



# ADHD

ATTENTION DEFICIT HYPERACTIVITY DISORDER

  
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Early Intervention in Psychiatry. 2009 Aug;3:189-97.

### **Differential brain activation during response inhibition in bipolar and attention-deficit hyperactivity disorders.**

**Cerullo MA, Adler CM, Lamy M, et al.**

**Aim:** To identify differential patterns of brain activation between adolescents with bipolar disorder and adolescents with attention-deficit hyperactivity disorder (ADHD) to better understand the neurophysiology of both disorders. We hypothesized that subjects with ADHD would show altered activation in brain regions involved in executive and sustained attention. In contrast, we hypothesized that bipolar subjects would show altered brain activation in regions responsible for emotional homeostasis, including the striatum and amygdala.

**Methods:** Functional magnetic resonance imaging was performed during a continuous performance task with a response inhibition component in 11 adolescents with bipolar disorder during a manic episode, 10 adolescents with ADHD, and 13 healthy adolescents.

**Results:** There were no differences in behavioural performance among the three groups. Compared with bipolar subjects, subjects with ADHD showed increased activation in the superior temporal lobe during successful response inhibition. Although bipolar subjects did not show activation differences in the striatum or amygdala compared with ADHD subjects, increased left parahippocampal activation in the bipolar group was associated with increased manic symptoms.

**Conclusions:** The patterns of brain activation observed in the current study support divergent patterns of neurophysiological dysfunction in individuals with bipolar disorder as compared with those with ADHD. Therefore, the impulsive behaviour seen in both disorders may be the consequence of dysfunction in different brain regions, and further research may help identify neurobiological markers that are specific to each condition.

European Child & Adolescent Psychiatry. 2009 Jul;18:447-57.

### **Full syndrome and subthreshold attention-deficit/hyperactivity disorder in a Korean community sample: Comorbidity and temperament findings.**

**Cho SC, Kim BN, Kim Jw, et al.**

**OBJECTIVE:** The main objective of this study was to investigate the comorbid disorders and temperamental profiles of full syndrome and subthreshold attention-deficit/hyperactivity disorder (ADHD).

**METHOD:** A sample of 2,493 students was randomly selected from six representative elementary schools in Seoul, Korea. Among 245 children with full syndrome and subthreshold ADHD diagnosed by the diagnostic interview schedule for children-4th version, parents of 185 subjects (mean age 9.0 +/- 1.7 years) and of a random sample of 185 age- and gender-matched non-ADHD children have completed the parent's version of the children behavior checklist (CBCL) and the juvenile temperament and character inventory (JTIC).

Per la ricerca degli articoli pubblicati nella letteratura scientifica nel mese in esame sono state consultate le banche dati Medline, Embase, PsycINFO e PsycArticle utilizzando le seguenti parole chiave (o i loro sinonimi): 'Attention deficit disorder', 'Attention deficit hyperactivity disorder', 'Infant', 'Child', 'Adolescent', 'Human'. Sono qui riportate le referenze considerate rilevanti e pertinenti.

**RESULTS:** The prevalence rates of full syndrome and subthreshold ADHD were, respectively, 5.90% (95% confidence interval = 4.74-7.06) and 9.00% (95% confidence interval = 7.58-10.41). Subthreshold ADHD cases did not differ from full syndrome ADHD in any JTCI profile, showing high novelty seeking/low persistence/low self-directedness than controls. Subthreshold ADHD also showed increased risk for externalizing disorders and higher scores in eight CBCL scales (somatic complaints, anxious/depressed, social problems, attention problems, delinquent behaviors, aggressive behaviors, externalizing problems and total behavioral problems) compared to the controls.

**CONCLUSIONS:** These results support the clinical relevance of subthreshold ADHD in Asian culture. Increased clinical awareness for children with subthreshold ADHD is needed.

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Journal of Attention Disorders. 2009 Jul;13:56-65.

**Sensitivity and specificity of long wave infrared imaging for attention-deficit/hyperactivity disorder.**

**Coben R, Myers TE.**

**Objective:** This study was the first to investigate the efficacy of long wave infrared (LWIR) imaging as a diagnostic tool for ADHD.

**Method:** This study was conducted to assess the sensitivity and specificity of LWIR imaging as a method of diagnosis among 190 patients (ages 4.4-57 years) with various diagnoses, including ADHD, who came into our office for neuropsychological evaluation.

**Results:** LWIR imaging demonstrated a moderate level of sensitivity (65.71%) in identifying patients with ADHD and a high level of specificity (94%) in discriminating those with ADHD from those with other diagnoses. The overall classification rate was 73.16%. This was indicative of a high level of discriminant validity in distinguishing between patients with and without ADHD. There was a moderate level of agreement between LWIR imaging and multiple other diagnostic tests for ADHD.

**Conclusions:** LWIR imaging demonstrated high sensitivity and specificity as a diagnostic tool for ADHD. These results provide evidence for the efficacy of a novel, quick, and effective way to investigate the physiological basis of one of the most prevalent childhood psychiatric disorders.

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European Child & Adolescent Psychiatry. 2009 Jul;18:393-99.

**Sleep disturbances and serum ferritin levels in children with attention-deficit/hyperactivity disorder.**

**Cortese S, Konofal E, Bernardina BD, et al.**

**BACKGROUND:** A subset of children with attention-deficit/hyperactivity disorder (ADHD) may present with impairing sleep disturbances. While preliminary evidence suggests that iron deficiency might be involved into the pathophysiology of daytime ADHD symptoms, no research has been conducted to explore the relationship between iron deficiency and sleep disturbances in patients with ADHD. The aim of this study was to assess the association between serum ferritin levels and parent reports of sleep disturbances in a sample of children with ADHD.

**METHODS:** Subjects: Sixty-eight consecutively referred children (6-14 years) with ADHD diagnosed according to DSM-IV criteria using the semi-structured interview Kiddie-SADS-PL. Measures: parents filled out the Sleep Disturbance Scale for Children (SDSC) and the Conners Parent Rating Scale (CPRS). Serum ferritin levels were determined using the Tinaquant method.

**RESULTS:** Compared to children with serum ferritin levels  $\geq 45$  microg/l, those with serum ferritin levels  $< 45$  microg/l had significantly higher scores on the SDSC subscale "Sleep wake transition disorders" (SWTD) ( $P = 0.042$ ), which includes items on abnormal movements in sleep, as well as significantly higher scores on the CPRS-ADHD index ( $P = 0.034$ ). The mean scores on the other SDSC subscales did not significantly differ between children with serum ferritin  $\geq 45$  and  $< 45$  microg/l. Serum ferritin levels were inversely correlated to SWTD scores ( $P = 0.043$ ).

**CONCLUSION:** Serum ferritin levels  $< 45$  microg/l might indicate a risk for sleep wake transition disorders, including abnormal sleep movements, in children with ADHD. Our results based on questionnaires set the basis for further actigraphic and polysomnographic studies on nighttime activity and iron deficiency in ADHD. Research in this field may suggest future trials of iron supplementation (possibly in association with ADHD medications) for abnormal sleep motor activity in children with ADHD.

