



ADHD

ATTENTION DEFICIT HYPERACTIVITY DISORDER


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Journal of Attention Disorders. 2010 Jul;14:52-56.

The prevalence of ADHD-like symptoms in a community sample.

Alloway T, Elliott J, Holmes J.

Objective: The aim of the present study was to explore the prevalence of ADHD symptoms in a community sample of children in the United Kingdom.

Method: There were 964 ten year olds (55% boys; M = 10.4 years; SD = 0.6) from mainstream schools in the United Kingdom in this study. The ADHD Rating Scale-IV, which provides ratings on the frequency of ADHD symptoms drawn from DSM-IV criteria, was administered to class teachers.

Results: The findings indicated an overall 8% prevalence rate, with the majority of children identified as the Hyperactive/Impulsive subtype (5%). Almost half of these children were receiving additional support in the classroom as a result of learning difficulties.

Conclusion: It is therefore of value for educators to be able to conduct early screening to support these children before problems worsen.

Developmental Medicine & Child Neurology. 2010 Jul;52:632-36.

Examining the link between working memory behaviour and academic attainment in children with ADHD.

Alloway TP, Gathercole SE, Elliott J.

Aim: The aim of the present study was to investigate whether behaviours typical of working memory problems are associated with poor academic attainment in those with attention-deficit-hyperactivity disorder (ADHD), as well as a non-clinical group identified on the basis of working memory difficulties.

Method: Children clinically diagnosed with ADHD-combined (n=31; mean age 9 y 7 mo, SD 12 mo; 27 males) were matched with 44 low working memory children (mean age 9 y 4 mo, SD 15 mo; 32 males) and 10 healthy controls (mean age 10 y, SD 12 mo; 5 males). Working memory behaviour was measured using the Working Memory Rating Scale (WMRS) and academic attainment was assessed with standardized tests of literacy and numeracy.

Results: The majority of children considered by their teachers to have problematic behaviours performed poorly in literacy and numeracy. When the whole sample were split into two groups on the basis of their working memory behaviour (on the WMRS), the 'At Risk' group performed significantly worse in academic attainment.

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.

Interpretation: As children with ADHD and a non-clinical group exhibit classroom behaviour typical of working memory problems, early screening to prevent subsequent learning difficulties is important. The use of the WMRS allows educators to draw on their expertise in the classroom for early detection of children with working memory failures.

Child Neuropsychol. 2010 May;16:242-54.

Investigating the relationship between attention and working memory in clinical and community samples.

Alloway TP, Elliott J, Place M.

The first aim of the present study was to investigate whether differences in core deficits in ADHD subtypes lead to dissociable working memory profiles. The second aim was to compare the working memory profiles of inattentive students with those identified as having poor working memory, as they exhibit very similar behavioral profiles. Finally, the relationship between working memory and academic attainment in these groups were also of interest. Four groups of 9-year-olds were recruited: a community sample of children with inattentive symptoms, a clinically diagnosed group of children with ADHD-Combined, children with low working memory, and a healthy comparison group. They were assessed on measures of working memory, IQ, academic attainment, and sustained attention. The findings indicated that the combined and inattentive subtypes could not be distinguished on the basis of their working memory profile. In contrast, those with inattentive symptoms did better on the short-term memory tasks than the low working memory group. The majority of all three atypical groups performed very poorly in reading and math. This pattern can be interpreted as reflecting the link between working memory and academic attainment, even in those with attention problems.

Journal of Attention Disorders. 2010 Jul;14:25-30.

The comorbidity of ADHD in the general population of Saudi Arabian school-age children.

Alqahtani MM.

Objective: To investigate comorbidity of oppositional-defiant disorder (ODD), conduct disorder (CD), anxiety, and depression and to investigate the impaired social and academic developments among children with ADHD in primary school settings in Saudi Arabia.

Method: Data for the purpose of this study are obtained from parent and teachers of 652 primary school children attending Grades 1 to 3 (children aged between 7 and 9 years). Vanderbilt ADHD diagnostic rating scale, which has relevance and found to be reliable by previous studies, is used in the study.

Results: ODD and CD are reported to be present in close to two thirds (73%) of children with ADHD, as assessed with DSM-IV-TR criteria. Anxiety and depression disorder are estimated to be present in 36% of children with ADHD. Children with ADHD show high levels of impairment in academic achievements (63%) and social performance (90%), compared with non-ADHD children.

Conclusion: These findings suggest that a significant minority of disruptive children may have their difficulties compounded by the presence of ADHD, which raises the question whether their problems are known and whether they have received appropriate help. It is important to develop a specific set of psychological clinical intervention for helping children with ADHD, ODD, CD, and other related problems. Educating teachers and parents about ADHD and its comorbidity is considered essential in this regard.

Pediatr Int. 2010;52:415-19.

Predictive familial risk factors and pharmacological responses in ADHD with comorbid disruptive behavior disorders.

Bandou N, Koike K, Matuura H.

Background: The aim of the present study was to examine the putative familial risk factors and evaluate the pharmacological effects in children and adolescents of attention-deficit-hyperactivity disorder (ADHD) with comorbid disruptive behavior disorders (DBD) and normal IQ.

Methods: The retrospective study included 144 Japanese subjects (age, 5-18 years) with ADHD, of whom 35 subjects (24%) met the diagnostic criteria for DBD. Using multiple regression analysis, the familial background risk factors that might increase any comorbid antisocial behaviors were assessed. Furthermore,

the 20 methylphenidate (MPH)-resistant DBD subjects were divided into three treatment groups: MPH plus risperidone (n = 8); MPH plus carbamazepine (n = 5); and MPH plus lithium carbonate (n = 4). The effectiveness of the treatment was evaluated both before and after the add-on therapy using the Clinical Global Impressions-Improvement (CGI-I) and CGI-Severity (CGI-S) scale.

Results: The putative familial risk factors were child abuse (odds ratio [OR], 19.48; P = 0.013) and maternal psychiatric disorders (OR, 15.59; P = 0.027). The addition of risperidone had the strongest tendency to improve the CGI-S score (P = 0.063) and the highest rate of responses (50%) among the three treatment groups, albeit with no significant differences. Very few remarkable adverse clinical symptoms were observed.

Conclusions: Child abuse and maternal psychiatric disorders are suggested to be significant risk factors in influencing the development of comorbid DBD in offspring. The use of risperidone appears to be well tolerated and is moderately effective in MPH-resistant aggression in ADHD children and adolescents with comorbid DBD.

Epilepsia. 2010;51:16-17.

The effect of methylphenidate on N-back task performance in boys with epilepsy/and or ADHD: A behavioral and functional MRI study.

Bechtel N, Penner IK, Klarhofer M, et al.

Purpose: Approximately 1/3 of children with epilepsy also suffer from attention deficit/hyperactivity disorder (ADHD), which often includes deficits in working memory. Methylphenidate (MPH) can improve the behavioral difficulties in children with ADHD. However, it is not yet clear whether there are specific neurobehavioral differences between children with combined epilepsy/ADHD and children with developmental ADHD and whether MPH shows comparable neurofunctional effects in working memory task-induced brain activation in both patient groups.

Method: Eleven boys with diagnosed epilepsy/ADHD, 14 boys with behavioral ADHD and 12 healthy controls (aged 9-14 years) were investigated using fMRI; once with medication and once without. In order to measure working memory performance, the popular N-back paradigm was used and scans were recorded on a 3T human head scanner.

Results: Healthy controls performed significantly better than both patient groups without medication, whereas patients' performance improved to normal after the intake of MPH. On the functional level healthy controls showed more activation in frontal, parietal and cerebellar regions than both patient groups. Within the patient groups there was no enhanced activation detectable due to medication.

Conclusion: These data indicate a clear effect of MPH on a behavioral level. However, this effect is not reflected by changes in functional brain organization. In contrast to healthy controls, patients showed decreased activation during N-back tasks in both conditions. Due to the behavioral and functional similarities of the two patient groups, data indicate that the neurobehavioral dysfunctions of working memory are comparable in children with epilepsy and/or ADHD.

Neuropsychology. 2010;24:424-34.

Perceptual and Motor Inhibition in Adolescents/Young Adults With Childhood-Diagnosed ADHD.

Bedard ACV, Trampush JW, Newcorn JH, et al.

Objective: This study examined perceptual and motor inhibition in a longitudinal sample of adolescents/young adults who were diagnosed with ADHD in childhood, and as a function of the relative persistence of ADHD.

Method: Ninety-eight participants diagnosed with ADHD in childhood were reevaluated approximately 10 years later. Eighty-five never-ADHD controls similar in age, IQ, sociodemographic background, and gender distribution served as a comparison group. Participants were administered a psychiatric interview and the Stimulus and Response Conflict Tasks (Nassauer & Halperin, 2003).

Results: Participants with childhood ADHD demonstrated slower and less accurate responses to both control and conflict conditions relative to the comparison group, as well as more variable responses in both conditions of the motor inhibition task; there was no specific effect of childhood ADHD on perceptual or motor inhibition. ADHD persists and partial remitters did not differ in overall accuracy, speed or variability in responding, but relative to partial remitters, persisters demonstrated greater slowing in response to perceptual conflict.

Conclusions: These findings are consistent with theories positing state regulation, but not inhibitory control deficits in the etiology of ADHD, and suggest that improved perceptual inhibition may be associated with better outcome for ADHD.

J Dev Behav Pediatr. 2010 Apr;31:233-37.

Relationships between child-reported activity level and task orientation and parental attention-deficit/hyperactivity disorder symptom ratings.

Bell L, Kellison I, Garvan CW, et al.

Objective: This study examines whether elementary school-aged children can report behaviors relevant to assessing symptoms of attention-deficit/hyperactivity disorder (ADHD).

Methods: Interviews were conducted with 120 children aged 6 to 12 years and their parents across 3 waves as part of a longitudinal cohort study of ADHD detection and service use. Child self-reports obtained through the Dimensions of Temperament Scale-Revised-Child (DOTS-R-C) were correlated with parent-reported ADHD symptoms, which were assessed through DSM-IV-based instrument ratings obtained concurrently and 5 years later.

