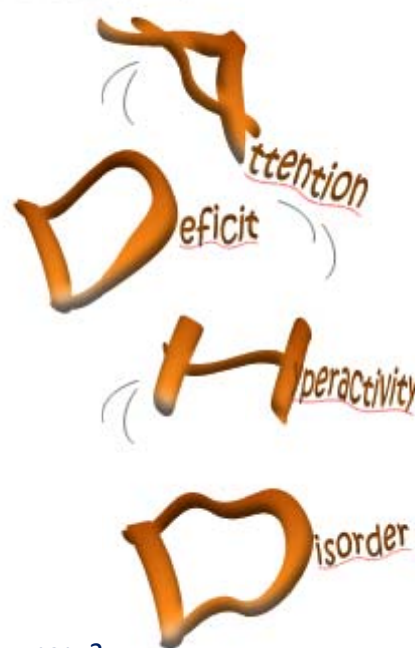


NEWSLETTER



N. 36 anno III – ottobre 2010



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BIBIOGRAFIA ADHD OTTOBRE 2010

J Clin Diagn Res. 2010;4:3000-02.

COULD PRANAYAMA AND EKAPADASANA BE AN ALTERNATIVE MODALITY IN THE MANAGEMENT OF ATTENTION DEFICIT HYPERACTIVITY DISORDER IN CHILDREN?

Akhila JS.

ADHD is the most commonly studied and diagnosed psychiatric disorder in children, affecting about 3% to 5% of children globally. The symptoms are frequently comingled with learning problems, oppositional conduct, and depression, which altogether compound the family's emotional burden. Mounting controversy over the widespread use of drugs in the management of AttentionDeficit Hyperactivity Disorder in children. and possible life-threatening effects from its long-term use make it imperative that alternative modalities be implemented for ADHD management. Parents and children express desperation for interventions that will work, but without the adverse effects inflicted by the pharmaceutical management model. Research has proved that an effective alternative modality for treating ADHD in otherwise physically and mentally healthy children would be the regular dedicated practice of the ANULOM - VILOM PRANAYAMA PROCEDURE and the EKA PADASANA by the affected child above age 8-9 yrs and her/his parent, because it has been noted that children practice regularly only if accompanied by their guardians. The benefits are seen immediately, but last only until the procedures are practiced. Hence, to maintain the benefits, daily practice is essential. The results therefore depend on the dedication of the parents towards the child's improvement.

Egypt J Neurol , Psychiatr Neurosurg. 2010;47:399-406.

QUANTITATIVE EEG IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Amer DA, Rakhaw MY, El Kholy SH.

Background: ADHD affects approximately 4-8% of children worldwide. EEG studies in children with ADHD search for data with respect to various aspects of brain function.

Objective: To investigate if children with ADHD have a distinctive EEG pattern that reflects their alertness and behavior using quantitative EEG.

Methods: Thirty children with ADHD and 33 control children were evaluated using digital EEG recordings. Power spectral analysis was carried out for the absolute and relative power of the frequency bands delta (1-3 Hz), theta (4-7 Hz), alpha (8-11 Hz), beta1 (12-15 Hz), beta2 (16-20 Hz). QEEG findings were correlated to the Conners' Parent Rating Scale scores.

Results: ADHD children showed more delta power and less alpha power mainly in frontal leads. Of the whole sample, children who scored >65 on the Conners' DSM-IV Total had lower beta1 power in frontal, central and temporal leads. Regression analysis of the relative power across frequency bands at the midline leads showed that relative theta power at Cz positively predicted the score. At Cz as well, children scoring >65 on the DSM-IV Inattentive subscale had increased theta relative power and theta/beta ratio and children scoring >65 on the DSM-IV Hyperactive-Impulsive subscale had decreased beta1 relative power. The increased theta/beta ratio at Cz predicted both the scores of the inattention and hyperactivity/impulsivity scales of the DSM-IV.

