ADHD cases were retrospectively followed from birth until emigration, death, or high school graduation/dropout. The groups were compared on gender, treatment received, comorbidities, school outcomes, and maternal education. **Results:** There were no significant differences among children with high, normal or low IQ and ADHD in numerous characteristics, including median age at which research criteria were fulfilled (9.5, 9.7, and 9.8 years), presence of psychiatric disorders (47, 50, 48%), stimulant treatment rates (79, 75, 90%) grade retention (13, 21, 25%) and school dropout (11, 26, 26%). The groups differed only in presence of co-morbid learning disorders (85, 63, 57%, $p=0.026$), level of maternal education (e.g. percentage with a college degree 44, 13, 16%; $p<0.001$) and reading achievement (median national percentiles 77, 42, 29, $p<0.001$). There was a trend toward male preponderance among high IQ cases (91%) versus normal (73%) and low (67%) IQ cases. **Conclusion:** These findings suggest that ADHD is similar among children with high, normal and low IQ, although high IQ may favorably mediate school outcomes. Diagnosis and treatment of ADHD are important for children across the spectrum of cognitive ability.

Abstract 59

Pediatric Nurses' Perceptions of Optimal Pain Management Across Departments

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Purpose: Compared to other age groups, children may be at risk for poor pain management (APS, 2003). However, there has been limited research on pain management in pediatric patients (Vincent, 2005). Understanding how nurses view optimal pain management for pediatric patients will help children receive better pain management. **Methods:** A multi-site investigation surveyed nurses from three pediatric nursing institutions ($n=808$). Participants completed an electronic questionnaire, adapted from the Barriers to Optimal Pain Management survey (Vincent, 2004). Two graduate research assistants independently coded responses to an open-ended question asking participants to define Optimal Pain Management. IntraClass Correlations (ICC) determined inter-rater reliability. For the first code ($n=136$), $ICC=.96$, establishing excellent reliability among raters. The coded definitions of optimal pain management were divided into three main categories: Patient Comfort, Level of Functioning and Medication Management. **Results:** Chi-squared results indicated significant differences between departments when Patient Comfort was used to define optimal pain management, $X^2(1)=6.345$, $p<.05$, showing that departments endorsed optimal pain management differently. The time nurses spent with patients in pain was significantly related to whether a nurse described optimal pain management in terms of Medication Management, $t(770)=-2.609$,

$p < .01$. Nurses who defined optimal pain management in terms of Medication Management spent more time with patients in pain. **Conclusion:** Patient Comfort was frequently used to define optimal pain management and is consistent with the gold standard of using patients' self report as a measurement for pain. Also, the frequency with which nurses encounter patients in pain is associated with how they perceived optimal pain management. Nurses who report working with patients in pain more frequently may be more aware of different ways to appropriately manage medication in order to provide the best pain management possible. Further studies are needed to investigate how the frequency of working with patients in pain influences how nurses describe optimal pain management.

Abstract 60

Failure to Thrive (FTT) and Long Term Cognitive Outcome in Children with Prenatal Cocaine Exposure.

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Purpose: There is no universally accepted definition of FTT. Most often used criteria are attained growth (AG) with weight $< 5\%$ or growth velocity (GV) where weight falls across 2 centiles. To date, the relative impact of various criteria for FTT on poor cognitive development is unknown. The purpose of this study was to compare intellectual outcomes of children with prenatal cocaine exposure (PCE) who fit 3 mutually exclusive definitions of FTT, based on AG and GV principles. **Methods:** We studied 1240 mostly minority, low SES children (PCE 43% / < 37 wk GA 41%) from birth to 9 yr in the multisite Maternal Lifestyle Study. Based on CDC growth charts, infants were classified as FTT-1 (15%) if AG only (wt $< 10\%$ at 1 mo and wt $< 5\%$ at 1 point 1-24 mo); FTT-2 (11%) if AG and GV (wt $> 10\%$ at 1 mo and wt $< 5\%$ at 1 point); FTT-3 (6%) if GV only (wt $> 25\%$ at 1 mo and falling 2 centiles to $< 25\%$ but never $< 5\%$) and non-FTT (65%). Cognitive development was assessed at 3 yr (Bayley), at 5 yr (WPPSI), at 7 yr (WISC) and at 9 yr (WASI). Mixed models examined the group effects of FTT and PCE on IQ at each age, adjusted for site, other prenatal and postnatal substance use, sex, neglect, HOME scale, SES, caretaker IQ, education and stress, and changes in caretakers. **Results:** IQ of children with FTT-1 at 3, 5, 7 and 9 yr were 4.4 points ($p < 0.005$), 5.8 ($p < 0.001$), 4.2, ($p < 0.01$) and 4.1 ($p < 0.005$) lower than non-FTT respectively (adjusted mean differences). IQ for FTT-2 was 3.4 ($p < 0.05$) lower than non-FTT at 5 yr (adjusted mean difference), but not different at 3, 7, 9 yr ($p > 0.05$). FTT-3 was not significantly different from non-FTT at any age (all $p > 0.05$). Independent of FTT, PCE predicted lower IQ at 3 yr (1.7 points, $p < 0.05$) and 9 yr (2.9 points, $p < 0.001$), but effects were not maintained after adjustment for covariates. 60% of FTT-1 was < 37 wk GA compared to 38% of other FTT and non-FTT. **Conclusion:** Weight $< 5\%$ prior to 24 mo better predicts cognitive delay than GV criteria alone, if weight never reaches $< 5\%$, in this high risk population. Children already small at 1 mo show the greatest impairment and may warrant more intensive intervention.

Abstract 63

Developmental and Behavioral Co-Morbidities and Prescribing Practices for Children in a Preschool Developmental Evaluation Center

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Purpose: Determine the prevalence of developmental and behavioral disorders in preschool aged children evaluated at a specialty preschool developmental clinic and the pharmacologic interventions employed for identified behavioral disorders. **Methods:** This is a retrospective electronic chart review of all children ages 2 through 5 years 11 months, seen in a specialty developmental center during one calendar year. Documented diagnostic categories based on ICD-9 codes include developmental, behavioral, and medical diagnoses. Medications were classified based on generic classification and duration of action. **Results:** 569 Preschoolers (75% male) were evaluated in 2007. The majority (71%; 404) of the preschoolers received a primary developmental diagnosis, and 22% (126) a primary behavioral diagnosis. Of the 404 children with a primary developmental diagnosis, 18% (74) had a co-morbid behavioral diagnosis. Of the 126 children with a primary behavioral disorder, 25 % (31) had a co-morbid developmental diagnosis. 114 children (20% of the population) were prescribed medication for behavioral disorders, including ADHD, disruptive behavior disorder, and behavior disorder- NOS. Behavioral diagnoses and associated medication use increased with age. Stimulants comprised 77% of prescribed medications. 45% of the total prescriptions were for long acting stimulants. **Conclusion:** In preschool children with developmental concerns, developmental and behavioral co-morbidities such as speech/language disorders and ADHD should be considered when developing intervention plans. In this population of preschool children, 1 out of 5 children was medicated for behavioral concerns. Stimulant medications were the most frequently prescribed, with long acting stimulants accounting for 45% of prescriptions written.

Abstract 64

Social Relationships in College Students with Asthma

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Purpose: The purpose of the study was to expand upon the extant asthma literature by examining social difficulties and health-related quality of life (HRQOL) in college students who self-identified as having childhood-onset asthma as compared to healthy controls. **Methods:** Participants were matched on age and gender included 104 college students who were recruited through an online chronic health screener at a large Midwestern University. Participants were between the ages of 17 and 30 ($M=20.13$). The majority were female (73.10%) and Caucasian (80.80%). Participants completed a demographic form, the Dating Anxiety Scale for Adolescents (DAS-A), the Fear-of-Intimacy Scale (FIS), and the SF-36 Health Survey (SF-36). **Results:** Results showed that DAS-A was a significant predictor of mental ($\beta=$ -

.191, $p < .05$) and physical HRQOL ($\beta = -.208$, $p < .05$) and FIS was a significant predictor of mental HRQOL ($\beta = -.199$, $p < .05$) for individuals with and without asthma. Moreover, females with asthma evidenced greater overall dating anxiety than males, $t(102) = -2.40$, $p < .05$. This effect was driven by distress related to dating the opposite sex, $t(102) = -2.94$, $p < .01$, and fear of negative evaluation, $t(102) = -2.06$, $p < .05$. **Conclusion:** The study suggests that social relationships impact HRQOL and that gender differences exist among dating anxiety in college students with asthma.