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Journal of Attention Disorders. 2009 Sep;13:188-96.

**Comorbidity/overlapping between ADHD and PTSD in relation to IQ among children of traumatized/non-traumatized parents.**

**Daud A, Rydelius PA.**

**OBJECTIVE:** This study explores the comorbidity between symptoms of ADHD and PTSD in relation to IQ among refugee children of traumatized parents (TP) and non-traumatized parents (NTP).

**METHOD:** The study compares 80 refugee children, 40 with TP with 40 with NTP. ADHD and PTSD are assessed using DICA. Children's cognitive functions are measured by WISC. Teacher ratings of YCI and SDQ are performed.

**RESULTS:** Overlapping between ADHD and PTSD symptoms are represented among children with TP. Cognitive functions, related to ADHD and PTSD, reveal associations between low IQ (<84) and having both ADHD and PTSD among children with TP.

**CONCLUSIONS:** Concerns are raised about how ADHD and PTSD symptoms in a child are to be interpreted. Some overlapping exists between the two syndromes, but further studies should determine whether true comorbidity exists between ADHD and PTSD symptoms to better understand how to correctly diagnose and treat refugee children with TP.

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Scandinavian Journal of Psychology. 2009 Aug;50:347-54.

**Differentiating between ADHD sub-types on CCPT measures of sustained attention and vigilance.**

**Egeland J, Johansen SN, Ueland T.**

The aim of the study was to test whether sustained attention and vigilance, often considered as the same phenomenon, dissociate on the Conners' Continuous Performance Test, and whether subjects with ADHD-Inattentive type and ADHD-Combined type differ with regard to these measures. Sixty-five healthy controls and 67 subjects with ADHD between 9 and 16 years of age participated in the study. The ADHD-I group performed below control children on Hit Reaction Time Block Change, considered to measure sustained attention and the ADHD-C group scored below controls on Hit Reaction Time Inter-Stimulus-Interval, considered to measure vigilance. Comparing the two clinical groups showed a test by group interaction, with ADHD-I subjects performing below ADHD-C subjects with regard to sustained attention and above ADHD-C subjects with regard to vigilance. Sustained attention on the CCPT correlated specifically with parent and teacher ratings of inattention, but not with ratings of hyperactivity-impulsivity, while vigilance correlated with all symptom ratings.

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Journal of Attention Disorders. 2009 Jul;13:78-86.

**A linguistic analysis of in-office dialogue among psychiatrists, parents, and child and adolescent patients with ADHD.**

**Findling RL, Connor DF, Wigal T, et al.**

**OBJECTIVE:** The aim was to evaluate in-office discussions of ADHD and psychiatric comorbidities.

**METHOD:** Naturally occurring interactions among 11 psychiatrists, 32 patients and their parents were recorded, with a focus on "complicated" patients (i.e., having or suspected to have  $\geq 1$  psychiatric comorbidities and/or learning disabilities in addition to ADHD). Participants were interviewed separately post visit. Transcripts were analyzed using validated sociolinguistic methodologies.

**RESULTS:** Some 62% of patients were male, with an average age of 12.5 years, and 79% had a family history of ADHD. Visits were psychiatrist-driven, focusing on medication management and school performance, leaving management of comorbidities largely unaddressed. Post visit, 78% of parents and psychiatrists disagreed on patients' "most concerning behavior." Parents most often reported concern about aggression and oppositionality. Psychiatrists and parents emphasized different aspects of patients' personality, using deficit- and strength-based models, respectively.

**CONCLUSION:** Psychiatrists and parents interpreted the relationship between ADHD and comorbidities differently. The significant incidence of misalignment regarding worrisome behaviors warrants further exploration.

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Journal of Family Issues. 2009 Sep;30:1155-74.

**A qualitative study of families and children possessing diagnoses of ADHD.**

**Firmin MW, Phillips A.**

This phenomenological research study replicates R. Segal's (1998) study of 17 Canadian families. The authors interview 17 American families participating in the national support group Children and Adults with Attention Deficit Disorder, focusing on the challenges they face in rearing children diagnosed with ADHD. Three particular themes emerge. First, the parents appear to be attuned to their children's needs and report being proactive in making adaptations and interventions when needed to accomplish family objectives. Second, the results are generally congruent with those reported by Segal. In both cases, mornings and afternoons are vulnerable times for the families. Segal found mornings most difficult, however, whereas families in this study relate homework periods in the afternoons to be most challenging. Third, parental strategies are salient for successfully rearing children with ADHD. The families emphasize the constructs of routine and structure as being paramount to navigating daily life successfully.

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Journal of Child Psychology and Psychiatry. 2009 Jul;50:780-89.

**Is neurofeedback an efficacious treatment for ADHD? A randomised controlled clinical trial.**

**Gevensleben H, Holl B, Albrecht Br, et al.**

**BACKGROUND:** For children with attention deficit/hyperactivity disorder (ADHD), a reduction of inattention, impulsivity and hyperactivity by neurofeedback (NF) has been reported in several studies. But so far, unspecific training effects have not been adequately controlled for and/or studies do not provide sufficient statistical power. To overcome these methodological shortcomings we evaluated the clinical efficacy of neurofeedback in children with ADHD in a multisite randomised controlled study using a computerised attention skills training as a control condition.

**METHODS:** 102 children with ADHD, aged 8 to 12 years, participated in the study. Children performed either 36 sessions of NF training or a computerised attention skills training within two blocks of about four weeks each (randomised group assignment). The combined NF treatment consisted of one block of theta/beta training and one block of slow cortical potential (SCP) training. Pre-training, intermediate and post-training assessment encompassed several behaviour rating scales (e.g., the German ADHD rating scale, FBB-HKS) completed by parents and teachers. Evaluation ('placebo') scales were applied to control for parental expectations and satisfaction with the treatment.

**RESULTS:** For parent and teacher ratings, improvements in the NF group were superior to those of the control group. For the parent-rated FBB-HKS total score (primary outcome measure), the effect size was .60. Comparable effects were obtained for the two NF protocols (theta/beta training, SCP training). Parental attitude towards the treatment did not differ between NF and control group.

**CONCLUSIONS:** Superiority of the combined NF training indicates clinical efficacy of NF in children with ADHD. Future studies should further address the specificity of effects and how to optimise the benefit of NF as treatment module for ADHD.

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J Child Adolesc Psychopharmacol. 2009 Jun;19:227-32.

**Effects of application to two different skin sites on the pharmacokinetics of transdermal methylphenidate in pediatric patients with attention-deficit/hyperactivity disorder.**

**González MA, Campbell D, Rubin J.**

**OBJECTIVE:** This study was conducted to quantify the rate and extent of methylphenidate (MPH) absorption from a transdermal system when applied to two different skin sites in pediatric subjects with attention-deficit/hyperactivity disorder (ADHD).