Results: The Dimensions of Temperament Scale-Revised-Child subscales Activity Level and Task Orientation demonstrate adequate internal consistency after eliminating items requiring reverse scoring. Children's self-reports of Task Orientation Problems correlate with their parents' concurrent reports of inattention, $r(117) = .23, p < .05$, and with parents' Wave 3 reports of inattention, $r(118) = .25, p < .01$ as well as hyperactivity, $r(118) = .25, p < .01$. Children's self-reports of Activity Level correlate with their parents' concurrent reports of hyperactivity, $r(117) = .21, p < .05$, as well as Wave 3 reports of hyperactivity/impulsivity, $r(118) = .37, p < .001$ and inattention, $r(118) = .23, p < .05$.

Conclusions: Findings suggest that children may be capable of producing meaningful self-reports of Activity Level and Task Orientation. We propose that the development of child-friendly self-report instruments targeting ADHD symptoms is merited to facilitate the collection of child input during ADHD assessments.

Journal of Attention Disorders. 2010 Jul;14:31-42.

Getting clued in: Inferential processing and comprehension monitoring in boys with ADHD.

Berthiaume KS, Lorch EP, Milich R.

Objective: The present study examines the ability of children with ADHD to make inferences and monitor ongoing understanding of texts, to shed light on their academic difficulties.

Method: A total of 29 boys with ADHD and 41 comparison boys between the ages of 7 and 12 participated. Three tasks measure how boys create and evaluate inferences, particularly explanatory inferences, and how they monitor their understanding of story events and the connections among them.

Results: Boys with ADHD are less able than their comparison peers to make appropriate inferences, particularly explanatory inferences. They also have more trouble identifying text inconsistencies.

Conclusions: Findings suggest that difficulties in making inferences and monitoring ongoing comprehension among children with ADHD may contribute to story comprehension problems and in turn to academic difficulties experienced by these children. Interventions specifically focusing on understanding causal connections, creating inferences, and monitoring ongoing understanding of stories need to be investigated.

Alcohol Clin Exp Res. 2010 Apr;34:617-27.

An event-related potential study of response inhibition in ADHD with and without prenatal alcohol exposure.

Burden MJ, Jacobson JL, Westerlund A, et al.

Background: The attention and cognitive problems seen in individuals with a history of prenatal alcohol exposure often resemble those associated with attention deficit hyperactivity disorder (ADHD), but few studies have directly assessed the unique influence of each on neurobehavioral outcomes.

Methods: We recorded event-related potentials (ERPs) during a Go/No-go response inhibition task in young adults with prospectively obtained histories of prenatal alcohol exposure and childhood ADHD.

Results: Regardless of prenatal alcohol exposure, participants with childhood ADHD were less accurate at inhibiting responses. However, only the ADHD group without prenatal alcohol exposure showed a markedly

diminished P3 difference between No-go and Go, which may reflect a more effortful strategy related to inhibitory control at the neural processing level.

Conclusion: This finding supports a growing body of evidence suggesting that the manifestation of idiopathic ADHD symptoms may stem from a neurophysiologic process that is different from the ADHD symptomatology associated with prenatal alcohol exposure. Individuals who have been prenatally exposed to alcohol and present with ADHD symptomatology may represent a unique endophenotype of the disorder, which may require different treatment approaches from those found to be effective with idiopathic ADHD.

Aust New Zealand J Psychiatry. 2010;44:667-75.

Psychosocial factors associated with parent and teacher reports of aggression in children and adolescents with attention deficit hyperactivity disorder.

Connolly A, Vance A.

Objective: The prognosis for individuals diagnosed with attention deficit hyperactivity disorder (ADHD) and comorbid aggression is substantially worse than for those with ADHD alone. This study investigates the contribution of key psychosocial factors to both parent and teacher reports of aggressive behaviour in children and adolescents diagnosed with ADHD. It was hypothesized that greater impairment in each would be associated with higher levels of both parent-rated and teacher-rated aggression.

Method: Information collected during semi-structured clinical interviews from 676 boys and girls aged 6 to 16 and diagnosed with ADHD was analysed. Measures of potential psychosocial factors including parental psychopathology, family functioning, marital relationship quality and child interpersonal relationship status were administered. Ratings of aggression were obtained from both parents and teachers, and the association of psychosocial measures for each were separately analysed.

Results: Correlation and multiple regression analyses revealed significant associations between parent-rated aggression and measures of increased parent psychopathology, decreased family function and deficient child interpersonal relationships. Teacher-rated aggression was only associated with deficient child interpersonal relationships.

Conclusion: The findings highlight important differences in the psychosocial factors that contribute to parent and teacher ratings of aggression in the context of ADHD. The implications of these findings for both the clinician and researcher are discussed.

Drugs Today. 2010;46:299-314.

Guanfacine extended release in the treatment of attention deficit hyperactivity disorder in children and adolescents.

Connor DF, Rubin J.

Extended-release guanfacine (Intuniv(trademark)) is a novel long-acting, once-daily formulation of guanfacine indicated for attention deficit hyperactivity disorder (ADHD) in 6 to 17 year old children and adolescents. In doses 1 to 4 mg/day, guanfacine extended release (GXR) significantly improves the symptoms of inattention and hyperactivity-impulsivity in ADHD youngsters compared with placebo. Because of different pharmacokinetics, GXR is not substitutable on a mg-for-mg basis with immediate release guanfacine. Although extended release guanfacine does not demonstrate clinically significant ECG changes, mild slowing of the heart rate and some lowering of SBP and DBP does occur and requires vital sign monitoring during treatment. Children with a clinically significant cardiovascular history are not eligible for GXR therapy. Future research is exploring GXR effectiveness in ADHD complicated by oppositional defiant symptoms, ADHD complicated by tic disorders, posttraumatic stress disorders, and impulsive aggression in ADHD youngsters.

OTJR Occup Part Health. 2010;30:122-32.

Empathy in the play of children with attention deficit hyperactivity disorder.

Cordier R, Bundy A, Hocking C, et al.

Many children with attention deficit hyperactivity disorder (ADHD) have serious social and peer difficulties that can lead to adverse outcomes in adolescence and adulthood. Play provides a natural context to explore those interactional problems. This study aimed to examine the similarities and differences in play behavior of

children as having ADHD and typically developing children. Participants were children (aged 5 to 11 years) diagnosed as having ADHD (n = 112) and typically developing peers (n = 126) who were matched based on age, ethnicity, and gender. The Test of Playfulness (ToP) was used to measure play. Children with ADHD performed similarly to typically developing peers on ToP items that related most directly to the primary symptoms of ADHD but scored significantly lower on several ToP social items; however, they also scored higher on one difficult social item and no differently on two others, suggesting that the problems may be developmentally inappropriate lack of empathy rather than simply poor social skills.

Australian Occupational Therapy Journal. 2010 Apr;57:137-45.

Comparison of the play of children with attention deficit hyperactivity disorder by subtypes.

Cordier R, Bundy A, Hocking C, et al.

Background: Studies have found differences in the nature and severity of social problems experienced by children with different subtypes of attention deficit hyperactivity disorder (ADHD). Given that play is often the context for acquiring social skills, there is surprisingly limited research examining whether these differences distinguish the play of children within the groups.

Methods: Using the Test of Playfulness (ToP), we examined the similarities and differences in play between children (aged 5–11 years) diagnosed with the three DSM-IV ADHD subtypes: inattentive (I-subtype; n = 46), hyperactive-impulsive (HI-subtype; n = 28) and combined subtypes (C-subtype; n = 31).

Results and conclusions: Bias interaction, an item-by-item analysis, revealed that the hierarchy of ToP items was similar for children with the HI- and C-subtypes, but differed for children with the I-subtype. Specifically, children with the I-subtype found it more difficult to become intensely engaged in play and to take on playful mischief and clowning; however, they found social play items to be easier. Conversely, whereas mischief and clowning were relatively easier for children with the HI- and C-subtypes, many items reflecting social interaction were more difficult. These findings suggest that interventions can be tailored to these differing presentations. However, further research is needed to confirm the findings.

Child & Family Behavior Therapy. 2010 Apr;32:139-51.

Evaluation of a school-based social skills program for children with attention-deficit/hyperactivity disorder.

Corkum P, Corbin N, Pike M.

Attention-Deficit/Hyperactivity Disorder (ADHD) is prevalent among school-aged children. An associated feature of the disorder is a deficit in social functioning, which can be detrimental in terms of long-term outcomes. Therefore, it is crucial to identify evidence-based interventions which can improve the social skills of children with ADHD. The current study was an evaluation of a school-based social skills training program, called Working Together: Building Children's Social Skills Through Folk Literature. The modified version of the program with generalization enhancers was delivered in three schools to 16 children over a 10-week period. Results indicated that this program was effective for improving social skills in children with ADHD, particularly for children with poor pragmatic language skills.

J Psychiatr Res. 2010;44:629-39.

Reduced activation and inter-regional functional connectivity of fronto-striatal networks in adults with childhood Attention-Deficit Hyperactivity Disorder (ADHD) and persisting symptoms during tasks of motor inhibition and cognitive switching .

Cubillo A, Halari R, Ecker C, et al.

Attention-Deficit Hyperactivity Disorder (ADHD) in children has been associated with fronto-striatal functional abnormalities during tasks of inhibitory control. In adults with ADHD, however, hardly any functional magnetic resonance imaging (fMRI) studies have investigated the neurofunctional correlates of the most compromised cognitive functions of motor response inhibition and no study has investigated cognitive flexibility. In this study we used fMRI to compare brain function and task-relevant inter-regional functional connectivity between 11 medication-naïve adults with persistent inattentive/hyperactive behaviours, followed up from childhood when they had been diagnosed with ADHD, and 14 age-matched healthy controls during a Stop and a cognitive Switch tasks. Whole-brain regression MR analyses were conducted within patients to

correlate symptoms with brain activation. Despite comparable task performance, adults with childhood ADHD showed reduced activation compared to controls in bilateral inferior prefrontal cortex, caudate and thalamus during both tasks, as well as in left parietal lobe during the Switch task. Within patients, the severity of the behavioural symptoms was negatively correlated with more extensive activation of similar regions in fronto-striatal, parietal and cerebellar brain areas. In the Stop task, patients showed reduced inter-regional functional connectivity between right inferior fronto-frontal, fronto-striatal and fronto-parietal neural networks. The findings demonstrate that adults with childhood ADHD and persisting behavioural symptoms show strikingly similar patterns of fronto-striatal and parietal dysfunction to those observed in childhood ADHD during the same tasks of inhibitory control. This suggests that neuro-functional abnormalities in ADHD patients are likely to continue between childhood and early adulthood.