Abstract 65

Evaluating Developmental Screening Using the PEDS and M-CHAT

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Purpose: The American Academy of Pediatrics (AAP) recommends developmental screens at specified visits and specific ASD screening at 18 and 24 months. Among the screens on the AAP Policy list are: Parents Evaluation of Developmental Status (PEDS), which elicits parents' concerns in developmental-behavioral domains and sorts children into risk status, and the Modified Checklist for Autism in Toddlers (M-CHAT), a parent completed screen for an ASD. This study evaluates the performance of a general developmental screen and an ASD specific screen when both are administered in settings including primary care and developmental behavioral pediatrics. **Methods:** Scores for the PEDS and M-CHAT were abstracted by retrospective chart review from 7 primary care clinics and one developmental behavioral center. Subjects were between 15 months to 3 years of age. M-CHAT failures were dichotomized to "critical" and "non-critical" failures. Parents' concerns on PEDS were categorized by developmental-behavioral domains as well as PEDS results. PEDS referral pathways were analyzed for critical failures on the M-CHAT. **Results:** Of 913 subjects with PEDS and M-CHAT tests, 155 patients had an M-CHAT failure. Of those, 62% had significant concerns on the PEDS. Critical fails contributed to 37% of the failed M-CHATs and were more likely to require further screening or be referred for further testing, as a result of the PEDS pathways algorithm (OR 6.8, CI 2.9, 15.8). Concerns on domains within the PEDS predictive of a critical M-CHAT failure included expressive language (OR 7.8, CI 3.5, 17.2), fine motor (OR 5.9, CI 2.6, 13.4), behavior (OR 5.56, CI 2.7, 11.4), and school (OR 2.3, CI 1.1, 4.9). No significant differences were found in gender, age, or type of practice. **Conclusion:** When referrals or additional screening were indicated by PEDS, critical failures were more common on the M-CHAT. As expected, expressive language was a predictor for a critical fail on the M-CHAT, as it is one of the core symptoms of an ASD. Other PEDS domains predicting a critical fail include fine motor, behavior, and school. In evaluating these screens used in both the primary care and subspecialty settings, the M-CHAT does not detect all of the concerns that the PEDS detects, nor does the PEDS detect all failed M-CHAT screens, supporting the need for both general developmental screens and ASD specific screens in this age range.

Abstract 66

Children with Type I Diabetes: Family Environment and it's Relationship to Socially Desirable Responses on Measures of Anxiety

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Purpose: The long-term effects of the anxiety experienced by children with chronic illness places them at risk for psychological and social adjustment difficulties (Pless & Nolan, 1991). Thus, while anxiety has been noted in children with Type I Diabetes, the ability to accurately measure anxiety within this population remains obscure. **Methods:** 51 children with various ethnic backgrounds between the ages of 7 and 12 (55% female) were assessed at the Loma Linda University Childrens Hospital Pediatric Diabetes Center. Anxiety was measured using the Revised Children's Manifest Anxiety Scale. Parents of the participants completed the Family Environment Scale and a brief demographic questionnaire. All testing was completed during routine appointments at a multidisciplinary pediatric diabetes health team clinic. **Results:** Preliminary findings reveal that 52% of the total sample had significant scores on the Lie Scale of the RCMAS. The Lie Scale has been shown, for children in this age range, to reflect the desire to portray socially desirable responses. Bivariate correlations were conducted between the Lie scale on the RCMAS and the 10 subscales of the FES. A positive correlation was found between the lie scale and the families perceived achievement orientation, $r=.44$, $p=.001$ and a negative correlation between the lie scale and the families perceived moral and religious emphasis, $r=-.33$, $p=.02$. **Conclusion:** These preliminary findings suggest that families who were perceived as more achievement oriented and to have less of a moral and religious emphasis were more likely to have children whose response style on the RCMAS was marked for social desirability. These results suggest the importance of identifying children whose concern for 'desirability' may be precluding accurate clinical assessment of anxiety or other psychological concerns. In addition, this study promotes the need to more comprehensively evaluate family factors and their potential interaction with psychological status in this at-risk population.

Abstract 67

Clinical Correlation of the Neurodevelopmental Risk Examination and the Cognitive Adaptive Test/Clinical Linguistic and Auditory Milestone Scale (CAT/CLAMS) scores in Extremely Low Birth Weight (500-750g) and Very Low Birth Weight (750-1000g) Infants at 12 months and 24 months.

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Purpose: The purpose of this study was to examine the association between the Neurodevelopmental Risk Examination (NRE) and the Cognitive Adaptive Test/Clinical Linguistic & Auditory Milestone Scale (CAT/CLAMS) at 12 months adjusted age and at 24 months chronological age. A second aim was to determine whether extremely low birth weight (ELBW, 500-750g) differed from low birth weight (LBW, 751-1000g) babies on the NRE. **Methods:** Patients discharged from the NICU between 2/03 and 12/06 were studied. Of 62 ELBW patients discharged within that time period, 20 met criteria for the study. Of 101 LBW patients, 25 met criteria. Assessments on the NRE subscales were dichotomized as either normal or

suspect/abnormal, and the overall NRE results were classified as either low risk or moderate/high risk. Results on the CAT and CLAMS were dichotomized as normal development vs. delay (mild, moderate, severe). The Fisher's exact test was used to examine all associations. **Results:** No significant associations were found between overall results on the NRE exam and the CAT/CLAMS at 12 and at 24 months. Although a suspect/abnormal neurodevelopmental NRE subscale was associated with a 2-fold increased likelihood of a delayed CAT score at 24 months, this was not clinically significant. No significant associations were found between birth weight and results of the NRE examination. **Conclusion:** The NRE may not be as accurate a predictor of cognitive outcome at 12 and 24 months as previously suggested. However, this study is limited by its small sample size. Further analysis with a larger cohort is now in process. We will also determine whether NRE scores for the study population differed from those lost to follow-up. Lastly, we will examine whether participation in Early Intervention affected developmental outcome.

Abstract 68

Comparing the Ethnic Identity of Students who Pass and Do Not Pass the State Standardized Academic Assessment

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Purpose: The purpose of this study is to compare the ethnic identity of students who pass the state standardized academic assessment to those who do not. **Methods:** We chose 174 male and female ethnically diverse middle school students who were participating in a reading intervention program in several middle schools in two large metropolitan areas in the Southwest. We administered the Ethnic Identity Scale (EIS; Umana-Taylor 2004) orally to all students in small group settings. Cut-off scores were obtained for each of three EIS subscales: Affirmation, Exploration, and Resolution. We created dummy variables for the state assessment scores using state cut-off scores to divide them into pass versus not pass categories. Pearson's Correlations between EIS subscales and assessment scores were conducted. Analysis of variance was conducted to evaluate differences between means. **Results:** State assessment scores were positively correlated with the EIS Affirmation subscale ($r=0.218$; $p=0.0048$), but not with the Exploration ($r=0.052$; $p=0.506$) or Resolution ($r=0.08649$; $p=0.2693$) subscales. ANOVA revealed a main effect of state examination scores on Affirmation ($F=9.79$; $p=0.0021$) scores, but not Exploration ($F=0.40$; $p=0.5294$) or Resolution scores ($F=1.48$; $p=0.228$). Post-hoc analysis demonstrated significant main effect between Affirmation scores and state assessment scores but not with Exploration or Resolution scores. Although there was no significant difference between mean scores on the Exploration and Resolution subscales, all subscales showed a trend toward higher scores for students who passed the state assessment. **Conclusion:** We conclude that students who pass the state standardized assessment have stronger affirmative feelings toward their ethnic group compared to students who do not pass. It appears that state examination results do not correlate with whether or not a student expresses interest in exploring their ethnic identity or in their overall resolved feelings about their ethnic group. However, there is an overall trend toward higher ethnic identity scores for students who passed the state examination.