**METHODS:** In an open-label, single-dose, randomized, two-way crossover study, children (6-12 years) with ADHD were randomized to wear one MPH transdermal system (MTS) on the hip area or on the scapular area for 16 hours. The following week, subjects were crossed over to the opposite application site. Serial blood samples were collected after each MTS application and pharmacokinetic (PK) parameters for d,l-MPH were calculated. Worn MTS units were assayed to calculate the Apparent Dose absorbed from MTS.

**RESULTS:** PK analyses included 23 subjects. Hip and scapular application resulted in quantifiable levels of d,l-MPH, with approximately 31% higher bioavailability upon hip application. Logarithm transformed mean ratios for area under the curve (AUC) and C(max) indicated a lack of equivalence between the two sites.

**CONCLUSION:** MTS applied to both hip and scapular areas resulted in quantifiable plasma levels of d,l-MPH. Bioavailability of MPH from the same transdermal delivery system appears to differ substantially when applied to two different skin surfaces in young children but with similar overall skin effects assessments.

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J Autism Dev Disord. 2009 Jul;39:976-85.

**Oppositional Defiant and Conduct Disorder Behaviors in boys with autism spectrum disorder with and without attention-deficit hyperactivity disorder versus several comparison samples.**

**Guttman-Steinmetz S, Gadow KD, DeVincent CJ.**

We compared disruptive behaviors in boys with either autism spectrum disorder (ASD) plus ADHD (n = 74), chronic multiple tic disorder plus ADHD (n = 47), ADHD Only (n = 59), or ASD Only (n = 107). Children were evaluated with parent and teacher versions of the Child Symptom Inventory-4 including parent- (n = 168) and teacher-rated (n = 173) community controls. Parents rated children in the three ADHD groups comparably for each symptom of oppositional defiant disorder (ODD) and conduct disorder. Teacher ratings indicated that the ASD + ADHD group evidenced a unique pattern of ODD symptom severity, differentiating them from the other ADHD groups, and from the ASD Only group. The clinical features of ASD appear to influence comorbid, DSM-IV-defined ODD, with implications for nosology.

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Journal of Attention Disorders. 2009 Jul;13:3-17.

**Rethinking a right hemisphere deficit in ADHD.**

**Hale TS, Loo SK, Zaidel E, et al.**

Early observations from lesion studies suggested right hemisphere (RH) dysfunction in ADHD. However, a strictly right-lateralized deficit has not been well supported. An alternative view suggests increased R > L asymmetry of brain function and abnormal interhemispheric interaction. If true, RH pathology in ADHD should reflect interhemispherically networked and over activated functioning. The authors evaluated these assertions. Method: Four elements of lateralized brain function were measured: LH specialized, RH specialized, LH with interhemispheric processing (LH/IH), and RH with interhemispheric processing (RH/IH). Next, the authors tested their association with cognitive ability, psychiatric comorbidity, and sibling correlations in 79 children with ADHD. Results: RH/IH processing was uniquely associated with other outcome measures. There were no associations for independent RH or LH function alone. Conclusion: Interhemispherically networked RH processing is critical in ADHD. In addition, lack of association between LH specialized processing and cognitive ability (especially for verbal cognitive tasks) supports increased RH mediation of task processing.

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Journal of Divorce & Remarriage. 2009 Aug;50:427-43.

**The relationship between divorce and children with AD/HD of different subtypes and comorbidity: Results from a clinically referred sample.**

**Heckel LD, Clarke AR, Barry RJ, et al.**

This study investigated the relationship between divorce and the symptom profile of children with attention deficit/hyperactivity disorder (AD/HD). The files of 1,201 children from a pediatric practice in Sydney, Australia were used in this study. Children were aged 6 to 18 years, and were diagnosed with either the inattentive or combined type of AD/HD. Results show that 213 children had parents who were divorced. Children with the combined type, and especially boys with comorbid conduct disorder/oppositional defiant disorder (CD/ODD) were more common in the divorced group, and children of the inattentive type with comorbid learning disabilities were overrepresented in nondivorced families. Results suggest that divorce is associated with disruptive behavior patterns in children with AD/HD. The importance of including marital status as an important correlate in AD/HD treatment outcomes is discussed.

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European Child & Adolescent Psychiatry. 2009 Jul;18:429-38.

**Parental rating of sleep in children with attention deficit/hyperactivity disorder.**

**Hvolby A, JÅrgensen J, Bilenberg N.**

**Objective:** Sleep problems have often been associated with attention deficit/hyperactivity disorder (ADHD). Parents of those with ADHD and children with ADHD report sleep difficulties more frequently than healthy children and their parents. The primary objective of this paper is to describe sleep patterns and problems of 5 to 11-year-old children suffering from ADHD as described by parental reports and sleep questionnaires.

**Method:** The study included 321 children aged 5-11 years (average age 8.4 years); 45 were diagnosed with ADHD, 64 had other psychiatric diagnoses, and 212 were healthy. One hundred and ninety-six of the test subjects were boys and 125 were girls. A semistructured interview (Kiddie SADS-PL) was used to DSM-IV diagnose ADHD and comorbidity in the clinical group. Sleep difficulties were rated using a structured sleep questionnaire (Children Sleep Behaviour Scale).

**Results:** Children diagnosed with ADHD had a significantly increased occurrence of sleep problems. Difficulties relating to bedtime and unsettled sleep were significantly more frequent in the ADHD group than in the other groups. Children with ADHD showed prolonged sleep onset latency, but no difference was shown regarding numbers of awakenings per night and total sleep time per night. Comorbid oppositional defiant disorder appeared not to have an added effect on problematic behaviour around bedtime.

**Conclusion:** Parents of children with ADHD report that their children do not sleep properly more often than other parents. The ADHD group report problems with bedtime resistance, problems with sleep onset latency, unsettled sleep and nightmares more often than the control groups. It may therefore be relevant for clinicians to initiate a closer examination of those cases reporting sleep difficulties.

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Journal of Attention Disorders. 2009 Jul;13:97-98.

**Review of 'ADHD in adults: What the science says'.**

**Jensen PS.**

Reviews the book, "ADHD in adults: What the science says" by R. A. Barkley, K. R. Murphy, and M. Fischer (see record 2007-18100-000). The authors of this book draw on the careful longitudinal work from the Milwaukee study and compare and contrast the outcomes of these children and a control sample, with findings from the UMASS study of adults with ADHD. The authors retained the careful and complete descriptions of their methods and measures, they moved substantial parts of this material to sidebars or table inserts so that readers could proceed fairly rapidly with the narrative flow of their findings and implications without becoming derailed by methodologic details. The authors also organized the presentation of methods and findings into major topical areas of interest, starting first with the history of ADHD in adults, definitions, and criteria for adult ADHD, including how ADHD was defined in the UMASS and Milwaukee studies, impairment, comorbidity, educational and occupational function, lifestyle, substance use, family and parenting function, and neuropsychological functioning.