Am J Psychiatry. 2010 Jun;167:716-17.

Resolving the discrepancy in childhood bipolar high-risk study findings.

Duffy A, Grof P, Hajek T, et al.

Memory & Cognition. 2010 Jul;38:617-28.

The role of inhibition in the production of disfluencies.

Engelhardt PE, Corley M, Nigg JT, et al.

Disfluency is a common occurrence in speech and is generally thought to be related to difficulty in the production system. One unexplored issue is the extent to which inhibition is required to prevent incorrect speech plans from being articulated. Therefore, we examined disfluency production in participants with attention-deficit/hyperactivity disorder (ADHD), which is linked to deficits in inhibitory function and response suppression (Nigg, 2001). Participants completed a sentence production task in which they were presented with two pictures and a verb and their task was to produce a sentence. If inhibition plays a role in preventing incorrect speech plans, we would expect ADHD participants to produce more repetition and repair disfluencies than would non-ADHD controls. The results showed that one subtype of ADHD (i.e., the combined) produced more repair disfluencies as task demands increased. We conclude that the production system relies on inhibitory control in order to prevent errors in language production.

Neuropediatrics. 2009;40:1-5.

Differential patterns of brain activation over time in adolescents with and without attention deficit hyperactivity disorder (ADHD) during performance of a sustained attention task.

Epstein JN, DelBello MP, Adler CM, et al.

Objective: Recent morphometric studies suggest that children with ADHD may demonstrate differential or delayed brain development compared with children without ADHD. This study examines the developmental course of brain activation patterns during the performance of an attention task.

Method: Ten adolescents with ADHD and 14 healthy comparison adolescents performed a continuous performance task in an fMRI twice, one year apart.

Results: In the absence of performance differences, children with ADHD and healthy comparison subjects activated frontal-parietal regions while performing an attention task at initial testing. Children with ADHD appeared to require continued use of the right middle frontal gyrus during administration of testing one year apart while healthy comparison subjects did not activate this region at the time of the second testing.

Conclusions: There appear to be developmental differences in brain activation patterns on an attentional task between ADHD and healthy controls. More research is needed for examining the longitudinal course of functional brain activation in children with ADHD. (copyright) Georg Thieme Verlag KG Stuttgart New York

Journal of Attention Disorders. 2010 Jul;14:43-51.

Order of Conners' CPT-II administration within a cognitive test battery influences ADHD indices.

Erdodi LA, Lajiness-O'Neill R, Saules KK.

Objective: To study the effect of administration sequence on Conner's continuous performance test (CPT-II) scores in clients requesting psychological assessment. It was hypothesized that when administered at the end rather than beginning of a test battery, the test scores will show higher symptom severity. If present, order effects may cause the over- or underdiagnosing of ADHD.

Method: Participants were recruited at a Midwestern university's training clinic (16 men, 9 women; mean age =22.4, SD=10.2). The CPT-II was administered twice to each client: once at the beginning of the testing session and once at the end of their appointment. The clients completed at least a full Wechsler intelligence battery in between the CPT-II administrations.

Results: Clients' ADHD index score (interpreted as percent confidence in an ADHD diagnosis) is more impaired at Time 2 (M=53.3, SD=29.0) compared to Time 1 (M=39.4, SD=22.5): $t(24) = 3.93$, $p < .05$, Cohen's $d = .79$. The number of T-scores above 60 on the subscales also changed from Time 1 (M=1.92, SD=1.73) to Time 2 (M=3.12, SD=2.05): $t(24) = 3.47$, $p < .01$, Cohen's $d = .71$.

Conclusions: If the CPT-II is administered later in a sequence of tests, it is more likely to yield scores in the impaired range. Order effects are more pronounced in individuals diagnosed with ADHD. Recommendations include the adoption of a standardized administration sequence, further research to investigate the nature of order effects, and a strategic use of order effects in ADHD assessment.

Clin Neurophysiol. 2010;121:1336-42.

Alterations in theta activity associated with novelty and routinization processing in ADHD.

Fallahpour K, Clarke SD, Goldberg E, et al.

Objective: Novelty and routinization-related information processing disturbances were examined in adolescent males with ADHD using an oddball paradigm and electrophysiological measurement of theta (4-7. Hz) activity.

Methods: Fifty-four unmedicated adolescent males (12-18. years) with Attention Deficit Hyperactivity Disorder (ADHD) and matched controls performed an auditory oddball task. Theta activity was sub-averaged, and Fourier Integrals with simultaneous measurement of electrodermal activity (EDA) was used to index response to stimulus novelty and routinization.

Results: ADHD participants showed an overall increase in theta activity to both novel and routine stimuli relative to controls. While controls showed increased theta activity in response to novel compared to routine targets across the brain, ADHD participants did not show this novelty-related increase in theta activity in the right anterior/frontal brain.

Conclusions: The findings of this study are consistent with disturbances in theta activity and the brain substrates of novelty relative to routinization-related processing in ADHD.

Significance: These findings show that there are distinct alterations in theta activity related to stimulus novelty and routinization during an auditory oddball task in ADHD, and they highlight the value of using an event-related approach to elucidate the neural substrates of stimulus processing in ADHD.

Adv Ther. 2009;26:1097-110.

Clinical and cognitive response to extended-release methylphenidate (Medikinet(registered trademark)) in attention deficit/hyperactivity disorder: Efficacy evaluation.

Fernandez-Jaen A, Fernandez-Mayoralas DM, Pardos A, et al.

Introduction: The objective of the study was to assess the efficacy of extended-release methylphenidate (Mph-ER) (Medikinet(registered trademark); MEDICE Arzneimittel Putter GmbH & Co KG, Iserlohn, Germany) in the pediatric population with attention deficit/hyperactivity disorder (ADHD); A parallel analysis of the validity of various tools for monitoring short-term clinical response to treatment was made.

Methods: This was a retrospective analysis of 94 children with ADHD who received treatment with Mph-ER. The ADHD Rating Scale-IV (ADHD-RS) was used to assess clinical efficacy. The following neuropsychological tests were used to assess cognitive-attentional efficacy: The faces test, the D2 test, the Magallanes visual attention scale (EMAV; Escalas Magallanes de Atencion Visual), and the Conners' Continuous Performance Test II (CPT-II). The ADHD-RS scale was completed by the parents at the time of diagnosis and after 3 months of treatment. The tests were taken by patients both without treatment and

under the effects of treatment. The results of these variables were transformed into Z values for subsequent analysis.

Results: In all, 84% of the patients lowered their ADHD-RS score with Mph-ER. Regarding the neuropsychological tests, a significant change was seen when the results of patients without treatment were compared with their later results with treatment. When the order of test conditions was reversed (with and then without treatment), the CPT-II was the only test for which there was still a significant difference.

Conclusion: Mph-ER improved attention and self-control from a clinical and cognitive point of view. Of those studied, the CPT-II was the most effective neuropsychological test for monitoring efficacy of Mph in the short-term. (copyright) Springer Healthcare 2009

Pediatr Neurol. 2010;43:110-16.

Fetal Alcohol Syndrome, Tourette Syndrome, and Hyperactivity in Nine Adopted Children.

Fernandez-Mayoralas DM, Fernandez-Jaen A, Munoz-Jareno N, et al.

Much attention has been paid in recent years to the role of prenatal exposure to alcohol. Fetal alcohol syndrome is one of the most severe afflictions resulting from such exposure. The present report documents the cases of adopted children diagnosed with fetal alcohol syndrome who developed both Tourette syndrome and attention deficit-hyperactivity disorder. Out of a population of 138 adopted children with behavior issues whose clinical histories were reviewed retrospectively, 9 children (6.5%) presented this constellation. Epidemiologic data, clinical data, neurologic examination findings, complementary testing, and developmental data were recorded. All nine patients studied had initial psychomotor retardation, despite the frequent case of subsequent intelligence quotient normalization. From a behavioral perspective, half of the cases presented obsessive-compulsive disorder and problems with social relations. Aggressive behavior was common. These cases also presented a high degree of severity of both tics and hyperactivity. The most common drug treatment was methylphenidate. This constellation of fetal alcohol syndrome, Tourette syndrome, and attention deficit-hyperactivity disorder is scantily reported in the literature and is likely underdiagnosed. This particular constellation poses its own prognosis and requires its own treatment.

Chiropr Osteopathy. 2010;18.

Chiropractic diagnosis and management of non-musculoskeletal conditions in children and adolescents.

Ferrance RJ, Miller J.

Background: A great deal has been published in the chiropractic literature regarding the response, or lack thereof, of various common pediatric conditions to chiropractic care. The majority of that literature is of low scientific value (that is, case reports or case series). The purpose of this review is to summarize the literature from the point of view of clinicians, rather than researchers, and to discuss some additional detail of the conditions themselves.

Methods: Databases searched were PubMed, Mantis, Index to Chiropractic Literature, and CINAHL. Keywords were chiropractic paired with colic, crying infant, nocturnal enuresis, asthma, otitis media and attention deficit hyperactivity disorder.

Results: Most of the published literature centers around case reports or series. The more scientifically rigorous studies show conflicting results for colic and the crying infant, and there is little data to suggest improvement of otitis media, asthma, nocturnal enuresis or attention deficit hyperactivity disorder.

Discussion: The efficacy of chiropractic care in the treatment of non-musculoskeletal disorders has yet to be definitely proven or disproven, with the burden of proof still resting upon the chiropractic profession.

J Natl Med Assoc. 2010 May;102:372-74.

In search of an ADHD screening tool for African American children.

Flowers A, McDougle L.

PURPOSE: Behavior rating scales have often been used to evaluate home and classroom behavior for children suspected of attention-deficit/hyperactivity disorder (ADHD). However, there is concern related to the use of behavior rating scales because African American boys and girls are twice as likely to be identified

with ADHD behaviors by some of these instruments. This article serves as a brief reference for effectively evaluating African American children for ADHD.

METHODS: A MEDLINE search of peer reviewed literature published from 1970 to 2009 was conducted concerning the diagnosis of ADHD in African American children.