Abstract 69

Managing Children with Attention Deficit Hyperactivity Disorder and Dysfunctions of Sensory Processing

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Purpose: Children with Attention Deficit Hyperactivity Disorder (ADHD) are often described as having a dysfunction of sensory processing when evaluated by occupational therapists and others, prompting physicians to ask if a child with ADHD should be treated differently, given the presence of co-morbid symptoms of this sensory dysfunction (SD). We sought to determine if SD co-morbidity impacts ADHD treatment efficacy. **Methods:** This prospective cohort study included children (n=34, 76% males) 5-18 years of age, newly diagnosed with ADHD using the Vanderbilt Parent Assessment Scales (VPAS), teacher assessment scales, and exam in a community pediatric clinic. The Short Sensory Profile (SSP) was completed by each subject to determine SD status (present or not). Medication, behavioral management or both were offered. VPAS and SSP measures were repeated after approximately four months of treatment. **Results:** Twenty nine (85%) children completed the study. Twenty-seven (79%) subjects met cut off scores consistent with SD. Improvement was seen in 94% of children on repeat VPAS scores and 76% of children on repeat SSP scores. Differences in mean scores on the VPAS and SSP before and after ADHD treatment were significant for both groups ($p < 0.001$). No significant difference was seen in ADHD improvement when comparing children with ADHD plus SD (n=23) to those with ADHD alone (n=6), controlling for age, gender, baseline ADHD severity, and behavioral therapy ($p = 0.55$). Nine (31%) children with previously "abnormal" SSP scores normalized into the "typical" range after ADHD treatment. Improvement in VPAS scores was not associated with baseline SD severity ($p = 0.01$). **Conclusion:** ADHD treatment was effective regardless of co-morbid symptoms of SD. In addition symptoms of SD showed significant improvement with ADHD treatment. Reports of SD by therapists or others should not discourage pediatric providers from treating ADHD symptoms: either with medication alone or in combination with behavioral therapy.

Abstract 70

Predicting Medical Adherence in Pediatric Cystic Fibrosis Patients Using the Health Belief Model

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Purpose: Cystic Fibrosis (CF) is a fatal genetic diseases that targets the respiratory and digestive systems and requires a multitude of daily treatments. Our goal was to identify variables related to childrens medical adherence and perceptions of treatment, using the Health Belief Model (HBM). **Methods:** Participants were 40 children from a Midwestern CF center. Participants completed questionnaires and interviews regarding their adherence to medical regimens and

health beliefs related to adherence. **Results:** The mean age of participants was 13.8 years; 40% were nonadherent to their prescribed medical regimens. Regression findings show that perceived risk of becoming seriously ill moderated the relationship between perceived susceptibility to multidrug resistant infection and benefits of adherence; childrens report of higher perceived benefits of adhering to treatment were predicted by the childs report of susceptibility to infection and perceived seriousness of becoming ill ($p < .05$). Cues to action mediated the relationship between childrens perceived benefits and barriers to adherence to treatment regimens; patients who perceived treatment as beneficial and had more prompts to adhere reported less barriers to treatment ($p < .01$, Sobel $< .01$). The only HBM variables that predicted adherence using logistical regression were parent ($p < .05$) and child ($p < .05$) report of the childs personal reminders of treatment and parent report of child overall prompts to treatment ($p < .05$). Using linear regression, parent perception of child adherence was predicted by parent report of child responsibility for treatment ($p < .01$) but not theirs. Childrens report of fewer barriers to treatment was also predictive of medical adherence ($p < .01$). **Conclusion:** These findings indicate that child perception of illness is related to adherence and suggest the importance of assuring that children understand their vulnerability to illness worsening and related sequelae. It would be beneficial for parents and children to address treatment responsibility to increase adherence. Further research is needed to understand parents role in adherence; larger samples are needed to explore parental roles and developmental effects.

Abstract 71

Initial Validation of a New Measure of Facial Expression Recognition: Survivors of Childhood Cancer Compared to Typically Developing Children

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Purpose: Survivors of childhood cancer have documented impairments in cognitive and social functioning, including recently-demonstrated deficits in facial expression recognition. Interpretation of emotions portrayed through facial expressions is thought to be a key component of social interaction. However, assessment of facial expression recognition in survivors has been limited by a lack of valid and reliable measures. Specifically, existing measures often rely on photographs, which are difficult to standardize, do not include child faces, and have a limited number of non-Caucasian faces. The objective of the current study was to develop and provide initial validation of a new measure of facial expression recognition for children and adolescents. It was hypothesized that 1) the measure would be feasible for use with survivors of childhood cancer and typically developing children; and 2) survivors would perform more poorly on the measure than typically developing children. **Methods:** The measure was created using a digital technique known as Responsive Virtual Human Technology, with input modeled on Ekman's Facial Action Coding System. The resulting measure consists of a series of racially-diverse digital adolescent faces that portray low and high intensity versions of the six basic emotions (fear, anger, sadness, happiness, surprise, and disgust). Thirty survivors

of childhood cancer and 30 typically developing children between the ages of 10 and 16 completed the Facial Expression Recognition Instrument (FERI), the WASI, and the DANVA2. **Results:** Survivors made significantly more errors on both the FERI and the DANVA2 than typically developing peers, even after controlling for significant differences in IQ. Initial validity was analyzed using Pearson correlations between the Child and Adult Faces subscales of the DANVA2 and the FERI, with analyses suggesting adequate validity. **Conclusion:** Results confirm initial validation of the FERI as a new, standardized method of assessing facial expression recognition in survivors of childhood cancer. This measure will provide more detailed information about this deficit in survivors, and could be modified for use as a social skills intervention.

Abstract 72

The Association of Parenting Capacity Variables to Depression and Anxiety in Children with Cancer

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Purpose: This preliminary study examined the association between children's depressive and anxious symptoms and three discrete parenting capacities: parental overprotection, perceived vulnerability, and parenting stress. **Methods:** Participants for the current study included 30 parents and children currently on-treatment for pediatric cancer. The following measures were administered and evidenced good internal consistency: Parental Protection Scale (PPS), Child Vulnerability Scale (CVS), Parenting Stress Index (PSI), Childrens Depression Inventory (CDI), and Revised Childrens Manifest Anxiety Scale (RCMAS). **Results:** T scores were first calculated for both the CDI and RCMAS. Results from correlational analyses revealed that PSI [$r(29) = .60, p < .001$] and PPS scores [$r(28) = .42, p = .022$] were significantly correlated with CDI scores. However, CVS was not significantly correlated [$r(29) = .34, p = .062$] to CDI scores. Examination of the RCMAS indicated that 7 children had invalid profiles due to an elevated Lie scale. As such, only RCMAS data from a subset of the sample could be analyzed ($n = 18$). Results revealed that none of the parenting capacity variables were significantly correlated with RCMAS scores. A regression was conducted with CDI scores as the dependent variable and parenting capacity variables as the independent variables. Results revealed that PSI scores [$B = .45, p = .016$] was a significant predictor of childrens CDI scores. PPS [$B = .24, p = .196$] and CVS scores [$B = .07, p = .703$] were not significant predictors. **Conclusion:** Results from the current study indicate that childrens internalizing symptomatology is related to specific parenting variables. It appears that symptoms of depression may have a more salient association with parenting stress and overprotective parenting than symptoms of anxiety. Future research should further examine the relationship of these parenting variables to child internalizing symptomatology in addition to other adjustment outcomes.