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Psychology in the Schools. 2009 Aug;46:658-78.

**Emotion, understanding, and social skills among boys at risk of attention deficit hyperactivity disorder.**

**Kats-Gold I, Priel B.**

There is growing interest in the role of emotional competence in middle school children's adjustment and functioning, yet many populations remain underresearched. Few studies have explored the emotional competence, especially emotion understanding, of children with, or at risk of, attention deficit hyperactivity disorder (ADHD), and even fewer have examined the role emotion understanding plays in these children's social skills. Our study investigates a profile of the emotion understanding capacities of Israeli boys at risk of ADHD and evaluates its association with their social skills. One hundred and fifty-two boys (grades 4-6) were each assigned to an at-risk (n = 66) or comparison (n = 86) group based on their scores on an ADHD symptoms questionnaire (Conners Rating System-Revised). The two groups were matched on age, socioeconomic status and class, and school environment. Group comparisons revealed that relative to their non-at-risk counterparts, at-risk boys demonstrated less mature emotion understanding. Finally, our findings indicate that poor emotion understanding plays a more notable role in the social functioning of at-risk than

non-at-risk children. This study's contribution to the understanding and school treatment of children with ADHD emotional and social competencies is discussed.

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Journal of Family Issues. 2009 Sep;30:1175-200.

**The management of courtesy stigma in the lives of families with teenagers with ADHD.**

**Koro-Ljungberg M, Bussing R.**

This qualitative study investigates how parents of adolescents with attention deficit hyperactivity disorder (ADHD) manage courtesy stigma in their lives. Focus groups are conducted with mothers and fathers of adolescents with ADHD who are part of a cohort study on ADHD detection and service use. Using grounded theory analysis, researchers find that parents react to external expectations put forward by various community networks, but they respond to an internalized sense of responsibility in the context of immediate family. In addition, parents' stigma management extends beyond coping with their child's disability, adding an extra layer of stressful demands that could be lessened through societal stigma reduction. To conclude, advice offered to families needs to be individualized, carefully matched with their current support networks and priorities, and needs to consider that certain stigma management approaches can perpetuate existing negative identity markers.

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Journal of Attention Disorders. 2009 Jul;13:18-26.

**Sleep problems in Chinese school-aged children with a parent-reported history of ADHD.**

**Li S, Jin X, Yan C, et al.**

**Objective:** The objective was to survey the prevalence of parent-reported ADHD diagnosis and to assess its associations with sleep problems among urban school-aged children in China.

**Method:** A random sample of 20,152 school-aged children participated in a cross-sectional survey in eight cities of China. A parent-administered questionnaire and the Children's Sleep Habits Questionnaire were completed to quantify history of ADHD diagnosis and sleep problems, respectively.

**Results:** Slightly more than 4% of Chinese school-aged children were reported to have a history of ADHD diagnosis. The multivariate regression models revealed that, after controlling for some confounders' such as gender, parents' educational level, family income, family structure, and stimulant medication' there was a higher prevalence of sleep problems, especially parasomnias, sleep-disordered breathing, and daytime sleepiness, in children with a history of ADHD diagnosis.

**Conclusion:** The results emphasized the importance of incorporating screens of sleep problems into the evaluation of ADHD.

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J Pediatr Psychol. 2009 Jul;34:681-89.

**Profiles of service utilization and the resultant economic impact in preschoolers with attention deficit/hyperactivity disorder.**

**Marks DJ, Mlodnicka A, Bernstein M, et al.**

**Objective:** To examine whether preschool children with Attention deficit/hyperactivity disorder (ADHD) utilize more speech and language therapy (ST), occupational therapy (OT), and physical therapy (PT) services and are more likely to be placed in special education (SPED) classrooms as compared to their peers. Corresponding financial consequences were also examined.

**Methods:** The amount of ST, OT, and PT, as well as SPED placements, was examined in 3- and 4-year-old children with and without ADHD (n = 109 and n = 97, respectively) during the baseline portion of an ongoing, 5-year longitudinal study. Costs for individual services and aggregate cost were determined per child and compared across groups.

**Results:** Preschool children with ADHD were more likely to receive individual and multiple services. Higher rates of service utilization translated into increased costs for each individual service with the exception of PT.

**Conclusions:** A comprehensive understanding of service utilization in the early years of development is

important in addressing the increased service use in the preschool years and assist in guiding allocation of resources.

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Journal of Child Psychology and Psychiatry. 2009 Jul;50:790-98.

**Conscientiousness as a mediator of the association between masculinized finger-length ratios and attention-deficit/hyperactivity disorder (ADHD).**

**Martel MM.**

**Background:** One often-overlooked biological risk factor that may help explain sex-biased prevalence rates in psychopathology is sex hormones. Personality traits, which also show sex differences, may mediate relations between biological risk factors like hormones and childhood psychopathology such as ADHD (or, alternatively, be independent risk factors).

**Methods:** Three hundred and twelve children/ adolescents (178 boys, 134 girls) between the ages of 8 and 17 completed a comprehensive, multistage, clinical diagnostic procedure; 168 children were diagnosed with ADHD and 144 were classified as non-ADHD comparison controls. Primary caregivers completed the California Q-sort in order to provide a measure of conscientiousness. Finger-length ratios (specifically right 2D:4D) served as a proxy of prenatal testosterone exposure (relative to estrogen).

**Results:** Lower levels of conscientiousness statistically mediated the relationship between more masculine right 2D:4D (i.e., increased prenatal testosterone exposure) and increased ADHD inattentive symptoms.

**Conclusion:** More masculinized finger-length ratios show associations with ADHD symptoms, possibly acting through the trait mechanism of conscientiousness.

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Family Process. 2009 Jun;48:232-52.

**Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: A pilot efficacy study.**

**Matos M, Bauermeister JJ, Bernal G.**

This study evaluates the initial efficacy of the Parent-Child Interaction Therapy (PCIT) for Puerto Rican preschool children aged 4-6 years with a diagnosis of attention-deficit/hyperactivity disorder (ADHD), combined or predominantly hyperactive type, and significant behavior problems. Thirty-two families were randomly assigned to PCIT (n = 20) or a 3.5-month waiting-list condition (WL; n = 12). Participants from both groups completed pretreatment and posttreatment assessments. Outcome measures included child's ADHD symptoms and behavior problems, parent or family functioning, and parents' satisfaction with treatment. ANCOVAs with pretreatment measures entered as covariates were significant for all posttreatment outcomes, except mother's depression, and in the expected direction ( $p < .01$ ). Mothers reported a highly significant reduction in pretreatment hyperactivity and inattention and less aggressive and oppositional-defiant behaviors, conduct problems assessed as problematic, parenting stress associated with their child's behavior, and an increase in the use of adequate parenting practices. For the WL group, there were no clinically significant changes in any measure. Treatment gains obtained after treatment were maintained at a 3.5-month follow-up assessment. PCIT seems to be an efficacious intervention for Puerto Rican families who have young children with significant behavior problems.