RESULTS: The majority of ADHD-specific behavior rating scales have face validity based on the Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) diagnostic criteria. However, with few exceptions, developers of these instruments have failed to use national samples with significant numbers of ethnic minorities to ascertain that screening questions are in fact detecting equivalent behavioral abnormalities across cultures. Fortunately, efforts have been undertaken to validate and improve effectiveness of ADHD-specific behavior rating scales in ethnically diverse populations.

CONCLUSION: There are data supporting the use of the Terry and Vanderbilt Attention-Deficit/Hyperactivity Disorder scales for diagnosing ADHD in African American children. Further studies to develop and validate ADHD-specific behavior rating scales for African American children are needed.

Am J Psychiatry. 2010 Jun;167:718-19.

Increasing the age at onset for ADHD?

Frances A.

Journal of Child Psychology and Psychiatry. 2010 Jul;51:838-49.

Executive functions as endophenotypes in ADHD: Evidence from the Cambridge Neuropsychological Test Battery (CANTAB).

Gau SS-F, Shang CY.

Little is known about executive functions among unaffected siblings of children with attention deficit hyperactivity disorder (ADHD), and there is lack of such information from non-Western countries. We examined verbal and nonverbal executive functions in adolescents with ADHD, unaffected siblings and controls to test whether executive functions could be potential endophenotypes for ADHD. We assessed 279 adolescents (age range: 11-17 years) with a childhood diagnosis of DSM-IV ADHD, 136 biological siblings (108 unaffected, 79.4%), and 173 unaffected controls by using psychiatric interviews, the Wechsler Intelligence Scale for Children 3rd edition (WISC-III), including digit spans, and the tasks involving executive functions of the Cambridge Neuropsychological Test Automated Battery (CANTAB): Intra-dimensional Extra-dimensional Shifts (IED), Spatial Span (SSP), Spatial Working Memory (SWM), and Stockings of Cambridge (SOC). Compared with the controls, adolescents with ADHD and unaffected siblings had a significantly shorter backward digit span, more extra-dimensional shift errors in the IED, shorter spatial span length in the SSP, more total errors and poorer strategy use in the SWM, and fewer problems solved in the minimum number of moves and shorter initial thinking time in the SOC. The magnitudes of the differences in the SWM and SOC increased with increased task difficulties. In general, neither persistent ADHD nor comorbidity was associated with increased deficits in executive functions among adolescents with ADHD. The lack of much difference in executive dysfunctions between unaffected siblings and ADHD adolescents suggests that executive dysfunctions may be useful cognitive endophenotypes for ADHD genetic studies.

Psychiatr Invest. 2010;7:116-21.

The predictors of parent reported behaviors related to olfactory information processing in children with ADHD.

Ghanizadeh A.

Objective: Attention deficit hyperactivity disorder (ADHD) is a heterogeneous disorder with contradictory findings about smell detection function. It is not clear if the parent perceived behavior related to olfactory function is associated with age, gender, severity of ADHD, and co-occurring symptoms of anxiety and oppositional behavior in children with ADHD.

Methods: Participants were a clinical sample of 104 children and adolescents with ADHD using DSM-IV diagnostic criteria by a semi-structured interview. Parent perceived behavior related to olfactory processing function was assessed through a questionnaire. The parent reported Olfactory Functioning Checklist was

used to evaluate "seeking behavior and over-responsiveness to smell (SSBO)" and "smell detection ability (SDA)".

Results: ADHD and separation anxiety symptoms count (severity) predicted the SDA scale score. None of the variables of gender, age, ADHD subtypes, co-morbidity with oppositional defiant disorder (ODD), and symptom count of ODD predicted SSBO and SDA scales' scores.

Conclusion: Parent reported behavior related to olfactory detection impairment increased with higher ADHD and anxiety severity. It is independent of age and gender.

Epilepsy Behav. 2010;18:229-37.

Adaptive phase I study of OROS methylphenidate treatment of attention deficit hyperactivity disorder with epilepsy.

Gonzalez-Heydrich J, Whitney J, Waber D, et al.

Objective: The goal of this study was to pilot a randomized controlled trial of OROS methylphenidate (OROS-MPH) to treat attention deficit hyperactivity disorder (ADHD) plus epilepsy.

Methods: Thirty-three patients, 6-18. years of age, taking antiepileptic drugs and with a last seizure 1-60. months prior were assigned to a maximum daily dose of 18, 36, or 54. mg of OROS-MPH in a double-blind placebo-controlled crossover trial.

Results: There were no serious adverse events and no carryover effects in the crossover trial. OROS-MPH reduced ADHD symptoms more than did placebo treatment. There were too few seizures during the active (5) and placebo arms (3) to confidently assess seizure risk; however, considering exposure time, we observed an increased daily risk of seizures with increasing dose of OROS-MPH, suggesting that potential safety concerns require further study.

Conclusion: A larger study to assess the effect of OROS-MPH on seizure risk is needed. A crossover design including subjects with frequent seizures could maximize power and address high patient heterogeneity and recruitment difficulties.

Psychol Rep. 2010 Apr;106:519-33.

Classical and Bayesian estimation in the logistic regression model applied to diagnosis of child attention deficit hyperactivity disorder.

Gordovil-Merino A, Guardia-Olmos J, Pero-Cebollero M, et al.

The limitations inherent to classical estimation of the logistic regression models are known. The Bayesian approach in statistical analysis is an alternative to be considered, given that it makes it possible to introduce prior information about the phenomenon under study. The aim of the present work is to analyze binary and multinomial logistic regression simple models estimated by means of a Bayesian approach in comparison to classical estimation. To that effect, Child Attention Deficit Hyperactivity Disorder (ADHD) clinical data were analyzed. The sample included 286 participants of 6-12 years (78% boys, 22% girls) with ADHD positive diagnosis in 86.7% of the cases. The results show a reduction of standard errors associated to the coefficients obtained from the Bayesian analysis, thus bringing a greater stability to the coefficients. Complex models where parameter estimation may be easily compromised could benefit from this advantage.

Am J Addict. 2010;19:325-31.

Attention-deficit/hyperactivity disorder confounds nicotine withdrawal self-report in adolescent smokers.

Gray KM, Baker NL, Carpenter MJ, et al.

Individuals with attention-deficit/hyperactivity disorder (ADHD) are more likely than those without ADHD to initiate smoking and develop nicotine dependence. Recent research indicates that adults with ADHD experience more severe nicotine withdrawal symptoms than those without ADHD. However, little is known about nicotine withdrawal in adolescent smokers with history of ADHD. Among a sample of 134 nicotine-dependent adolescents entering a smoking cessation research study, participants completed the Minnesota Nicotine Withdrawal Scale (MNWS) and lifetime diagnostic assessment for ADHD during the baseline visit. Responses on individual items and MNWS total score were compared between participants with and without history of ADHD. In addition, correlations between MNWS responses and current ADHD symptoms were

investigated among participants with history of ADHD. Forty-eight participants (36%) met lifetime ADHD criteria. Adolescent smokers with history of ADHD scored significantly higher on MNWS than those without history of ADHD. Among participants with history of ADHD, responses on the MNWS difficulty concentrating, restlessness/impatience, and anxiety/nervousness items each correlated positively with several current ADHD symptoms. Treatment-seeking adolescent smokers with history of ADHD are more likely to endorse nicotine withdrawal symptoms than those without history of ADHD. However, it does not appear that the symptoms reported in this sample represent a valid "withdrawal syndrome," particularly because these smokers had not yet formally attempted to quit. Rather, the data likely reflect common features between ADHD and nicotine withdrawal. Smoking research, particularly among adolescents in whom ADHD is so common, should carefully consider the complex issue of comorbid ADHD and nicotine dependence.

Applied Neuropsychology. 2010 Apr;17:135-43.

Symptom exaggeration in post-secondary students: Preliminary base rates in a Canadian sample.

Harrison AG, Edwards MJ.

Recent studies conducted at American post-secondary institutions report that a high proportion of college students seeking evaluations for either attention-deficit/hyperactivity disorder or learning disorders fail symptom validity tests (SVTs), calling into question the validity of their performance on standardized assessment measures. The current study undertook to investigate the rate of SVT failure in a Canadian post-secondary sample, drawing on assessment data from a large regional assessment facility. Evaluating the data from 144 consecutively tested students, the present study found that 14.6% of students failed an SVT, and those who failed returned lower scores on many other assessment measures compared with those who passed. These findings indicate that the rate of symptom exaggeration or low test-taking effort may be lower in Canadian samples than in U.S. samples but still represents a substantial number of students. Recommendations and suggestions for future directions are discussed.

Int J Environ Res Public Health. 2010;7:1694-707.

Are adolescents with ADHD interested in genetic testing for nicotine addiction susceptibility?

Herbert LJ, Walker LR, Sharff ME, et al.

It has been well-established that some adolescents diagnosed with attention-deficit/hyperactivity disorder (ADHD) are at increased risk for cigarette smoking. Current research on the genetic basis of this association could ultimately translate into genetic tests capable of identifying smoking-prone adolescents with ADHD. In this study we examined 81 ADHD affected adolescents' (age 13-21) interest in genetic testing for nicotine addiction susceptibility. Fifty-seven percent of adolescents indicated a fair amount of interest or more in testing. Most adolescents indicated that the personal information revealed from testing would be either useful (29%) or interesting (37%). Implications for genetically-informed smoking prevention and cessation interventions in high risk adolescents with ADHD are discussed.

Dev Psychopathol. 2010 May;22:375-90.

Time-dependent changes in positively biased self-perceptions of children with attention-deficit/hyperactivity disorder: A developmental psychopathology perspective.

Hoza B, Murray-Close D, Arnold LE, et al.

This study examined changes in the degree of positive bias in self-perceptions of previously diagnosed 8- to 13-year-old children with attention-deficit/hyperactivity disorder (ADHD; n = 513) and comparison peers (n = 284) over a 6-year period. The dynamic association between biased self-perceptions and dimensional indices of depressive symptoms and aggression also were considered. Across the 6-year time span, comparison children exhibited less bias than children with ADHD, although a normative bolstering of social self-views during early adolescence was observed. Decreases in positive biases regarding social and behavioral competence were associated with increases in depressive symptoms over time, whereas increases in levels of positively biased self-perceptions in the behavioral (but not social) domain were predictive of greater aggression over time. ADHD status moderated the dynamic association between biases

and adjustment. Finally, evidence indicated that there was a bidirectional relationship between biases and aggression, whereas depressive symptoms appeared to inversely predict later bias.