Abstract 73

Psychosocial Functioning in Children with Neurofibromatosis Type I

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Purpose: Children diagnosed with neurofibromatosis type 1 (NF1), a genetic disease, often present with neurocognitive and social deficits as a result of their disorder, which limit their quality of life. Limited research, however, has explored those factors that may underlie the psychosocial deficits in this population. As such, the current study aims to identify these factors. The objective is to assess facial expression recognition (FER) in pediatric NF1 patients as compared to a control group of typically-developing peers. It is hypothesized that 1) children with NF1 will make significantly more errors on a FER task and exhibit more psychosocial deficits in than typically-developing peers; and 2) deficits in FER will be associated with poorer psychosocial functioning and cognitive impairment. **Methods:** Twenty participants diagnosed with NF1 and 20 typically-developing peers, ages 8-17, were recruited for this study. All children completed the DANVA2 (a measure of FER), the WASI, and the PedsQL. Parents completed the Child Behavior Checklist, the PedsQL, the Emory Dyssemia Index (a measure of nonverbal behavior) and the Connors 3-Short Form (a measure of inattention). Independent sample t-tests were performed on the full set of psychosocial measures, comparing scores of the NF1 sample to the control group. Correlation analyses were completed to assess associations between FER and psychosocial and cognitive functioning. **Results:** Preliminary results indicate that children with NF1 made significantly more errors on the DANVA2 than controls. Children with NF1 also had more self- and parent-reported deficits across psychosocial domains. Further, results revealed a significant association between deficits in FER and parent-reported psychosocial and cognitive functioning. **Conclusion:** These findings confirm the presence of psychosocial deficits in children with NF1 and suggest they may be related to deficits in FER. By better understanding the underlying causes of psychosocial impairment in children with NF1 research can then begin to explore potential avenues of intervention to help improve the quality of life in this population.

Abstract 74

Collaborative Care Model: Exploring the Relationship between Co-Location of Behavioral Health Services within Pediatric Primary Care and Pediatric Outcomes.

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Purpose: Three-quarters of children seen in primary care have behavioral and mental health symptoms and 15-20% of children in primary care carry a mental health diagnosis. Co-location of behavioral health consultants with pediatricians enhances collaboration in the assessment and treatment of pediatric behavioral and developmental disorders. Goals of collaboration include: facilitating earlier detection of disorders, improving patient access to services, and improving primary care physicians' ability to make diagnoses and initiate treatment. Objectives were to (1) develop a method to evaluate collaborative care services, (2) identify levels of collaboration between behavioral health and primary care providers, (3) describe characteristics of collaboration between providers, and (4) relate collaborative care to pediatric and health system outcomes. **Methods:** Patient records of 77 children under age 4 at time of initial behavioral consultation were reviewed. Descriptive measures of collaboration, as well as

pediatric and health system outcomes were abstracted. Levels of collaborative care were coded based on services received. **Results:** In the study group, 9.1% received parallel delivery of services, 2.3% received informal consultations, 49.4% received formal consultations, 14.3% had co-provision of care, and 24.7% received services through collaborative networking. Data analyses examined pediatric and health system outcomes for each level of collaborative services. Results indicated that with more intensive collaboration there was an increased likelihood of a new behavioral or mental health diagnosis and a greater tendency for receiving behavioral and mental health services. **Conclusion:** A theoretically derived coding system for determining the extent of collaborative care was developed and used to describe levels of collaboration between behavioral health and primary care providers, and relate them to pediatric and health system outcomes.

Abstract 75

Predicting Maternal Distress over One Year of Treatment for Childhood Cancer

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Purpose: To examine the continuity of symptoms of anxiety and depression over one year among mothers of children with cancer, as well as coping, demographic, and disease factors that affect this association. **Methods:** Mothers of children with cancer (ages 5-17) were recruited to complete measures at one month (T1) and 12 months post-diagnosis or relapse (T2). Of 85 eligible families, 77 participated at T1 (91%) and 53 participated at T2 (82%; 12 children died). At T1, mothers were on average 36.89 years old (SD = 7.57), and 92% were Caucasian (n = 71). Mean time since diagnosis or relapse was 1.82 months; 19% had relapsed (n = 15). Mothers completed a demographic questionnaire, Beck Depression Inventory, Beck Anxiety Inventory, and Responses to Stress Questionnaire (RSQ), which assessed three types of coping: (a) primary control engagement (i.e., problem solving, emotional expression, emotional modulation), (b) secondary control engagement (i.e., cognitive restructuring, positive thinking, acceptance, distraction), and (c) disengagement (i.e., avoidance, denial, wishful thinking). **Results:** Average symptoms of anxiety and depression fell in the normal range at T1 and T2. Depression ($r = .70, p < .001$), anxiety ($r = .54, p < .001$), primary control coping ($r = .41, p < .01$), secondary control coping ($r = .75, p < .001$), and disengagement coping ($r = .61, p < .001$) were stable over one year. T2 depression was correlated with primary and secondary coping at T1 and all three types of coping at T2, while T2 anxiety was correlated with all three types of coping at both T1 and T2. T1 coping did not moderate the association between anxiety or depression at the two time points. Demographic and disease factors were unrelated to distress at one year. **Conclusion:** Maternal distress was limited and quite stable over one year of children's treatment for cancer. Early coping strategies did not influence the stability of symptoms over time, but more proximal coping strategies appeared important. Future research should include multiple informants and more frequent assessments to help identify subgroups

of mothers at risk for distress, as well as factors that may promote resilience during their child's treatment.

Abstract 76

The Influence of Internalizing Symptoms on Longitudinal Medication Adherence Among Pediatric Renal and Liver Transplant Recipients

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Purpose: The purpose of the current investigation is to examine the trajectory of medication adherence among transplant recipients and the relationship between internalizing symptoms and longitudinal medication adherence. **Methods:** Children who were (a) a renal or liver organ transplant recipient, (b) between the ages of 7 and 18, (c) at least six months post-transplant, (d) spoke English as the primary language, (e) did not have a developmental delay and (f) had a primary caregiver who provided informed consent were eligible to participate. The final sample for the current study consisted of 55 children (mean age = 13.3 years, SD = 3.7 years) at least six months post-solid organ transplant (32 liver transplantations, 23 kidney transplantation). Adherence to prescribed medication regimens was measured using the Medication Events Monitoring System (MEMS) TrackCap (mean days of monitoring = 89.71). Internalizing symptoms were assessed using parent- and child-report behavioral questionnaires. Multilevel modeling techniques were used to examine longitudinal medication adherence and its relationship to reported internalizing symptoms. **Results:** Intraclass correlation coefficients (ICCs) for the null model was as follows: day ICC = .452; week ICC = .096; participant ICC = .452. Medication adherence varied widely post-transplantation and typically decreased over time (mean adherence = 77.1%, .21% decrease for each successive day of measurement). Children who reported higher levels of state-anxiety demonstrated better medication adherence (3.2% increase in adherence per one unit increase in child-reported state anxiety). In addition, children with minimum and mean levels of self-reported anxiety demonstrated declining medication adherence over time, whereas children with maximum levels of anxiety demonstrated no decline in adherence. Parent-and child-reported depressive symptoms and parent-reported anxiety did not account for a significant proportion of variance in medication adherence. **Conclusion:** The current study demonstrates the importance of accounting for repeated measures when examining medication adherence. In addition, the current study suggests that internalizing symptoms can affect medication adherence post-transplantation. Clinicians and researchers should consider which behaviors or cognitions related to anxiety symptoms may be beneficial to medication adherence.