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Res Dev Disabil. 2009 Sep;30:884-90.

**The relationship between self-esteem and AD/HD characteristics in the serious juvenile delinquents in Japan.**

**Matsuura N, Hashimoto T, Toichi M.**

The purpose of this study was to clarify the following 2 points: (1) whether self-esteem changes after correctional education, and (2) whether attention deficit/hyperactivity characteristics affect self-esteem. The subjects were 118 juveniles (all males) admitted to a juvenile correctional facility. Our findings indicated that during the correctional education period, changes in self-esteem were limited. The AD/HD-YSR attention deficit score was negatively correlated with the self-esteem score on admission but was not associated with the self-esteem score at the time of parole. Next, the subjects were classified according to the self-esteem score. Consequently, the attention deficit score was significantly associated with self-esteem in all groups. Our results were suggested that total AD/HD-YSR score in the high self-esteem group was

lower than that in the other groups. Our cross-sectional surveys have shown an association between the AD/HD-YSR score and self-esteem, suggesting the influences of developmental problems on self-esteem. Research implications were discussed.

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Journal of the American Academy of Child & Adolescent Psychiatry. 2009 Jul;48:757-64.

**Genetic risk for conduct disorder symptom subtypes in a ADHD sample: Specificity to aggressive symptoms.**

**Monuteaux MC, Biederman J, Doyle AE, et al.**

**Objective:** Recent studies have suggested an association between candidate genes (i.e., COMT, SLC6A4) and conduct disorder (CD). However, it is not clear if these relations extend to CD within the context of attention-deficit/hyperactivity disorder (ADHD). Also, it is uncertain whether the risk is specific to aggressive symptoms or is a risk for CD generally. The aim of this study was to examine the role of the COMT and SLC6A4 genes in the risk for CD and its symptomatic subtypes in the context of ADHD.

**Method:** We examined subjects with ADHD (n = 444, age range 6-55 years) aggregated across four completed studies. Psychiatric diagnoses were determined by structured interviews. We tested the association between genotype and the diagnosis of CD and aggressive and covert symptom counts.

**Results:** There was no significant association between variations in functional polymorphisms of either the COMT gene or the SLC6A4 gene and the risk for CD. The COMT gene was associated with increased aggressive CD symptoms but not covert CD symptoms. The SLC6A4 gene was not associated with either symptom subtype.

**Conclusions:** These findings contribute to our understanding of the genetic basis of antisocial behavior in the ADHD population and provide additional support for the notion that aggressive and covert CD symptom subtypes are etiologically distinct.

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Journal of Child and Family Studies. 2009 Jun;18:356-64.

**Estimated risk of developing selected DSM-IV disorders among 5-year-old children with prenatal cocaine exposure.**

**Morrow CE, Accornero VH, Xue L, et al.**

We estimated childhood risk of developing selected DSM-IV Disorders, including Attention-Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Separation Anxiety Disorder (SAD), in children with prenatal cocaine exposure (PCE). Children were enrolled prospectively at birth (n = 476) with prenatal drug exposures documented by maternal interview, urine and meconium assays. Study participants included 400 African-American children from the birth cohort, 208 cocaine-exposed (CE) and 192 non-cocaine-exposed (NCE), who attended a 5-year follow-up assessment and whose caregiver completed the Computerized Diagnostic Interview Schedule for Children. Under a generalized linear model (logistic link), Fisher's exact methods were used to estimate the PCE-associated relative risk (RR) of these disorders. Our results indicated a modest but statistically robust elevation of ADHD risk associated with increasing levels of PCE ( $p < 0.05$ ). Binary comparison of CE versus NCE children indicated no PCE-associated RR. Estimated cumulative incidence proportions among CE children were 2.9% for ADHD (vs 3.1% NCE); 1.4% for SAD (vs 1.6% NCE); and 4.3% for ODD (vs 6.8% NCE). Our findings suggest evidence of increased risk of ADHD (but not ODD or SAD) in relation to an increasing gradient of PCE during gestation.

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Journal of Family Nursing. 2009 Aug;15:318-42.

**Patterns of parenting in Korean mothers of children with ADHD: A Q-methodology study.**

**Oh WO, Kendall J.**

The purpose of this study was to investigate patterns of parenting in Korean mothers of children with attention-deficit/hyperactivity disorder (ADHD) and identify major threads that structured various patterns of parenting. Q-methodology, a technique for extracting subjective attitudes, was used for data collection and analysis. Participants were asked to sort statements on issues associated with parenting. Factor analysis was applied to identify patterns in the ranking of statements. Participants were 45 Korean mothers of children with ADHD. As a result, three patterns of parenting emerged: Praise' Fairness, Strict' Control, and

Sensitive Response' Balanced. These patterns differed on two axes: external and internal control and positive and negative reinforcement. This study provides an opportunity to enhance our understanding of the parenting patterns of mothers of children with ADHD in Korea. The findings can function as a cornerstone for developing future models of parenting children with ADHD and parent' child interactions.

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Journal of the American Academy of Child & Adolescent Psychiatry. 2009 Aug;48:837-46.

**Are ADHD symptoms associated with delay aversion or choice impulsivity? A general population study.**

**Paloyelis Y, Asherson P, Kuntsi J.**

**Objective:** The term delay aversion has been used both to describe a behavioral tendency of greater preference for smaller-immediate over larger-delayed rewards (choice impulsivity) and to refer to a secondary explanatory construct put forward by delay aversion theory. In this study, we examined the association of attention-deficit/hyperactivity disorder (ADHD) symptoms with choice impulsivity and tested the specific hypothesis derived from delay aversion theory.

**Method:** A total of 1,062 children aged 7.90 to 10.90 years (49% girls) made a fixed number of repeated choices between a smaller reward delivered immediately and a larger reward delivered after a delay (choice-delay task), under two conditions (including and excluding a postreward delay). We assessed the unique contribution of each ADHD symptom dimension to the prediction of choice impulsivity and delay aversion, controlling for age (or age and IQ). Sex effects were examined.

**Results:** Inattention ratings uniquely predicted preference for smaller-immediate rewards under both task conditions for both sexes. An index of delay aversion was associated with inattention only in boys; the effect size was small yet significant. Hyperactivity-impulsivity ratings were negatively associated with choice impulsivity in girls in the postreward delay condition, whereas no significant association with hyperactivity-impulsivity ratings was observed in boys. Categorical analyses using groups with high ADHD symptoms yielded similar results.

**Conclusions:** This is the first study to report a unique association between inattention symptoms and behavioral measures of choice impulsivity and delay aversion. The findings indicate the importance of the primary constitutional processes that underlie choice impulsivity and their potential role in behavioral inattention. Understanding the behavioral and brain processes underlying choice impulsivity may lead to the improved targeting of behavioral and pharmacological interventions.