Int J Psychophysiol. 2010;77:118-25.

Altered effect of preceding response execution on inhibitory processing in children with AD/HD: An ERP study.

Inoue Y, Inagaki M, Gunji A, et al.

The electrophysiological findings in children with attention-deficit/hyperactivity disorder (AD/HD) have been repeatedly examined through a series of event-related potential (ERP) studies involving tasks that require inhibitory processing. Previous behavioral studies showed that the difficulty in response withholding for AD/HD children is enhanced by the preceding Go-trial. However, studies on the effects of the preceding response execution on the inhibitory ERP components in children with AD/HD have been scarce. Twelve children with AD/HD (6 with predominantly inattentive type, 6 with combined type) and 12 exhibiting typical development took a visual continuous performance test (CPT) involving Go/NoGo methodology. The effect of the preceding trial was analyzed by comparing ERP components and performance data between switch and repeat trials. Within-group comparison revealed that a significantly larger amplitude of NoGo-N200 for NoGo-switch (Go/NoGo) versus NoGo-repeat (NoGo/NoGo) was observed across sagittal regions in the control group but not in the AD/HD one. Between-group comparison revealed that the amplitude of NoGo-N200 for NoGo-switch across sagittal regions was significantly smaller in the AD/HD group than in the control one. The effect of the preceding trial on NoGo-N200 did not differ between two AD/HD subtypes. Moreover, the amplitudes and latencies of the ERP components elicited by Go-trials were not influenced by the type of preceding trial. These results suggested that the effect of preceding response execution on NoGo-N200 is greatly affected in children with AD/HD.

Compr Psychiatry. 2010;51:412-18.

Does oppositional defiant disorder have temperament and psychopathological profiles independent of attention deficit/hyperactivity disorder?

Kim HW, Cho SC, Kim BN, et al.

Background: Most studies on temperamental and behavioral/emotional characteristics of oppositional defiant disorder (ODD) did not rule out the effect of comorbid attention-deficit/hyperactivity disorder (ADHD). The main objective of this study was to identify the temperamental and psychopathological patterns of ODD independent of comorbid ADHD. We also aimed to compare the patterns of temperament and psychopathology between ODD with and without ADHD.

Method: Parents of 2673 students, randomly selected from 19 representative schools in Seoul, Korea, completed the Diagnostic Interview Schedule for Children Version IV. Among 118 children and adolescents with ODD diagnosed by the Diagnostic Interview Schedule for Children Version IV, the parents of 94 subjects (mean age, 10.4 (plus or minus) 3.0 years) and the parents of a random sample of 94 age- and gender-matched non-ODD/non-ADHD children and adolescents completed the parent's version of the Child Behavior Checklist (CBCL) and the Junior Temperament and Character Inventory.

Results: Subjects with ODD showed temperament and character profiles of high Novelty Seeking, low Self-directedness, and low Cooperativeness, a distinct pattern on the CBCL, and were at increased risk for anxiety and mood disorders compared to the controls after controlling for the effect of comorbid ADHD. The children and adolescents with both ODD and ADHD showed decreased levels of Persistence and Self-directedness and higher scores on 4 subscales of the CBCL (Anxious/Depressed, Attention Problems, Delinquent Behaviors, and Aggressive Behaviors) compared to those with ODD only.

Conclusions: Oppositional defiant disorder is associated with specific temperamental and behavioral/emotional characteristics, independent of ADHD. Moreover, the results of this study support that co-occurring ADHD and ODD have differentially higher levels of behavioral and emotional difficulties.

Journal of the American Academy of Child & Adolescent Psychiatry. 2010 Jun;49:626-28.

Review of 'Treating child and adolescent mental illness: A practical, all-in-one guide'.

Kleban M.

Reviews the book, "Treating child and adolescent mental illness: A practical, all-in-one guide" by Jess P. Shatkin (see record 2009-17806-000). The book contains 14 chapters, each describing a common disorder, and is divided by sections: presentation, etiology, epidemiology, course, and treatment. The first disorder discussed is attention-deficit/hyperactivity disorder (ADHD), a problem familiar to primary care providers, and attempts to explain what accounts for its notably high prevalence. Nevertheless, with a focus primarily on pathology, the centerpiece of each chapter is a discussion of diagnostic issues. Beyond providing clinical insights, this book offers an impressive synopsis of research in the field, particularly noted in the sections on etiology. The sections on pharmacology provide up-to-date and technical information intended for use by the prescribing clinician.

Cochrane Database Syst Rev. 2010;6:CD006507.

Meditation therapies for attention-deficit/hyperactivity disorder (ADHD).

Krisanaprakornkit T, Ngamjarus C, Witoonchart C, et al.

BACKGROUND: Attention-deficit/hyperactivity disorder (ADHD) is one of the most common developmental disorders experienced in childhood and can persist into adulthood. The disorder has early onset and is characterized by a combination of overactive, poorly modulated behavior with marked inattention. In the long term it can impair academic performance, vocational success and social-emotional development. Meditation is increasingly used for psychological conditions and could be used as a tool for attentional training in the ADHD population.

OBJECTIVES: To assess the effectiveness of meditation therapies as a treatment for ADHD.

SEARCH STRATEGY: Our extensive search included: CENTRAL, MEDLINE, EMBASE, CINAHL, ERIC, PsycINFO, C2-SPECTR, dissertation abstracts, LILACS, Virtual Health Library (VHL) in BIREME, Complementary and Alternative Medicine specific databases, HSTAT, Informit, JST, Thai Psychiatric databases and ISI Proceedings, plus grey literature and trial registries from inception to January 2010.

SELECTION CRITERIA: Randomized controlled trials that investigated the efficacy of meditation therapy in children or adults diagnosed with ADHD.

DATA COLLECTION AND ANALYSIS: Two authors extracted data independently using a pre-designed data extraction form. We contacted study authors for additional information required. We analyzed data using mean difference (MD) to calculate the treatment effect. The results are presented in tables, figures and narrative form.

MAIN RESULTS: Four studies, including 83 participants, are included in this review. Two studies used mantra meditation while the other two used yoga compared with drugs, relaxation training, non-specific exercises and standard treatment control. Design limitations caused high risk of bias across the studies. Only one out of four studies provided data appropriate for analysis. For this study there was no statistically significant difference between the meditation therapy group and the drug therapy group on the teacher rating ADHD scale (MD -2.72, 95% CI -8.49 to 3.05, 15 patients). Likewise, there was no statistically significant difference between the meditation therapy group and the standard therapy group on the teacher rating ADHD scale (MD -0.52, 95% CI -5.88 to 4.84, 17 patients). There was also no statistically significant difference between the meditation therapy group and the standard therapy group in the distraction test (MD -8.34, 95% CI -107.05 to 90.37, 17 patients).

AUTHORS' CONCLUSIONS: As a result of the limited number of included studies, the small sample sizes and the high risk of bias, we are unable to draw any conclusions regarding the effectiveness of meditation therapy for ADHD. The adverse effects of meditation have not been reported. More trials are needed.

JAMA. 2010 Jul;304:27-28.

Increased risk of ADHD associated with early exposure to pesticides, PCBs.

Kuehn BM.

Psychiatr Genet. 2010;20:73-81.

Genetic variants in SLC9A9 are associated with measures of attention-deficit/hyperactivity disorder symptoms in families.

Markunas CA, Quinn KS, Collins AL, et al.

Objective A family was previously identified that cosegregates a pericentric inversion, inv(3)(p14 : Q21), with an early-onset developmental condition, characterized by impulsive behavior and intellectual deficit. The inversion breakpoints lie within DOCK3 and SLC9A9 at the p-arm and q-arm, respectively. Based on this report, these genes were selected to be evaluated in a family-based attention-deficit/hyperactivity disorder (AD/HD) association study.

Methods Conners Parent (CPRS) and Teacher (CTRS) Rating Scales of AD/HD symptoms and Conners Continuous Performance Test (CPT) measures were collected and a minimal number of tagging singlenucleotide polymorphisms (SNPs) in each gene were selected for analysis. Analyses were performed on families who met research criteria for AD/HD. Using the program, QTDT, each tagging SNP was tested for association with T-scores from the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) subscales according to the CTRS and CPRS, and five CPT measures.

Results After adjusting for multiple testing, a SNP in the 30 UTR of SLC9A9, rs1046706, remained significantly associated (false discovery rate, q value < 0.05) with scores on the DSM-IV hyperactive-impulsive and total symptom subscales according to the CTRS and errors of commission on the CPT. In addition, an intronic SLC9A9 SNP, rs2360867, remained significantly associated with errors of commission.

Conclusion Our results suggest that SLC9A9 may be related to hyperactive-impulsive symptoms in AD/HD and the disruption of SLC9A9 may be responsible for the behavioral phenotype observed in the inversion family. The association with SLC9A9 is particularly interesting as it was recently implicated in a genome-wide association study for AD/HD. Further investigation of the role of SLC9A9 in AD/HD and other behavioral disorders is warranted.

Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology. 2010 Jul;38:633-43.

Personality mediation of genetic effects on attention-deficit/hyperactivity disorder.

Martel MM, Nikolas M, Jernigan K, et al.

Personality traits may be viable candidates for mediators of the relationship between genetic risk and ADHD. Participants were 578 children (331 boys; 320 children with ADHD) between the ages of six and 18. Parents and teachers completed a comprehensive, multi-stage diagnostic procedure to assess ADHD and comorbid disorders. Mother completed the California Q-Sort to assess child Big Five personality traits. Children provided buccal samples of DNA which were assayed for selected markers on DRD4, DAT1, and ADRA2A. An additive genetic risk composite was associated with ADHD symptoms and maladaptive personality traits; maladaptive personality traits were associated with ADHD symptoms. Low conscientiousness and high neuroticism partially mediated the relationship between genetic risk and ADHD symptoms. Mediation effects for conscientiousness were specific to inattentive symptoms; effects for neuroticism generalized to all disruptive behaviors. High neuroticism and low conscientiousness may be useful as early markers for children at risk for ADHD.

Eas As A Psys. 2010;20:76-86.

A prospective observational study of attention-deficit hyperactivity disorder in Asia: Baseline characteristics of symptom severity and treatment options in a paediatric population.