Abstract 77

Attributions of Responsibility for Daily Medication Adherence in Children with Asthma

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Purpose: The purpose of this study was to investigate the relationship between parent and child attributions of responsibility for medication adherence in children with asthma. **Methods:**

Twenty-nine parent-child dyads in which the child had a diagnosis of asthma and was prescribed a daily controller medication participated in the study. Children were between 8 -17 years of age ($M = 11.2$ years, $SD = 2.1$). Questionnaires were completed by parent and child to assess who was considered to be most in charge of medication adherence. Further, data on whether the parent engaged in adherence-supporting behaviors (i.e., reminding, administering, watching, and asking) were collected from the perspective of the parent and child. **Results:** A significant inverse correlation between age of the child and number of adherence-support endorsements was found ($r = -.487$, $p = .004$); however, the number of intradyad agreements were not significantly related to endorsements or age. Specifically, intradyad agreement about who is most in charge of the child's medication adherence was 82% (63% Parent; 19% Child). Intradyad agreed-endorsements of adherence-supporting behaviors usually carried out by the parent were: 69% Remind, 24% Watch, 21% Administer, and 69% Ask. **Conclusion:** There was a high level of agreement regarding attributions of responsibility for child adherence to daily asthma medication, suggesting well-defined behavior roles for this sample. Parents appear to engage in asking and reminding the child about taking medication more often than giving the medication or watching the child take the medication. Parents perform significantly fewer adherence-supporting behaviors as children get older. Although this finding is consistent with expected developmental increases in independence, given the well-documented trend of reduced adherence in adolescence, it raises questions about the role of parents supportive behaviors in the adherence of older children. It is possible that reduced support from parents may play a critical role in the rise of non-adherence with adolescence, a relationship that deserves further consideration.

Abstract 78

Positive Outcomes in Siblings of Children with Developmental Disabilities and Chronic Illnesses

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Purpose: Research demonstrates that having a sibling with developmental disability/chronic illness (DD/CI) puts an otherwise healthy sibling at risk for psychological adjustment difficulties. However some positive effects, such as increased compassion and tolerance have also been hypothesized. This study sought to identify positive outcomes for siblings of children with DD/CI and suggests the need for further research into predictors of positive/negative influences.

Methods: Data on 34 siblings of children with DD/CI were examined. Diagnoses of the children with DD/CI included physical disabilities, cognitive disabilities, and psychiatric disorders. Healthy siblings were 4-13 years of age, with a mean of 7.91 years. Parents completed the Child Behavior Checklist and a parental report measure designed by the authors, the Positive Impact Scale. The PIS included 9 items rated on a likert scale (i.e., 0-2) which was designed to measure the positive impact a sibling with DD/CI has on his/her healthy sibling in the following areas: personality/mood, strength of character, compassion/understanding, self-esteem, personal

independence, household responsibility, child care responsibility, recreational activity, and relationship with peers. **Results:** Chi-square analyses revealed that a significant proportion of parents answered that the healthy sibling's strength of character, compassion/understanding, personal independence, and child care responsibility/abilities had been positively affected by their sibling with DD/CI. Further, T-tests of the siblings' CBCL revealed that the siblings were not rated by their parents as getting along any better with their brother/sister with CI/DD than the healthy normative sample. **Conclusion:** Results suggest that it is not merely the healthy sibling and brother/sister with DD/CI pair that gets along the best that leads to the most positive outcomes for the healthy sibling. It also suggests that the results do not simply reflect a parent's optimistic view of their children. These results call for further study into the quantitative identification of positive effects on a healthy sibling and the predictors of these effects.

Abstract 79

Sibling support of pediatric diabetes management: Relations to adherence, glycemic control, and quality of life

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Purpose: Most "family" research on children with type 1 diabetes has focused on parents or general family functioning, with little focus on the role of siblings as a support or barrier to effective diabetes management. This study examined the role of sibling support in pediatric diabetes management. **Methods:** Thirty children (mean age = 11 years; 54% male) with type 1 diabetes participated in an ongoing study on sibling support. Their siblings (mean age = 13 years) were 49% male, with 66% older than the child with diabetes. Sibling relationship quality and support for diabetes care, general and diabetes-related quality of life, and adherence were assessed with standardized questionnaires/interviews. Most recent HbA1c, a measure of glycemic control, was collected from the medical record and average number of blood glucose checks was downloaded from the child's glucometer. Partial correlations were run, with child age covaried. **Results:** Sibling support was associated with warmth in the sibling relationship (r 's = .52 - .75, $p < .01$) but unassociated with sibling conflict (all r 's, n.s.). There were trends for sibling conflict and rivalry to be associated with poorer adherence (r = .28 & .26, p 's < .21). Sibling support was unrelated to self-reported adherence, but was positively associated with adherence, as measured by glucometer data (r = .35, $p < .06$). Children with poorer glycemic control reported receiving more diabetes-related support from their siblings (r 's = -.25 - .35, p 's = .05 - .17). Sibling conflict was associated with poorer general quality of life (r = .39, $p < .05$), while warmth was associated with decreased worry about diabetes (r = -.30, $p < .10$). **Conclusion:** This study provides a preliminary look how sibling relationship variables, including perceived support of adherence, relates to diabetes-related outcomes. A complicated picture emerges in which children with poorer glycemic control report greater help from siblings in

managing their diabetes, but with sibling conflict also associated with poorer outcomes. Continued data collection will allow for greater power to examine potential moderators, including birth order and same-sex vs. opposite-sex dyads. Examination of sibling influences will allow for richer models of the role of family in pediatric diabetes management.

Abstract 80

Healthcare Needs of Children with Down Syndrome and the Impact of Health System Performance on Families

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Purpose: To assess the U.S. healthcare system's success in meeting healthcare needs of children with Down syndrome (DS), as well as the functional, financial, and social impact of their medical conditions and care on their families. **Methods:** Data from the CDC/National Center for Health Statistics' 2005-2006 National Survey on Children's Health were analyzed. The families of 40,000 children age 0-17 years with special healthcare needs (SHCN), including 400 with DS, were interviewed by telephone. **Results:** Compared with the entire sample of children with SHCN, children with DS were much more likely to have 4 or more health conditions (42.2% vs 10.6%), health conditions were more likely to affect daily activities (73.4% vs 21.0%), and children were more likely to have 4 or more functional difficulties (78.6% vs 27.1%). Children with DS were less likely to receive comprehensive care within a medical home (29.7% vs 47.3%), more likely to have not received all needed care coordination (56.2% vs 31.5%), more likely to report unmet needs for specific health services (38.1% vs 15.0%), and youths were less likely to receive services necessary to make appropriate transitions to adult healthcare, work, and independence (13.7% vs 41.5%). Impact on families was also great, as indicated by larger numbers in the DS group requiring families to cut back or stop working (55.1% vs 23.5%), provide >11 hours per week providing healthcare to their children (30.2% vs 9.5%), or have financial problems due to their child's health needs (36.4% vs 17.9%). **Conclusion:** Families of children with DS report more problems in meeting all their children's health needs compared to a SHCN population. These findings suggest that while the multiple medical conditions commonly seen in individuals with DS are, for the most part, well-recognized and treatable, there persist substantial barriers to appropriate care for children with DS and their families, who appear to be burdened disproportionately.