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Schizophr Res. 2009 Jul;112:104-13.

**Attentional set-shifting ability in first-episode and established schizophrenia: Relationship to working memory.**

**Pantelis C, Wood SJ, Proffitt TM, et al.**

Patients with established schizophrenia perform poorly on attentional set-shifting tasks, due to a failure of inhibitory control and/or perseverative errors. However, attentional set-shifting is also dependent on working memory capacity, which is additionally impaired in schizophrenia. No studies in first-episode psychosis have specifically examined the contribution of working memory to set-shifting ability in schizophrenia. We investigated 48 first-episode schizophreniform psychosis/schizophrenia (FE) and 40 chronic schizophrenia (CHR) patients, compared to 67 comparable healthy subjects (CTL). All subjects were assessed using the CANTAB 'attentional set-shifting (IDED)' and 'spatial working memory (SWM)' tasks. Both FE and CHR made significantly greater errors on the SWM task ( $p < 0.001$ ). Compared with CTL, CHR was more likely to fail at intra-dimensional ( $p < 0.05$ ) and extra-dimensional ( $p < 0.01$ ) shifting and reversal stages of IDED; CHR required significantly greater trials to reach criterion, which was not explained by deficits in SWM ( $p < 0.001$ ). FE did not differ from CTL on IDED level reached. However, FE required significantly more trials ( $p = 0.001$ ); this was no longer significant after controlling for SWM deficits ( $p > 0.05$ ). Given that the capacity to be flexible and shift attentional set is intact only at the early stages of illness, 'neurodegenerative' processes may explain the more severe deficits in chronic schizophrenia. In contrast, deficits in SWM identified at all stages of schizophrenia may reflect incomplete maturation prior to illness onset ('neurodevelopmental arrest'). Longitudinal studies assessing these cognitive functions from illness onset or in prepsychotic individuals are required.

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Psychol Assess. 2009 Sep;21:380-89.

**Developing a measure of sluggish cognitive tempo for children: Content validity, factor structure, and reliability.**

**Penny AM, Waschbusch DA, Klein RM, et al.**

Sluggish cognitive tempo (SCT) is a construct that some researchers believe may be extremely useful in understanding the inattentive subtype of attention-deficit/hyperactivity disorder, and may even help define a completely new disorder. However, the construct of SCT is as yet inadequately operationally or theoretically defined. The authors took the first steps toward developing an empirically supported measure of SCT in children. In Study 1, potential items to measure SCT were identified from a literature review, content validity of the items was evaluated by a group of experts, and a preliminary set of SCT items were selected. In Study 2, ratings completed by parents and teachers of 335 children (ages 4–13) were used to further develop and evaluate the SCT items by computing factor analyses, item-level analyses, reliability analyses, and preliminary validity analyses. The final SCT scale (14 items) produced a total scale score and 3 subscale scores: Slow, Sleepy, and Daydreamer. These scales were constructed with good content validity and were found to have strong reliability. Future directions include replication, extension into a clinical population, and further examination of validity.

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Journal of Attention Disorders. 2009 Jul;13:66-77.

**Distinct response time distributions in attention deficit hyperactivity disorder subtypes.**

**Querne L, Berquin P.**

**Objective:** To address the issue of response time (RT) profiles in hyperactive-impulsive (ADHD-HI), inattentive (ADHD-IA), and combined (ADHD-C) subtypes of ADHD. We hypothesized that children with ADHD-HI should respond more rapidly than children without ADHD and children with ADHD-IA and ADHD-C should respond more slowly than children without ADHD.

**Method:** Four groups (3 ADHD groups and 1 non-ADHD group) each composed of 16 children (7-13 years old) performed a visuospatial choice task.

**Results:** ANOVA indicated very variable RTs for each ADHD subtype when controlling for individual RT. ANOVA performed on RT distribution showed significant differences between the ADHD and non-ADHD groups: biased to fast responses in ADHD-HI and biased to slow responses in ADHD-IA and ADHD-C.

**Conclusion:** The results suggest that response time profiles were abnormal in all ADHD subtypes and were markedly different between children meeting criteria for ADHD-HI and those meeting criteria for ADHD-IA or ADHD-C.

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Journal of Child Psychology and Psychiatry. 2009 Jun;50:669-78.

**Shared and disorder-specific prefrontal abnormalities in boys with pure attention-deficit/hyperactivity disorder compared to boys with pure CD during interference inhibition and attention allocation.**

**Rubia K, Halari R, Smith AB, et al.**

**Background:** Inhibitory and attention deficits have been suggested to be shared problems of disruptive behaviour disorders. Patients with attention deficit hyperactivity disorder (ADHD) and patients with conduct disorder (CD) show deficits in tasks of attention allocation and interference inhibition. However, functional magnetic resonance imaging (fMRI) of inhibitory and attention control has only been investigated in patients with ADHD, including comorbidity with CD, finding fronto-striatal and temporoparietal dysfunction. This study investigates differences and commonalities in functional neural networks mediating interference inhibition and attention allocation between medication-naïve children and adolescents with pure CD and those with pure ADHD.

**Methods:** Event-related fMRI was used to compare brain activation of 13 boys with non-comorbid CD, 20 boys with non-comorbid ADHD and 20 healthy comparison boys during a Simon task that measures interference inhibition and controls for attention allocation, thus tapping into interference inhibition and selective attention networks.

**Results:** During interference inhibition, both patient groups shared reduced activation compared to controls in right superior temporal lobe and in predominantly right precuneus. During the oddball condition, both patient groups showed reduced activation compared to healthy control children in right medial prefrontal lobe. However, only ADHD patients showed a disorder-specific under-activation compared to the other two groups in an extensive activation cluster in left inferior prefrontal cortex.

**Conclusions:** This study shows shared dysfunction in both patients groups in right hemispheric temporal and parietal brain regions during interference inhibition and in right dorsolateral prefrontal cortex during attention allocation. Ventrolateral prefrontal dysfunction, however, was specific to ADHD and not observed in patients with CD in the context of attention allocation. The findings suggest that the typically reduced functional activation in patients with ADHD in ventrolateral prefrontal cortex may be specific to the disorder, at least when compared to patients with CD.

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Arch Gen Psychiatry. 2009 Aug;66:888-96.

**Development of cortical asymmetry in typically developing children and its disruption in attention-deficit/hyperactivity disorder.**

**Shaw P, Lalonde F, Lepage C, et al.**

**Context:** Just as typical development of anatomical asymmetries in the human brain has been linked with normal lateralization of motor and cognitive functions, disruption of asymmetry has been implicated in the pathogenesis of neurodevelopmental disorders such as attention-deficit/hyperactivity disorder (ADHD). No study has examined the development of cortical asymmetry using longitudinal neuroanatomical data. **Objective:** To delineate the development of cortical asymmetry in children with and without ADHD.