Martenyi F, Zheng Y, Huang YS, et al.

Objectives: To better understand the burden and management of attention-deficit hyperactivity disorder in East Asia, this subanalysis of the baseline characteristics of a large prospective, observational, non-randomised study investigating the relationships between symptom severity, treatments, co-morbidities, and health outcomes provides information about the diagnosis of, and treatment patterns for, attention-deficit hyperactivity disorder in this region.

Methods: Outpatients with attention-deficit hyperactivity disorder symptoms participated in this 12-month study performed in China, Korea, and Taiwan. Patients were grouped according to whether they received conventional treatment or no or other treatment. Attention-deficit hyperactivity disorder symptom severity and co-morbidities were assessed using the Clinical Global Impressions-Attention-deficit Hyperactivity Disorder-

Severity scale and Child Symptom Inventory-4: Parent Checklist (categories B to J) / Adolescent Symptom Inventory-4: Parent Checklist (categories L and O), respectively.

Results: A total of 502 patients aged 6 to 18 years were enrolled. Investigators were psychiatrists (69%) and paediatricians (31%), who used the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (86%), the 10th revision of the International Classification of Diseases (6%), and other attention-deficit hyperactivity disorder diagnostic criteria (8%) for diagnosis. Pharmacotherapy was the most commonly prescribed treatment (n = 251; 50%), and treated patients were older (9.1 vs. 8.2 years; $p < 0.001$) and more severely ill (Clinical Global Impressions-Attention-deficit Hyperactivity Disorder-Severity scale, 4.6 vs. 4.2; $p < 0.001$) than those who were not treated. Anxiety and oppositional co-morbidities were commonly reported.

Conclusions: These data provide an insight into the demographics, diagnosis, and treatment of paediatric patients with attention-deficit hyperactivity disorder in East Asia, and provide a baseline for assessing changes in treatment practices in this population.

Int J Psychophysiol. 2010;77:8-12.

Behavioral and evoked potential measures of distraction in 5-year-old children born preterm.

Mikkola K, Wetzel N, Leipala J, et al.

Executive and attention dysfunctions are common in very preterm children. We studied their involuntary attention process by using behavioral measurements and auditory event-related potentials (AERP) with a distraction paradigm at age five years. The active task was to distinguish between two animal sounds. As an irrelevant feature the sounds were presented from frequent (standard) or infrequent (deviant, 11%) direction from two loudspeakers. Of the 28 preterm children, only 75% could accomplish the task, whereas all full-term children (n=15) could. When distinguishing the animal sounds, the reaction times were longer to the sounds from the deviant than from the standard direction in both groups, indicating involuntary distraction. The hit rates for the sounds from standard and deviant directions were similar in both groups. AERP amplitudes in the P1 interval and in the P3a interval elicited by standard and deviant stimuli were smaller in the preterm than in the control children. Deviants elicited P3a (indicating attentional orienting) and reorienting negativity (indicating attentional reorienting after distraction) in both groups. Comparable involuntary attentional orienting, distraction, and reorienting suggest similar maturation processes in 5-year-old preterm and full-term children. However, smaller AERP amplitudes in P1 and P3a interval suggest altered processing of auditory stimuli in those born preterm. As one-fourth of the preterm children could not accomplish the paradigm, less demanding paradigms should be used in studying children with increased distractibility.

Journal of Attention Disorders. 2010 Jul;14:7-14.

Fading memories: Retrospective recall inaccuracies in ADHD.

Miller CJ, Newcorn JH, Halperin JM.

Objective: This longitudinal study examines the recall accuracy of childhood ADHD symptoms in late adolescence and early adulthood by youth and their parents, compared with reports obtained during childhood.

Method: Participants (N = 94) are initially evaluated when they are aged between 7 and 11 and reassessed when they are aged between 16 and 22 years. All participants meet full DSM-IV diagnostic criteria for ADHD in childhood. Assessments at baseline and follow-up include clinical interviews and ADHD checklists.

Results: Results indicate that both youth and their parents have limited retrospective recall of childhood symptoms. Current ADHD symptoms improve accuracy of recall. Specifically, when current symptoms are endorsed, participants are more likely to recall clinically significant childhood ADHD symptoms.

Conclusion: These results suggest that late adolescents and young adults with ADHD and their parents have limited ability to accurately recall childhood symptoms, with reporting of past symptoms influenced by reports of severity of current symptoms.

Res Dev Disabil. 2010;31:1054-61.

Basic reading skills in Swedish children with late developing language and with or without autism spectrum disorder or ADHD.

Miniscalco C, Dahlgren Sandberg A.

Reading skills at age 7-8 years were examined in a community-representative sample of 21 screened and clinically examined children with language delay (LD) followed prospectively from 2.5 years of age. The present study aimed to (1) determine whether these children with a history of LD had deficits in basic reading skills, i.e. decoding and comprehension, compared to the age norms of standardized tests, (2) analyze if there was a relationship between reading outcome and neuropsychiatric diagnosis by comparing three subgroups of children, LD pure, LD. +. ASD (autism spectrum disorder) and LD. +. ADHD, and, (3) determine what language measures at age 6 years were associated with the 7-8-year reading outcome. Both decoding and comprehension of single word reading were significantly below the norm for the whole LD group, where children with LD. +. ASD scored lowest, and children with LD highest. However, the differences between the three groups did not reach significance. Two reader groups were identified according to the results of word decoding and comprehension, respectively, resulting in the same 7 children. ANOVA revealed that the only differences on the 6-year language tests between the two groups were found on color naming and word memory. This study has shown that children with LD and subsequently identified neurodevelopmental problems such as ASD and ADHD experience continued deficits, demonstrated also in reading skills and that the picture of the reading problems seemed to resemble those of typically developing children.

Parenting: Science and Practice. 2010 Apr;10:119-35.

Parental ADHD symptomology and ineffective parenting: The connecting link of home chaos.

Mokrova I, O'Brien M, Calkins S, et al.

Objective: This study examines links between maternal and paternal attention-deficit/hyperactivity disorder (ADHD) symptoms and parenting practices that require inhibition of impulses, sustained attention, and consistency; the role of home chaos in these associations is also assessed.

Design: ADHD symptoms, the level of home chaos, and parenting practices (e.g., involvement, inconsistent discipline, supportive and nonsupportive responses to children's negative emotions, and positive parenting) were assessed through self-reports of 311 mothers and 149 fathers of middle-childhood children. Teachers assessed the child ADHD symptoms.

Results: Mothers reported higher home chaos when they or their children had higher levels of ADHD symptoms; for fathers, only their own ADHD symptoms predicted higher levels of home chaos. Mothers' ADHD symptoms were positively associated with inconsistent discipline and nonsupportive responses to children's negative emotions, and these associations were mediated by home chaos. Higher levels of fathers' ADHD symptoms predicted more inconsistent discipline, low involvement, and a low level of supportive and a high level of nonsupportive responses to children's negative emotions. Home chaos moderated the link between paternal ADHD and inconsistent discipline and mediated the link between paternal ADHD and involvement. Overall, positive aspects of parenting, and those that require attention and ability to control one's impulses, may be compromised in fathers with high levels of ADHD symptoms.

Conclusions: Effectiveness of specific parenting practices for both mothers and fathers may be compromised in parents with ADHD symptoms. In certain cases, parental ADHD symptoms translate into ineffective parenting through disorganized homes.

Behav Brain Funct. 2010 May;6.

Attention-deficit hyperactivity disorder (ADHD) and glial integrity: S100B, cytokines and kynurenine metabolism—Effects of medication.

Oades RD, Dauvermann MR, Schimmelmann BG, et al.

Background: Children with attention-deficit/hyperactivity disorder (ADHD) show a marked temporal variability in their display of symptoms and neuropsychological performance. This could be explained in terms of an impaired glial supply of energy to support neuronal activity.

Method: We pursued one test of the idea with measures of a neurotrophin reflecting glial integrity (S100B) and the influences of 8 cytokines on the metabolism of amino-acids, and of tryptophan/kynurenine to neuroprotective or potentially toxic products that could modulate glial function. Serum samples from 21 medication-naïve children with ADHD, 21 typically-developing controls, 14 medicated children with ADHD and 7 healthy siblings were analysed in this preliminary exploration of group differences and associations.

Results: There were no marked group differences in levels of S100B, no major imbalance in the ratios of pro- to anti-inflammatory interleukins nor in the metabolism of kynurenine to toxic metabolites in ADHD. However, four trends are described that may be worthy of closer examination in a more extensive study. First, S100B levels tended to be lower in ADHD children that did not show oppositional/conduct problems. Second, in medicated children raised interleukin levels showed a trend to normalisation. Third, while across all children the sensitivity to allergy reflected increased levels of IL-16 and IL-10, the latter showed a significant inverse relationship to measures of S100B in the ADHD group. Fourthly, against expectations healthy controls tended to show higher levels of toxic 3-hydroxykynurenine (3 HK) than those with ADHD.

Conclusions: Thus, there were no clear signs (S100B) that the glial functions were compromised in ADHD. However, other markers of glial function require examination. Nonetheless there is preliminary evidence that a minor imbalance of the immunological system was improved on medication. Finally, if lower levels of the potentially toxic 3 HK in ADHD children were confirmed this could reflect a reduction of normal pruning processes in the brain that would be consistent with delayed maturation (supported here by associations with amino-acid metabolism) and a reduced metabolic source of energy.

Int J Psychiatry Clin Pract. 2010;14:116-26.

A prospective observational study of attention-deficit/hyperactivity disorder in Central and Eastern Europe and Turkey: Symptom severity and treatment options in a paediatric population.

Ondrejka I, Abali O, Paclt I, et al.

Objective. This study investigates the relationship between treatment regimen, symptom severity, comorbidities and health outcomes of paediatric patients with attention-deficit/hyperactivity disorder (ADHD) in Central and Eastern Europe (CEE).

Methods. Males and females aged 6-17 years with ADHD symptoms participated in this 12-month, prospective, observational, non-randomised study. Symptoms and comorbidities were assessed using the Child and Adolescent Symptom Inventory-4 Parent Checklists (CSI-4; ASI-4, categories L/O), and the Clinical Global Impressions-ADHD-Severity scale (CGI-ADHD-S). Baseline data are presented.