Abstract 81

How Do Parents Make Decisions About Analgesic Use? Examining the Impact of Child Age and Parent Gender in a Community Sample

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Purpose: Exposure to painful experiences is common for children. Understanding how caregivers make decisions about treating their child's pain can be informative for health care professionals. Characteristics of both child and parent may influence what medications are used and how often medications are given. The current study examines how gender and age influences parents' decision making about pharmacological and nonpharmacological methods for treating childhood pain. **Methods:** Data is being collected using a community sampling technique. Students enrolled in a psychology course are recruiting parents of children to complete an online survey. Currently, four hundred parents (M age = 36.54, SD = 7.52), of children ages 1 to 8 (M = 4.75, SD = 1.90), have participated. Participants were predominantly Caucasian (85%) and half of the children in the sample were boys. Parent responders were predominantly mothers (65%), high school educated (years: M = 11.97, SD = 3.17), and had families consisting of multiple children (M = 3.22, SD = 1.09). Ongoing data collection will also provide information on parents of adolescents, allowing for age comparisons in the final paper presentation. **Results:** Preliminary findings indicate that overall pain management techniques are similarly used by both mothers and fathers with a few interesting differences. Mothers were more likely to give baths, rub/massage, provide comfort, and use ice. In contrast, fathers were more likely to tell their child to suck it up. Mothers were also more likely to give pain medication when their child asked for it, when increased activity was planned, and were more likely to use an alternative approach instead of analgesics. Parents were more likely to withhold pain medications from their daughters because they did not think they were actually in pain and because they thought the pain was stress related. Parents also reported using distraction more often with daughters. **Conclusion:** These preliminary results support the previous literature and provide new insight into how community parents make decisions about child analgesic use. Future research should compare parent decision-making across clinical and non-clinical populations. This research will provide health care professionals with information to target parents' misperceptions about child analgesic use.

Abstract 82

How Do Teachers Work with Parents and Clinicians about Urban Children with ADHD?

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Purpose: Anecdotal evidence suggests that collaboration among parents, clinicians and teachers is sub-optimal during the diagnosis and ongoing management of children with ADHD. To our knowledge there are no published data regarding teachers' experiences and expectations of communication and collaboration among these groups in caring for urban children with ADHD. **Methods:** This is a qualitative study of teachers of urban children with ADHD. We recruited teachers who are involved in caring for children with ADHD in a single large urban school district. We conducted in-depth qualitative interviews to elicit experiences and expectations of collaboration among teachers, parents and clinicians regarding the care of children with ADHD. We used open coding to generate initial codes, categories, and themes for preliminary analysis. We used thematic analysis to investigate relationships among themes. **Results:** Nine teachers completed interviews. All were female with a median age of 33. Themes

included positive teacher attitudes towards collaboration between themselves, parents and clinicians. Teachers identified several barriers to collaboration within these groups as well as on a system level, such as cultural factors, competing priorities, and lack of ADHD knowledge. Breakdowns in collaboration occurred when clinicians and teachers held different perceptions of their responsibilities and when clinician, parents and teacher beliefs regarding the diagnosis and treatment process were discordant. The teachers described parent involvement ranging from passive to highly active, with focus on the emotions that parents feel during the process of diagnosis and management. Teachers also identified strategies that they felt would improve collaboration, including methods to foster relationships between groups and to create regular, systematic methods of communication. **Conclusion:** Teachers identified a range of barriers and proposed several methods to improve collaboration with parents and clinicians around ADHD care. This study adds to our understanding of barriers to collaboration and may help to guide strategies for improving community collaboration for ADHD care.

Abstract 83

Healing Touch Shows Potential Stress Mitigation in Ill Neonates.

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Purpose: Investigate Healing Touch stress mitigation potential in ill neonates and feasibility for further study. **Methods:** Study Design: Neonates, requiring ventilator support or gavage tube feeding, were enrolled in the first 7 days of life. 13 subjects were studied each for 8 consecutive days - 1 baseline study session and 7 days with 2 study sessions each. Subjects were randomized to two groups - treatment and control - stratified for illness severity; all were mild-moderate illness severity. Each study session included defined baseline state and consecutively pre-stressor, specified stressor (nursing cares) and recovery. During recovery for all subjects, a standard, individualized program of care for stress management was provided for all study sessions. Healing Touch was also provided to the treated subjects for ONE study session each day. Data collected throughout all study sessions: Physiological [HRV, HR, O2 saturation] and Behavioral state and cues. Numerous additional background and potential outcome measures were collected. Result of Heart Rate Variability is presented here as the most reflective of adaptability maturation in responding to stress. Data Analysis: Heart period (HP) and respiratory sinus arrhythmia (RSA) data (using Porges' MXEdit to calculate the index of vagal tone) were analyzed. Correction for daily baseline differences was made before comparisons were done using pre-stressor, stressor and recovery time segments. All results are descriptive due to small population size. **Results:** HP and RSA decreased during the stressor and recovered toward baseline levels in both groups. Within the treated group RSA decreased less in HT+SOC than SOC alone [effect size .43; expected sample size 17]. RSA decreased less in the treated group (HT+SOC condition) than in the control group [effect size .40; expected sample size 196]. Effect size comparison showed stronger treatment effect days 6-8 (results given) vs days 2-8. HP decreased less in the treated group (similarly in both conditions) than for the controls. **Conclusion:** Healing Touch shows potential for stress mitigation in ill neonates and is uniquely suited to this fragile population. Future study is warranted.

Abstract 84

Observed Father Negativity and Positivity and Child Externalizing Problems: SES and Ethnicity as Moderators

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Purpose: A number of studies report associations between parental hostility, warmth, and child externalizing and internalizing behaviors. These studies often include self-report data from fathers and mothers to test for the effects of parent gender on positive and negative parenting behaviors on children's adjustment behaviors. The problem is that fewer studies fail to emphasize the uniqueness of associations between father negativity and positivity and their child adjustment behaviors. Additionally, few studies tend to compare fathers and mothers in ethnic families and more fail to address the underlying processes that are associated with parents' feelings and their children's adjustment difficulties. To address these problems, this study examined the associations between observers' ratings of father negativity and positivity and parent-rated child externalizing and internalizing problems in an ethnically and socioeconomically diverse sample of 6-10 year old boys and girls. **Methods:** We used bivariate correlations to examine the relationship between fathers' positivity and negativity and their children's externalizing and internalizing behaviors. We also computed hierarchical regression equations predicting externalizing and internalizing problems by fathers' positivity, negativity, socio economic status, child gender, and ethnicity. **Results:** The results suggest an association between fathers' negativity and children's externalizing problems moderated by family ethnicity and SES. There was a modest positive association, but only for middle-SES Caucasian fathers. A similar, albeit non significant, pattern was found for the link between father negativity and child internalizing problems. **Conclusion:** The results suggest potentially powerful socio-economic and ethnic variation in the processes linking observed aspects of paternal behavior and children's maladjustment in middle childhood that might be taken into consideration by professionals working with children from diverse backgrounds who exhibit externalizing and internalizing behaviors.

Abstract 85

Informant Discrepancy in Cystic Fibrosis: Comparison between Child, Parent and Physician Report

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Purpose: The present study evaluated whether informants: children with cystic fibrosis (CF), parents, and physicians, differ in their reports of overall and specific adherence to medical treatment. Because small sample size and non-normal distribution limit the creditability of

traditional analyses, this study contributes to the research by evaluating data with a non-normal approach, bootstrapping. Bootstrapping simulates the process of repeatedly sampling without restriction of a sampling distribution. **Methods:** Participants were 33 children between the ages of 9 and 17 years diagnosed with CF. Questionnaires were collected from children, parents, and physicians during outpatient visits to a CF Clinic. **Results:** Generalized Estimating Equations (GEE) model with bootstrapped standard errors, found significant differences between informant type and medical treatment adherence behaviors, $\chi^2(23) = 121.91$, $p = 0.00$. Paired-sample T-tests compared perceptions of global adherence ratings as well as specific adherence behaviors between: 1. child versus parent report, 2. child versus physician report, and 3. parent versus physician report. There was a significant difference between child versus physician reports of aerosol antibiotic adherence ($Z = 2.12$, $p = .03$), with children more likely to rate themselves as adherent, and oral antibiotic adherence ($Z = -2.35$, $p = .01$), with physicians more likely to rate children as adherent. There was a significant difference between parent and physician report of oral antibiotic adherence ($Z = -2.44$, $p = .01$), with physicians more likely to rate children as adherent, and airway clearance adherence ($Z = 1.89$, $p = .05$), with parents more likely to rate children as adherent. **Conclusion:** Findings that physicians were more likely to rate children as adherent than children or parents suggest physicians are basing their appraisal on physical status, rather than actual adherence behaviors, and may affect prescription practices. These findings suggest the need for research with behavioral measures of adherence and raises questions about how to assess adherence and evaluate the need for changing medical management decisions.