**Design:** Longitudinal study. **Setting:** Government Clinical Research Institute. **Participants:** A total of 218 children with ADHD and 358 typically developing children, from whom 1133 neuroanatomical magnetic resonance images were acquired prospectively.

**Main Outcome Measures:** Cortical thickness was estimated at 40 962 homologous points in the left and right hemispheres, and the trajectory of change in asymmetry was defined using mixed-model regression.

**Result:** In right-handed typically developing individuals, a mean (SE) increase in the relative thickness of the right orbitofrontal and inferior frontal cortex with age of 0.011 (0.0018) mm per year ( $t(337) = 6.2, P < .001$ ) was balanced against a relative left-hemispheric increase in the occipital cortical regions of 0.013 (0.0015) mm per year ( $t(337) = 8.1, P < .001$ ). Age-related change in asymmetry in non-right-handed typically developing individuals was less extensive and was localized to different cortical regions. In ADHD, the posterior component of this evolving asymmetry was intact, but the prefrontal component was lost.

**Conclusions:** These findings explain the way that, in typical development, the increased dimensions of the right frontal and left occipital cortical regions emerge in adulthood from the reversed pattern of childhood cortical asymmetries. Loss of the prefrontal component of this evolving asymmetry in ADHD is compatible with disruption of prefrontal function in the disorder and demonstrates the way that disruption of typical processes of asymmetry can inform our understanding of neurodevelopmental disorders.

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Journal of Attention Disorders. 2009 Sep;13:117-26.

**Attention deficit/hyperactivity disorder in children and adolescents with autism spectrum disorder: Symptom or syndrome?**

**Sinzig J, Walter D, Doepfner M.**

**Objective:** This study aims to evaluate ADHD-like symptoms in children with autism spectrum disorder (ASD) based on single-item analysis, as well as the comparison of two ASD subsamples of children with ADHD (ASD+) and without ADHD (ASD-).

**Methods:** Participants are 83 children with ASD. Dimensional and categorical aspects of ADHD are evaluated using a diagnostic symptom checklist according to DSM-IV.

**Results:** Of the sample, 53% fulfill DSM-IV criteria for ADHD. The comparison of the ASD+ and the ASD- samples reveals differences in age and IQ. Correlations of ADHD and PDD show significant results for symptoms of hyperactivity with impairment in communication and for inattention with stereotyped behavior. Item profiles of ADHD symptoms in the ASD+ sample are similar to those in a pure ADHD sample.

**Conclusion:** The results of our study reveal a high phenotypical overlap between ASD and ADHD. The two identified subtypes, inattentive-stereotyped and hyperactive-communication impaired, reflect the DSM classification and may theoretically be a sign of two different neurochemical pathways, a dopaminergic and a serotonergic.

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Early Childhood Services: An Interdisciplinary Journal of Effectiveness. 2009 Jun;3:127-42.

**A summary of home-based functional analysis data for young children with or at risk for attention-deficit/hyperactivity disorder.**

**Sokol NG, Kern L, Arbolino LA, et al.**

As early identification of children with or at risk for attention-deficit/hyperactivity Disorder (ADHD) improves, it is imperative to ascertain the nature of intervention approaches that will effectively reduce or eliminate associated problems. Assessment-based intervention has shown great promise for its efficacy and efficiency. Furthermore, an understanding of common behavioral intentions among young children with symptoms of ADHD may facilitate intervention development. In the current study, we analyzed home-based functional analysis data from 42 preschool-aged children. Consistent with previous summative functional analysis research in the field of developmental disabilities, escape emerged as the most common function. Additional analyses provide insight into potential differences across gender, age, and diagnostic subtype.

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Journal of Attention Disorders. 2009 Sep;13:107-16.

**Reliability of DSM-IV symptom ratings of ADHD: Implications for DSM-V.**

**Solanto MV, Alvir J.**

**OBJECTIVE:** The objective of this study was to examine the intrarater reliability of DSM-IV ADHD symptoms.

**METHOD:** Two-hundred-two children referred for attention problems and 49 comparison children (all 7-12 years) were rated by parents and teachers on the identical DSM-IV items presented in two different formats, the SNAP-IV and Conners' Revised Questionnaires, at two closely spaced points in time.

**RESULTS:** For the combined sample, weighted kappa scores for intrarater agreement ranged from .30 ("fair") to .77 ("good") across symptoms. Kappa scores were good with respect to agreement on the DSM-IV criterion of endorsement of at least six symptoms in a given cluster for Inattention (.60 and .76, for parents and teachers, respectively) and Hyperactivity-Impulsivity (.72 and .75, respectively). Kappas for identification of cases as AD/HD or not AD/HD were good to excellent (.67 and .79 for parents and teachers, respectively). Classification as AD/HD or not AD/HD changed from the first to the second rating in 12% and 10% of cases rated parents and teachers, respectively.

**CONCLUSION:** Reliability of individual ADHD symptoms appears to be suboptimal for clinical and research use and is improved, although less than ideal, at the levels of cluster endorsement and case classification.

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Journal of Attention Disorders. 2009 Jul;13:27-35.

**Social functioning in predominantly inattentive and combined subtypes of children with ADHD.**

**Solanto MV, Pope-Boyd SA, Tryon WW, et al.**

**Objective:** The objective of this study was to compare the social functioning of children with the Combined (CB) and Predominantly Inattentive (PI) subtypes of Attention Deficit/Hyperactivity Disorder (ADHD), controlling for comorbidity and medication-status, which may have confounded the results of previous research.

**Method:** Parents and teachers of rigorously diagnosed unmedicated children with PI or CB subtypes of ADHD, and typical comparison children, rated them on the multidimensional Social Skills Rating Scale (SSRS).

**Results:** After co-varying for oppositionality and anxiety, social impairment was substantial and equivalent in both ADHD groups whether rated by parent or teacher. In addition, when rated by teacher, the nature of the deficits varied by subtype: Children with PI were impaired in assertiveness, whereas children with CB were deficient in self-control. These findings indicate that AD/HD subtypes differ in the nature of their social dysfunction independent of comorbidity and highlight the need for interventions to target their divergent needs.

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Journal of Child Psychology and Psychiatry. 2009 Sep;50:1052-63.

**Dopamine and serotonin transporter genotypes moderate sensitivity to maternal expressed emotion: The case of conduct and emotional problems in attention deficit hyperactivity disorder.**

**Sonuga-Barke EJS, Oades RD, Psychogiou L, et al.**

**Background:** Mothers' positive emotions expressed about their children with attention deficit hyperactivity disorder (ADHD) are associated with a reduced likelihood of comorbid conduct problems (CP). We examined whether this association with CP, and one with emotional problems (EMO), is moderated by variants within three genes, previously reported to be associated with ADHD and to moderate the impact of environmental risks on conduct and/or emotional problems; the dopamine transporter gene (SLC6A3/DAT1), the dopamine D4 receptor gene (DRD4) and the serotonin transporter gene (SLC6A4/5HTT).