Results. The study included 566 patients from Czech Republic, Hungary, Romania, Slovakia and Turkey. Psychiatrists made all diagnoses using The American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV), World Health Organization International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10), and "other" criteria (73, 27 and 0.4%, respectively). Patients were grouped into two cohorts based on whether they were prescribed psychoand/ or pharmacotherapy (n =443) or not (n =123). Patients receiving prescribed treatment were older and demonstrated higher symptom severity scores than those receiving no or "other" treatment. Most patients were prescribed conventional treatment for ADHD at baseline.

Conclusions . Continued assessment of this population may aid the treatment and outcomes of ADHD in CEE.

Expert Rev Neurother. 2010 Apr;10:491-94.

Etiological pathways for developmental coordination disorder and attention-deficit/hyperactivity disorder: Shared or discrete?

Pearsall-Jones JG, Piek JP, Levy F.

Attention-deficit/hyperactivity disorder (ADHD) and developmental coordination disorder (DCD) are two of the most common developmental disorders of childhood. The rate of co-occurrence of DCD and ADHD has been found to be close to 50%. For a diagnosis of ADHD, inattention and/or hyperactivity must be more frequently displayed and be more severe than is typical for the person's developmental stage, and symptoms must be present before the age of 7 years; there must be impairment in two or more settings, and clinically significant impairment must be present in at least one of the following—academic, occupational or social functioning. Developmental coordination disorder and specific developmental disorder of motor function are also described in DSM-IV-TR and ICD-10, respectively. The causal pathways of developmental disorders are a combination of genetic, epigenetic and environmental factors that evolve over time. This has important implications for clinical practice, classification systems such as DSM and ICD, research and policy

development, and warrants further exploration of the nature of movement deficits associated with ADHD, and the nature of attention deficits associated with DCD.

Aust New Zealand J Psychiatry. 2010;44:528-34.

A brief office-based hazard perception intervention for drivers with ADHD symptoms.

Poulsen AA, Horswill MS, Wetton MA, et al.

Objective: The aim of this study was to develop a simple and brief hazard perception training intervention tailored to meet the needs of male drivers with attention-deficit-hyperactivity disorder symptoms.

Methods: Twenty male drivers with attention-deficit-hyperactivity disorder symptoms were quasi-randomly assigned to either a hazard perception training package (trained group) or a control intervention video (untrained group), presented in an office setting. Video-based hazard perception tests involving real-life driving scenes were conducted both before and after the interventions.

Results: The hazard perception response times of the trained group significantly improved compared with the untrained group, $t(18)=3.21$, $p < 0.005$.

Conclusions: Significant improvements in hazard perception response times in male drivers with attention-deficit-hyperactivity disorder symptoms were found following the training intervention. This indicates that such training has potential for inclusion in a management plan for reducing the crash rates of this high risk group of drivers. The training is practical, quick, and affordable, and has the potential to translate into real-world driving outcomes.

J Dev Behav Pediatr. 2010 Apr;31:175-80.

Instability in teacher ratings of children's inattentive symptoms: Implications for the assessment of ADHD.

Rabiner DL, Murray DW, Rosen L, et al.

Objective: To examine the cross-grade stability of clinically elevated teacher ratings of inattentive symptoms in 3 samples of elementary schoolchildren.

Participants and Methods: Samples 1 and 2 included 27 first graders and 24 fourth graders, respectively, identified based on clinically elevated teacher ratings of inattentive symptoms. The third sample included 28 children in grades 1 to 4 from the Multimodal Treatment Study of attention-deficit hyperactivity disorder (Multimodal Treatment Study of Children with attention-deficit hyperactivity disorder Study) with a confirmed attention-deficit hyperactivity disorder diagnosis. Teacher ratings of inattentive symptoms were completed an average of 12 to 14 months apart so that cross-grade stability of elevated ratings could be computed for each sample.

Results: In all 3 samples, clinically elevated ratings persisted for less than 50% of children and between 25% and 50% had ratings that declined to within the normative range. The decline in attention difficulties was not related to hyperactivity, oppositional behavior, or anxiety at baseline, nor was it explained by children beginning medication treatment.

Conclusions: Many elementary-aged children rated by their teachers as highly inattentive are not considered to demonstrate these problems the following year, even children with a confirmed attention-deficit hyperactivity disorder diagnosis. The instability in clinically elevated teacher ratings found across 3 independent samples highlights the importance of annual reevaluations to avoid treating children for problems that may no longer be present.

Psychol Rep. 2010 Apr;106:513-18.

Relationship of the Kaufman Brief Intelligence Test-Second Edition and the Wechsler Abbreviated Scale of Intelligence in children referred for ADHD.

Raggio DJ, Scattone D, May W.

This study examines the relationship between the Wechsler Abbreviated Scale of Intelligence (WASI) and the Kaufman Brief Intelligence Test-Second Edition (KBIT-2). Increasingly, psychologists are using brief measures of intelligence, but scant information exists regarding their clinical utility in various populations. 44 children referred for evaluation of ADHD were administered the KBIT-2 and WASI in counterbalanced order. Results of this study indicated the WASI to be a more stable measure of ADHD children's intelligence, that

the KBIT-2 Vocabulary scores were significantly lower than the WASI Verbal score, and that there was significant variability within participants.

World J Biol Psychiatry. 2010;11:684-98.

Attention deficit hyperactivity disorder in adults.

Rosler M, Casas M, Konofal E, et al.

Objective. To examine available literature regarding attention deficit hyperactivity disorder (ADHD) in adults.

Methods. An electronic literature search of peer-reviewed English language articles using MEDLINE (without time limits) was undertaken.

Results. Symptoms of ADHD in adults exert a substantial negative impact on daily life, including work, social life and relationships. Co-morbidities are common, further impairing quality of life. Diagnosis of adult ADHD can be difficult, as current criteria require evidence of symptom onset before the age of 7 years and impact on activities typically undertaken by children. Drug therapy is the first-line treatment for adult ADHD, particularly stimulant medication. However, methylphenidate (MPH) immediate-release tablets require three or more times daily dosing, which can impact on compliance, while demonstrating a loss of symptomatic benefit later in the day. Extended-release preparations of MPH, mixed amphetamine salts and dexamphetamine can provide symptom control for 612 h and the non-stimulant atomoxetine has demonstrated benefit in reducing ADHD symptoms. These therapies are generally well tolerated, but may be associated with adverse effects on the cardiovascular system, which need to be further assessed in controlled clinical trials. Psychological therapy may be beneficial in adults who continue to experience clinically significant symptoms while receiving pharmacotherapy.

Conclusion. Further research in all areas of adult ADHD is urgently needed.

J Dev Behav Pediatr. 2010 Jun;31:369-75.

Conditioned placebo dose reduction: A new treatment in attention-deficit hyperactivity disorder?

Sandler AD, Glesne CE, Bodfish JW.

Objective: This study examined if pairing a placebo with stimulant medication produces a placebo response that allows children with attention-deficit hyperactivity disorder (ADHD) to be maintained on a lower dose of stimulant medication. The primary aim was to determine the efficacy, side effects, and acceptability of a novel conditioned placebo dose reduction procedure.

Method: Participants included 99 children ages 6 to 12 years with ADHD. After an initial double-blind dose finding to identify optimal dose of mixed amphetamine salts, subjects were randomly assigned to 1 of 3 treatments of 8-week duration: (a) conditioned placebo dose reduction condition (50% reduced dose/placebo [RD/P]) or (b) a dose reduction only condition (RD) or (c) a no reduction condition (full dose). The innovative conditioned placebo dose reduction procedure involved daily pairing of mixed amphetamine salts dose with a visually distinctive placebo capsule administered in open label, with full disclosure of placebo use to subjects and parents.

Results: Seventy children completed the study. There were no differences in subject retention among the 3 groups. Most subjects in the RD/P group remained stable during the treatment phase, whereas most in the RD group deteriorated. There was no difference in control of ADHD symptoms between the RD/P group and the full dose group, and both RD/P and full dose groups showed better ADHD control than the RD group. Treatment emergent side effects were lowest in the RD/P group.

Conclusion: Pairing placebos with stimulant medication elicits a placebo response that allows children with ADHD to be effectively treated on 50% of their optimal stimulant dose.

J Psychiatr Res. 2010;44:621-28.

Prefrontal oxygenation during working memory in ADHD.

Schecklmann M, Romanos M, Bretscher F, et al.

Objectives: Deficits in working memory have been repeatedly found on a behavioural level in children with attention-deficit/hyperactivity disorder (ADHD). Functional brain imaging studies have revealed evidence for alterations in the prefrontal cortex associated with working memory. So far it remains unresolved whether

object (OWM) and spatial visual working memory (SWM) are distinctly impaired in ADHD. We investigated this issue with the first multi-channel functional near-infrared spectroscopy study of children with ADHD.

Method: We investigated 19 children with ADHD combined type (DSM-IV) and 19 controls matched for age (8-15. years), sex, handedness, and intelligence during a working memory task assessing OWM and SWM separately, and a control condition (CON). Prefrontal brain activity was measured by concentration changes of oxygenated haemoglobin.

Results: Working memory performance showed significant differences for conditions (OWM > SWM > CON), but no differences between groups. Cortical prefrontal activation was significantly higher for OWM and SWM in contrast to CON, again with no differences between groups.

Conclusions: We found no indication for an altered prefrontal processing during OWM and SWM tasks in ADHD children compared to controls. Reviewing the existing imaging literature on working memory in ADHD and considering the present data, we discuss possible confounding factors relevant for brain activity in previous, the current, and future investigations. Thus, it is of high importance to capture developmental trajectories, task specific discrepancies, and effects of permanent medication intake in future studies.

Journal of Attention Disorders. 2010 Jul;14:69-78.

Stimulant medication and prefrontal functional connectivity during working memory in ADHD: A preliminary report.

Sheridan MA, Hinshaw S, D'Esposito M.

Objective: Recent theoretical and empirical work suggests that while unmedicated, children with ADHD have a deficit in subcortical processing that leads to greater and more varied prefrontal cortical (PFC) activation, compared to (a) age-matched control participants and (b) their own brain activity while on stimulant medication. This pattern has been described elsewhere as inefficient.

Method: Functional magnetic resonance imaging (fMRI) and functional connectivity analyses were used during a working memory task for five female adolescents with ADHD, aged 11 to 17 years, both on and off their usual dose of stimulant medication.