Abstract 86

An Open-Label Pilot Study of Transdermal Methylphenidate in Children With Autism Spectrum Disorders, Inattention, Hyperactivity, and Impulsivity.

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Purpose: In this study we examined outcomes related to core ADHD symptoms, a general measure of problem symptoms, and two measures that elicit signs of functional improvement in children with symptoms of both Autism Spectrum Disorders(ASD) and Attention-Deficit/Hyperactivity Disorder(ADHD). **Methods:** 14 boys and 2 girls, ages 6y5m to 11y4m(mean=7y10m)with autism by history,confirmed by GARS-2(Autism Index range 70-130, mean=101) and who met DSM-IV ADHD criteria A,B,C&D, but not E(which excludes ASD) were enrolled in this single site, 8 wk , open label study. Transdermal methylphenidate patch(Daytrana) was titrated from 10 mg/d at weekly intervals until the ADHD-RS in normal range or there were unacceptable side effects. Dosage range was 10-30 mg/d(mean=19 mg). The patient's ADHDRS-IV and Aberrant Behavior Checklist(ABC) were obtained at each visit. The Life Participation Scale for ADHD (LPS) and the Pediatric Evaluation for Disability Inventory (PEDI) were obtained at the start of treatment and at study completion. Statistics: General linear model repeated measures of SPSS. Intent to treat with last value carried forward for child who did not complete. **Results:** 15 children completed trial. One patient had exacerbation of a pre-existing tic disorder and disenrolled after 2 weeks of therapy. There was significant reduction in parent reported ADHDRS-IV Inattention from 20.13 ± 3.42 (mean + s.d.)to 8.81 ± 5.91

($p < 0.001$), Hyperactivity/Impulsivity from 19.75 ± 5.25 to 6.69 ± 5.95 ($p < 0.001$), and Total from 39.88 ± 7.87 to 15.50 ± 11.02 ($p < 0.001$). There was a reduction in ABC from 76.25 ± 21.65 to 32.25 ± 22.90 ($p < 0.001$). There was an increase in participation on the LPS from 26.50 ± 8.91 to 38.38 ± 12.83 ($p < 0.001$). Functional independence on the PEDI also increased in Self Care from 28.94 ± 7.18 to 32.06 ± 6.43 ($p < 0.03$), Social Function from 9.25 ± 4.95 to 14.75 ± 6.03 ($p < 0.001$) and Total Score from 72.56 ± 11.54 to 81.50 ± 11.21 ($p < 0.001$). **Conclusion:** The use of transdermal methylphenidate was associated with a decrease in problem behaviors and an increase in functional behaviors in this group of children with symptoms of ASD and ADHD. The transdermal patch was well tolerated. These results suggest that larger, double-blind, studies of stimulant therapy in children who are co-morbid for these symptoms are feasible and justified. This investigator initiated study funded by Shire US Inc. Wayne, PA.

Abstract 87

Miscarried Helping in Families of Youth with Diabetes: When Helping Hurts

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Purpose: Previous research has demonstrated the psychometric properties of a measure, Helping for Health Inventory (HHI), developed to assess the negative aspect of social support (a.k.a, miscarried helping) in families of youth with diabetes. This previous research indicated that the HHI was demonstrated to be adequately reliable and valid in a sample of youth with poorly controlled diabetes (Harris et al., 2006). **Methods:** This report describes the findings from a factor analysis of the HHI in a sample of youth with poorly controlled diabetes and an analysis of demographic and diabetes-related factors that might differentiate families based on their responses on the HHI. As a part of a more comprehensive evaluation, 40 parents of youth with poorly controlled diabetes completed the HHI. Adolescents participating in this study had a mean age of 15.2 years ($SD=1.5$), mean duration of diabetes of 4.8 years ($SD=3.2$), and a mean baseline HbA1c of 11.0% ($D=1.6\%$). Forty-seven percent of the youth were African-American, 56% were female, and 44% resided in single-parent homes. **Results:** An exploratory factor analysis was conducted on the 15 items of the HHI. Findings from this factor analysis indicate that the HHI has three primary factors. The three factors extracted from the factor analysis appear to measure three distinct, but inter-related components of miscarried helping including parent-child conflict around helping (8 items), parents feeling responsible for their child's health (4 items), and the parents perception of helping as either good or bad (3 items). Sixty-one percent of the variance was explained by the 15 items of the HHI. **Conclusion:** Based on an exploratory factor analysis, the 15 items of the HHI load on to three primary factors that assess parent-child conflict around helping, parents feeling responsible for their child's health, and the parents' perception of their helping as either good or bad.

Abstract 88

Making a Case for House Calls for Families of Youth with Poorly Controlled Diabetes

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Purpose: Recently, a diabetes-specific version of Behavioral Family Systems Therapy (BFST-D) has demonstrated improved treatment adherence and metabolic control in youths with

diabetes mellitus (DM) from highly conflictual families. This was especially true for those adolescents with baseline glycosylated hemoglobin (HbA1c) $\geq 9.0\%$. **Methods:** This report presents the initial findings of a randomized controlled trial of two different applications of BFST-D in adolescents with poorly controlled DM. Adolescents and their families were randomized to receive twelve 90-minute sessions of BFST-D conducted in the family's home or at the clinic. Families completed an average of 8 BFST-D sessions. In all cases, BFST-D augmented standard medical care. At baseline and post-treatment assessments, 40 adolescents and their parent(s) completed the Diabetes Self Management Profile (DSMP), an assessment of diabetes treatment adherence. Metabolic control was determined using HbA1c values collected at baseline and post-treatment assessments. **Results:** Two separate ANCOVAs were performed with BFST-D application serving as the independent variable and the baseline HbA1c value and youth-reported DSMP total score serving as the covariate. From baseline to end of treatment, HbA1c for the Clinic-Based group declined by an average of 0.1%, while that for the Home-Based group declined by an average of 1.5%. ANCOVA yielded a significant between-group difference [$F(1,26) = 7.4$; $p < .012$], indicating that HbA1c improved more for the Home-Based group. From baseline to end of treatment, youth-reported DSMP scores for the Clinic-Based group increased by an average of 4 points, while that for the youth-reported DSMP scores for the Home-Based group increased by an average of 10 points. ANCOVA yielded a trend for a between-group difference [$F(1,26) = 3.5$; $p < .074$], favoring the Home-Based group. **Conclusion:** These findings revealed that Home-Based BFST is superior to Office-Based BFST in improving HbA1c in youths with poorly controlled DM.

Abstract 89

Does Intensive Treatment Lead to Better Results in Toddlers with Autism Spectrum Disorders (ASD)?

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Purpose: Little is known about the predictive factors for a positive response to intensive treatment in toddlers with ASD. Recommendations are from reports of clinical improvement after intensive one-to-one therapy. But in clinical practice, we sometimes see children receiving less therapy make good progress and other children make little progress despite intensive therapy. We sought to compare the developmental progress of toddlers with ASD receiving variable hours of treatment. **Methods:** 30 children with an ASD between 26 and 32 months are enrolled in this prospective pilot project. They were referred to a developmental clinic for evaluation of a possible ASD. All received assessments of language, autism symptoms, cognitive progress, and details of their therapies. Intensive treatment at 25 hours a week with ABA, ST and OT was recommended for all but this was not always delivered. Children are evaluated every 6 months using the Mullen Scales of Early Learning, Autism Diagnostic Observation Schedules (initial and last visits), MacArthurBates CDI and the Pervasive Developmental Disorders Behavior Inventory. **Results:** Currently we have Mullen results on 15 children (11 boys, 4 girls) who have at least one follow-up. These were completed an average of 9.3 months ($SD = 3.1$) after the initial evaluation. Mean age was 28.2 months. We examined the

relation between total hours of 1:1 treatment per week, receptive language (RL) and Early Learning Composite (ELC) scores at baseline and follow-up. We assumed a linear trend in scores and calculated a slope for change in scores for each child and plotted them against hours of treatment. There was a weak positive correlation between improved ELC scores and total hours of treatment (THT) ($r=.21$) and a weak negative correlation between scores of RL and THT ($r=.14$). No linear relationship was observed between ELC or RL scores and THT. **Conclusion:** These preliminary data do not support the assumption that greater intensity of treatment leads to more clinical improvement in toddlers with ASD. Other factors are important in the response to treatment and must be explored.