**Methods:** Seven hundred and twenty-eight males between the ages of 5 and 17 with a DSM-IV research diagnosis of combined type ADHD were included in these analyses. Parents and teachers rated children's conduct and emotional problems. Positive maternal expressed emotion (PMEE) was coded by independent observers on comments made during a clinical assessment with the mother based on current or recent medication-free periods.

**Results:** Sensitivity to the effects of PMEE on CP was moderated by variants of the DAT1 and 5HTT genes. Only children who did not carry the DAT1 10R/10R or the 5HTT 1/1 genotypes showed altered levels of CP when exposed to PMEE. The effect was most marked where the child with ADHD had both these genotypes. For EMO, sensitivity to PMEE was found only with those who carried the DAT1 9R/9R. There was no effect of DRD4 on CP or EMO.

**Conclusion:** The gene environment interactions observed suggested that genetic make-up can alter the degree of sensitivity an ADHD patients has to their family environment. Further research should focus on distinguishing general sensitivity genotypes from those conferring risk or protective qualities.

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Journal of Attention Disorders. 2009 Sep;13:137-43.

**Stop Signal and Conners Continuous Performance Tasks: Test retest reliability of two inhibition measures in ADHD children.**

**Soreni N, Crosbie J, Ickowicz A, et al.**

**OBJECTIVE:** To measure test-retest reliability of the Stop-Signal Task (SST) and the Conners' Continuous Performance Test (CPT) in children with ADHD.

**METHODS:** 12 children with ADHD (age 11.46 +/-1.66) participated in the study. Primary outcome measures were stop-signal reaction time (SSRT) for the SST and CPT's commission errors (%FP). For each participant, we acquired three morning (8:00am) measurements and behavioral observations, separated by two 7-day intervals. Reliability of cognitive measures and behavioral observations was measured using the Intraclass-correlation coefficient (ICC).

**RESULTS:** ICC values for SSRT and %FP were 0.72. Consistency of behavioral observations was much lower (ICC =0.41).

**CONCLUSION:** Both the SST and the CPT yielded reliable measurements in ADHD children. Our findings lend further support to using these measures in the study of ADHD.

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Journal of Attention Disorders. 2009 Sep;13:127-36.

**The impact of childhood ADHD on dropping out of high school in urban adolescents/young adults.**

**Trampush JW, Miller CJ, Newcorn JH, et al.**

**Objective:** To examine cognitive and psychosocial factors associated with high school dropout in urban adolescents with and without childhood ADHD.

**Method:** In a longitudinal study, 49 adolescents/young adults with childhood ADHD and 44 controls who either dropped out or graduated from high school are included. Risk factors examined as potential correlates of dropout were intelligence, reading skills, socioeconomic status, marijuana use, and paternal contact.

**Results:** Lower IQ, reading ability, socioeconomic status, frequent marijuana use, and limited paternal contact significantly differentiated dropouts from graduates, irrespective of childhood ADHD. Follow-up analyses determined that IQ, marijuana use, and paternal contact independently contribute to the likelihood of dropout.

**Conclusion:** Selected cognitive and psychosocial factors appear independently associated with the likelihood of high school dropout irrespective of ADHD. Notably, childhood ADHD did not increase this risk,

suggesting that previous reports of increased dropout because of ADHD may become negated in urban areas when matched with similar community controls.

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Journal of Emotional and Behavioral Disorders. 2009 Jun;17:118-28.

**Factor-analytic and individualized approaches to constructing brief measures of ADHD behaviors.**

**Volpe RJ, Gadow KD, Blom-Hoffman J, et al.**

Two studies were performed to examine a factor-analytic and an individualized approach to creating short progress monitoring measures from the longer ADHD-Symptom Checklist-4 (ADHD-SC4). In Study 1, teacher ratings on items of the ADHD:Inattentive (IA) and ADHD:Hyperactive-Impulsive (HI) scales of the ADHD-SC4 were factor analyzed in a normative data sample of 493 students aged 5 to 12 years. Items with the highest factor loadings were then selected to create abbreviated IA and HI scales for Study 2. In Study 2, the psychometric characteristics of two shortened progress-monitoring measures (factor derived and individualized) and the original IA and HI scales of the ADHD-SC4 were examined in a sample of 26 students aged 4 to 17 years in a medication titration study involving baseline and three doses of methylphenidate. The results indicated comparable psychometric properties across the original and abbreviated versions of the IA and HI scales.

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Journal of Psychopharmacology. 2009 Aug;23:727-28.

**Risperidone-induced sexual dysfunction in a prepubertal child' A case report.**

**Wadoo O, Chalhoub N.**

We report on a child with attention deficit hyperactivity disorder and motor tics, who developed frequent penile erections during treatment with risperidone and atomoxetine. On discontinuation of risperidone, he recovered fully. Clinicians should be alert to the adverse effects of atypical antipsychotics, which are used to treat a wide variety of paediatric psychiatric disorders.

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Journal of Child and Adolescent Mental Health. 2009 Jun;21:61-72.

**A case of effective single-session treatment for attention deficit and learning problems in a routine clinical practice: The value of a transdiagnostic approach to case formulation.**

**Whitefield-Alexander V, Edwards D.**

This article reports a systematic clinical case study of the psychological assessment and treatment of Daniel (9), a coloured South African boy with a diagnosis of attention deficit hyperactivity disorder (ADHD) (inattentive type). The case is of scientific interest because: (1) there was only a single treatment session, in which contingency management training was delivered to Daniel's parents and teacher; (2) there was evidence for the effectiveness of the intervention immediately and at two-year follow-up; (3) it documents the transportability to a South African context of an intervention developed by overseas research; (4) it documents the central role of case formulation in the delivery of effective psychological interventions; and (5) although Daniel met the criteria for ADHD, he also displayed symptoms of depression and social anxiety and the case supports the use of a transdiagnostic approach to case formulation. The conscientiousness with which his parents and teachers applied the programme was a major factor in the effectiveness of the intervention, and such rapid impact would not be possible where parents and teachers are unavailable or not co-operative. The publication of systematic case studies such as this one is important for the development of a local evidence-based practice in South Africa.

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Adolescence. 2009;44:273-88.

**Teachers' preferences for interventions for ethnically diverse learners with attention-deficit hyperactivity disorder.**

**Wood JC, Heiskell KD, Delay DM, et al.**

One hundred sixty-eight elementary and middle school teachers participated in this investigation on the impact of student gender and ethnicity on teacher recommendations for interventions for attention-deficit

hyperactivity disorder (ADHD). Participants read a scenario describing a student with ADHD accompanied by a student photo which depicted his/her ethnicity and gender. Participants were then asked how strongly they would recommend four common interventions. Findings suggest teachers are more likely to recommend interventions requiring less parental involvement for minority students than for Caucasian students. Elementary and special education teachers were more likely to recommend interventions with greater empirical support than were middle school and regular education teachers. Ramifications for intervention selection in schools and suggestions for future investigations are reviewed.

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