Results: On medication, adolescents with ADHD demonstrated less PFC activation and less functional connectivity between frontal and subcortical regions compared to off medication.

Conclusions: Because of the small sample size, results are presented as preliminary findings which await replication in a larger sample. However, these findings lend support to the idea that remediation of inefficiencies in PFC function for individuals with ADHD by stimulant medication may be related, in part, to frontal-subcortical connectivity.

Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology. 2010 Jul;38:645-56.

Inconsistent self-report of delinquency by adolescents and young adults with ADHD.

Sibley MH, Pelham WE, Molina BSG, et al.

The purpose of the current study was to test the ability of adolescents and young adults with childhood ADHD to reliably self-report delinquency history. Data were examined from the Pittsburgh ADHD Longitudinal Study (PALS), a follow-up study of children diagnosed with ADHD between 1987 and 1996. Self-report of lifetime delinquency history was compared to concurrent parent-report and to self-report 1 year later. Participants included 313 male probands and 209 demographically similar comparison individuals without ADHD. Results indicated that adolescents and young adults with childhood ADHD were more likely than comparison participants to fail to report delinquent acts reported by a parent and to recant acts they endorsed 1 year earlier. This trend was most apparent for acts of mild to moderate severity. After controlling for several covariates, current ADHD symptom severity and parent-report of the participant's tendency to lie predicted reporting fewer delinquent acts than one's parent. Current ADHD symptom severity also predicted more recanting of previously endorsed acts. Based on these findings, several recommendations are made for the assessment of delinquency history in adolescents and young adults with childhood ADHD.

Jordan J Pharm. 2010;3:56-62.

Attention deficit/hyperactivity disorder: A preliminary study in the Nelson Mandela metropole (scientific note).

Snyman S, Truter I.

The objective of the study was to determine the treatment and care of a group of primary school children diagnosed with Attention Deficit/Hyperactivity Disorder (ADHD) in the Nelson Mandela Metropole (NMM) during 2005. The study consisted of two questionnaire surveys and a health education talk. Firstly, a questionnaire was distributed to 876 parents of children attending a primary school in the NMM. A health education talk, based on the results of the survey, was thereafter presented to parents and teachers at the school. A second questionnaire was then distributed to parents whose children had been diagnosed with ADHD. The response rate to the initial survey was 13.0%. Most parents were interested to know more about the causes of ADHD and alternative treatments available. The talk on ADHD was attended by 75 parents and teachers. The second questionnaire was thereafter distributed and the response rate was 45.0%. Most children (83.3%) were male, with an average age of 9.6 (SD=1.9) years. Alternative treatments had been tried by parents to improve symptom control in their children, but the outcomes were unsatisfactory. A need for comprehensive studies on the treatment and care of children diagnosed with ADHD exists in South Africa.

Psychiatry Research: Neuroimaging. 2010 Jun;182:238-43.

Quantitative MR analysis of caudate abnormalities in pediatric ADHD: Proposal for a diagnostic test.

Soliva JC, Fauquet J, Bielsa A, et al.

Most morphometric magnetic resonance imaging (MRI) studies of pediatric attention-deficit/hyperactivity disorder (ADHD) with appropriate sample sizes reveal a decreased right caudate nucleus volume. Recently, our group reported that this decrease is mainly due to a diminished right caudate body volume (rCBV). Here, we hypothesize that, employing either the total bilateral caudate volume (tbCV) or the bilateral caudate body volume (bCBV) as scaling variables, the rCBV/tbCV and rCBV/bCBV ratios could be found diminished and used as a basis of an imaging diagnostic test. Volumetric caudate nucleus data were obtained from a case-control morphometric MRI study with 39 ADHD subjects and 39 handedness- and IQ-matched controls, using a novel semi-automated caudate segmentation procedure. Student t-tests comparing each relevant ratio were conducted between the two samples. After splitting the samples into two groups, a receiving operator characteristic (ROC) analysis was conducted on the training group to determine the optimal cut-off. Its performance was then examined on the test group. The rCBV/bCBV ratio was found to be statistically different. For a value equal or inferior to 0.48, the specificity was 95.00%. We propose using the rCBV/bCBV ratio to assist in the diagnosis of ADHD in children.

Acta Paediatr Int J Paediatr. 2010;99:1199-204.

Motor function and methylphenidate effect in children with attention deficit hyperactivity disorder.

Stray LL, Ellertsen B, Stray T.

Aim: Hyperactivity, impulsivity and poor attention are the core problems of ADHD and central stimulant medication is the preferred treatment. Many children with ADHD also display motor problems. The present study investigated the presence of motor problems in subjects who showed positive response to central stimulants on ADHD symptoms, compared with non-responders.

Method: This is a retrospective study of 73 children diagnosed ADHD, aged 5-17 years, who had been assessed with parts of the 'Motor Function Neurological Assessment' (MFNU) and evaluated with regard to effect of central stimulant medication. The sample was divided into two subgroups based on the responses to methylphenidate: Medicine responders and Non medicine responders.

Results: Stimulant responders showed significantly more motor problems than the non-responders on all sub-tests and on the total problem score of the MFNU. Motor problems were present both in younger (age 5-10 years) and older (11-17 years) stimulant responders. There were no gender differences in motor performance.

Conclusion: Our findings indicate that the probability of positive effect of central stimulants on core problems of ADHD is higher when motor problems are present in addition to ADHD symptoms, than when motor problems are absent.

Journal of Attention Disorders. 2010 Jul;14:86-94.

Attention training for school-aged children with ADHD: Results of an open trial.

Tamm L, Hughes C, Ames L, et al.

Objective: The article discusses a feasibility study conducted to examine whether Pay Attention!, an intervention training sustained, selective, alternating, and divided attention, could be utilized in a clinical setting with children diagnosed with ADHD, and whether children who received the intervention made attention and executive functioning gains.

Method: After a diagnostic and baseline evaluation, 23 school-aged children with ADHD participate in up to 16 sessions of Pay Attention! and the outcomes are evaluated.

Results: Results show the intervention is feasible to administer and acceptable to participants. Parents and clinicians rate fewer ADHD symptoms following the intervention and report improvements in executive function. Child performance on neuropsychological tests showed improvements in fluid reasoning and cognitive flexibility and working memory.

Conclusion: The findings suggest that a randomized clinical trial of Pay Attention! is warranted to investigate its viability as a treatment for attention and executive functioning deficits in ADHD.

Arch Dis Child. 2010;95:513-17.

Young adults with ADHD: An analysis of their service needs on transfer to adult services.

Taylor N, Fauset A, Harpin V.

Objectives: To identify the ongoing service needs of young people with attention-deficit hyperactivity disorder (ADHD).

Design: A case note review of all children aged 14 and over with a diagnosis of ADHD seen in a paediatric neurodisability clinic.

Participants: 139 young people aged 14 years and over on 1 September 2007 with a diagnosis of ADHD were identified from ADHD service user databases at a centre in Sheffield, UK.

Results: 102 young people were on medication for ADHD and just over 50% had well controlled ADHD. 71% had at least one co-morbid condition. 46 patients had had intervention from child and adolescent mental health services and 17% had offended. 37% were likely to need transition to adult mental health services as soon as they left paediatric services and 36% would benefit from the expertise of a clinical nurse specialist, either to support a general practitioner (GP) or adult mental health professionals.

Conclusions: The recent National Institute for Health and Clinical Excellence guidelines highlight the need to provide transition services for young people with ADHD who have continuing impairment. The need for services for adults with ADHD is also recognised. The study confirms and refines the nature of this need in the local population. Young people with mental health problems in addition to their ADHD will need support from adult mental health services. However, a significant group of young adults are likely to be managed well by specialist nurses working with GPs in a primary care setting or adult mental health.

J Clin Exp Neuropsychol. 2010 Apr;32:366-79.

Working memory, response inhibition, and within-subject variability in children with attention-deficit/hyperactivity disorder or reading disorder.

Van De Voorde S, Roeyers H, Verté S, et al.

This study compared children with ADHD (n=19), reading disorder (RD; n=17), ADHD+RD (n=21), and control children (n=19) on linguistic and executive function measures. We found no evidence of response inhibition problems in ADHD or RD when a baseline measure of functioning was taken into account. General working memory problems were only found in children with RD or ADHD+RD. Both children with ADHD and RD showed a highly inaccurate (more commission errors) and variable (higher within-subject standard

deviation of reaction time) response style. The comorbid group made most errors, suggesting that different factors underlie the high error rate in both disorders.

J Affective Disord. 2010;124:283-90.

Impact of anxiety disorders on attentional functions in children with ADHD.

Vloet TD, Konrad K, Herpertz-Dahlmann B, et al.

Introduction: The impact of internalizing comorbid disorders on cognitive functions in attention-deficit hyperactivity disorder (ADHD) is hardly understood. While inconsistent findings exist with respect to the modulating effect of anxiety on impulsivity in ADHD, only few neuropsychological studies focused on other attention parameters. This is the first study that examines the influence of anxiety disorders (ANX) on ADHD in a model-oriented approach including selectivity and intensity parameters of attention.

Methods: Children with ADHD, ADHD + ANX and healthy controls (n = 34 for each group, all aged 8-15 years) participated in five neuropsychological tasks (alertness, sustained attention, divided attention, go/no-go and set-shifting). Group differences were evaluated using analysis of variance (ANOVA) for each dependent variable, with group as independent variable.

Results: Data indicated that children with ADHD performed worse than healthy controls with regard to almost all parameters of attention. While ANX had no mitigating effect on impulsivity in ADHD, performance in sustained attention and selective attention tasks of children with ADHD + ANX was better than that of children with ADHD only.

Limitations: Since the present data were derived from a large neuropsychological data base which focused primary on children with ADHD and different comorbidities no comparison to a "pure" ANX group was possible.

Conclusions: These findings might indicate that ADHD + ANX constitute a cognitively distinct subtype, with possible individual symptomatology, development and therapeutic needs. Further investigations are needed to clarify the specificity of these findings and to disentangle the impact of trait versus state anxiety on neuropsychological performance in children with ADHD.

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“Sicurezza a lungo termine dei farmaci utilizzati nel trattamento di bambini in età scolare con sindrome da deficit di attenzione e iperattività ed epidemiologia della malattia nella popolazione italiana”.

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