Abstract 90

Universal Teacher Screening for ADHD Risk: Exploring Potential Utility

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Purpose: To explore the potential utility of teacher ADHD screening by examining the degree to which new cases are uncovered and the significance of positive ADHD screens in terms of persistence of clinical at-risk status, end of year adverse educational and behavioral outcomes, and use of school services prior to the introduction of a community based system of intervention. **Methods:** Teachers in 5 Mississippi elementary school districts used the Vanderbilt teacher rating scale, completed online, to screen all children whose parents consented. In the last two weeks of school all children screening positive for ADHD and 102 children randomly selected from initial negative screens were rescreened by the same teachers and outcome data regarding school interventions, disciplinary measures and academic progress were obtained by teacher questionnaire. A sample of 159 parents of children screening positive for ADHD symptoms were interviewed. **Results:** 47% of parents consented and 5,727 children were screened. 20.5% were positive for ADHD with subtypes: inattentive: 11.2%; combined: 6.2%; hyperactive: 3.1%. 77.4% of parents reported being aware of behavior or learning problems, 25.8% had received a prior diagnosis of ADHD and 13.8% were on prescription medication for ADHD. By year's end 59.7% of children initially screening positive for ADHD still met criteria. Compared to controls, children positive on the initial screen were more likely to have: academic difficulties: 72.5% v 23.3% ($p < .01$); receive special services: 54.1% v 21.4% ($p < .01$); disciplinary interventions: 33.9% v 10.7% ($p < .01$); have social problems: 30.1% v 2.9% ($p < .01$). **Conclusion:** Screening for ADHD in elementary school using a standardized and validated teacher rating tool detects children not previously recognized. A larger proportion of children were found with inattentive type ADHD than in clinical samples and a larger percent of all children screened positive than in surveys of populations not requiring parental consent. The status of a positive screen for ADHD during the school year tends to persist and is associated with adverse academic and behavioral outcomes despite a variety of school interventions. Early intervention programs based on systematic universal teacher screening using standardized and validated rating scales with medical input may be warranted to address these predictable adverse outcomes.

Abstract 91

Does Pediatric Patient-Centeredness Affect Family Trust?

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Purpose: This study seeks to describe and measure the patient-centeredness of pediatricians as a precursor of their care behavior performance, to determine how pediatric patient-centeredness influences family trust, confidence, and the likelihood to recommend, to assess the stability of pediatricians patient-centeredness on family trust across national random samples, and to test the hypothesized pediatric patient-centeredness models strength against competing models. **Methods:** All data used in this study were collected with the Press Ganey Medical Practice Survey, a widely-used self-administered standardized instrument, which captures patients ratings of their healthcare visit, including scores on physician care behavior performance. Evidence of the instruments internal consistency and construct validity has been documented. Data was collected from surveys that were mailed throughout the year to random samples of patients in each pediatric practice. The data were analyzed using structural equation modeling to detect direct effects on the desired outcome of patient trust. **Results:** The effect of patient-centeredness on family trust, confidence, and the likelihood to recommend the practitioner was stable across both the test and cross-validation samples. When patient-centeredness increased, family trust increased, and conversely, when patient-centeredness decreased family trust decreased. Families with high trust had more confidence and were more likely to recommend their physician and conversely families with lower trust had less confidence and were less inclined to recommend their physicians to others. The influence of gender on family trust was insignificant in both the test group and in the cross-validation group ($p = .623$, $p = .711$). **Conclusion:** Based on the above results and supporting evidence, we conclude that patient-centeredness is a teachable and measurable latent ability of pediatricians. Increases in patient-centeredness cause increases in family trust, confidence and the likelihood to recommend pediatricians. It also predicts family rating of pediatricians care behaviors.

Abstract 92

Somatic Growth Velocity and Cognitive Functioning in Young Children with Sickle Cell Disease

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Purpose: Children with Sickle Cell Disease are at elevated risk for abnormal developmental trajectories in terms of somatic growth and cognitive functioning. The purpose of this study was to examine the relationship between growth velocity and cognitive performance among young children with SCD to determine whether rate of somatic growth during early childhood might

be one marker of neurocognitive risk status. **Methods:** Participants were 46 children with SCD, ages 4 to 8 years. Current anthropometric measurements, including body-mass-index-for-age (BMI-for-age) and height-for-age, were collected, and cognitive testing was conducted. Retrospective medical chart reviews were completed to collect growth trajectory data for each child from age 2 until the time of testing. Growth velocity curves were created, and linear slopes for height-for-age and BMI-for-age were calculated. **Results:** Regression analyses showed that higher BMI velocity (i.e., increases in BMI status over time during early childhood) predicted higher cognitive scores at the time of testing on measures of global cognitive ability, language ability, and visual-motor skills. Height-for-age velocity was not a significant predictor of cognitive performance; rather, results indicated that most children showed very little change in height-for-age percentile during this period of development. **Conclusion:** This study provides preliminary evidence that somatic growth trajectories and cognitive development are related in young children with SCD. Increases in BMI-for-age status during early childhood could be a protective factor for cognitive development in this population. Future studies should examine the efficacy of early nutritional and biomedical interventions in improving both growth and cognitive outcomes in young children with SCD.

Abstract 93

A Community/School-Based Approach to the Prevention of Childhood Obesity

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Purpose: The goal of the present study was to evaluate the efficacy of a community/school-based healthy lifestyle program in a rural southern community. **Methods:** School children and their families (N = 507; M age = 8.36 years; 60% African American; 40% Caucasian) completed measures of food knowledge (Know Your Body), physical activity (SPARKS Physical Activity Checklist), and eating/cooking habits (Dietary Habits Questionnaire). Health professionals measured the children's body mass index (BMI) and percentage of body fat, and administered tests from the President's Challenge Fitness Test (i.e., curl ups, shuttle run, V-sit). These assessments were followed by a year-long health promotion program that included monthly family-oriented physical activities (e.g., parent and child softball throws) and nutritional events (e.g., healthy tailgating cook-off). The assessment procedures were repeated to evaluate for changes in measured variables at the end of the year. Outcome scores were compared to a control school that was measured and matched on demographic variables. **Results:** At pre-intervention, 32% and 33% of the children in the treatment and control school, respectively, fell above the 95th percentile for BMI. Children at both schools had an average of 26% body fat. Using residualized change scores, and compared to the control school, the intervention school showed statistically significant improvement in percentage of body fat, $F(1,449) = 5.56, p < .05$, dietary habits, $F(1,449) = 12.30$ and $4.32, p < .05$, physical activity, $F(1,449) = 4.56, p < .05$, and on 2 fitness tests, curl-ups-- $F(1,449) = 30.69, p < .0001$, and shuttle run-- $F(1,449) = 52.24, p < .0001$. **Conclusion:** A culturally-sensitive, community/school-based program that was designed to promote healthy lifestyle habits among rural southern children at risk for obesity yielded

significant treatment effects on indicators of obesity, fitness, and dietary habits. These findings suggest that fostering healthy changes within the context of a community's culture can yield significant treatment effects.

****Abstracts 44, 45, 48, 49, 51, 52, 55, 56, 57, 61 and 62 were previously published research and are not included in this online publication.***