Conclusion: There is increased low frequency activity and decreased high frequency activity in children with ADHD. The i ratio at Cz may aid as an indicator in the diagnosis of ADHD.

Funct Neurol. 2010;25:87-92.

EVENT-RELATED POTENTIALS STUDY IN ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Anjana Y, Khaliq F, Vaney N.

Attention deficit hyperactivity disorder (ADHD) is a childhood disorder characterized by lack of sustained attention, hyperactivity and impulsivity. Children with ADHD have functional impairment occurring at multiple levels. In the present study, cognitive status was assessed using auditory event-related potentials (ERPs). Twenty ADHD children and 20 controls were recruited for the study and ERPs were recorded on a computerized evoked potential recorder, using the international 10-20 system of electrode placement. The ADHD children showed a statistically significant N200 latency prolongation and amplitude decrease compared with the controls; the latencies of the other waves, i.e. N100, P200, P300, were prolonged in the ADHD children but the difference versus the controls was statistically insignificant. Reaction time was significantly longer in the ADHD subjects as compared with the controls. The above findings are suggestive of dysfunctions in the discrimination of task-relevant stimuli and a slower motor response in ADHD children.

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Klin Psikofarmakol Bul. 2010;20:66-73.

COMORBIDITY OF ATTENTION DEFICIT HYPERACTIVITY DISORDER IN ADULT BIPOLAR I DISORDER: A PRELIMINARY STUDY.

Atesci F, Tuysuzogullari HD, Ozdel O, et al.

Objective: Attention-deficit hyperactivity disorder (ADHD) is a disorder that typically first appears in childhood and has the main symptoms of inattention, overactivity, and impulsivity. Attention-deficit hyperactivity disorder and bipolar disorder are frequently comorbid and overlapping diagnoses. Although there is data describing the overlap of ADHD and bipolar disorder in childhood and youth, little is known about the comorbidity of these disorders in adulthood. In this study, our aim was to investigate comorbidity of attention deficit hyperactivity disorder in bipolar disorder and to compare several sociodemographic and clinical variables of bipolar patients with and without comorbid ADHD.

Method: Sixty patients diagnosed with euthymic bipolar I disorder were enrolled in the study. Patients with bipolar disorder were observed in the outpatient setting during at least two months to ensure the existence of euthymia before the study procedures were conducted. Sociodemographic data form, Hamilton Depression, Young Mania, Wender Utah and Adult ADHD Rating Scales, and the Structured Clinical Interview for DSM-IV were applied to the participants. Socio-demographic data included variables such as age, gender, educational status, episode number, and the type of present treatment. Between group comparisons were made by using Mann-Whitney U test and Chi-square test.

Results: The comorbidity rate of ADHD in our study sample with bipolar I disorder was 21.7%. There were no significant differences between with and without comorbid ADHD groups in terms of their age, gender, and educational level. Comorbid ADHD patients were smoking more cigarettes than those without comorbid ADHD. In addition, the number of their total episodes and manic episodes were relatively higher in the comorbid ADHD group.

Conclusions: The results suggest that ADHD is a common comorbidity in adult bipolar patients. The existence of high rates of comorbidity leads to important diagnostic and therapeutic complications. Further study is needed to clarify the impact of ADHD on clinical outcomes of adult bipolar patients and to provide guidelines for therapeutic approaches.

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Clin Neurophysiol. 2010;121:1871-77.

RESTING-STATE EEG GAMMA ACTIVITY IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

Barry RJ, Clarke AR, Hajos M, et al.

Objective: Children with Attention-Deficit/Hyperactivity Disorder (AD/HD) have well-described abnormalities in the four traditional EEG bands. However, to date the gamma band has not been widely investigated. This study investigated resting-state EEG in children with AD/HD and matched controls, with a particular focus on gamma activity.

Method: Forty children with AD/HD, and 40 age- and sex-matched controls, participated. EEG was recorded from 19 sites during an eyes-closed resting condition and Fourier transformed to provide estimates for absolute and relative power in the delta, theta, alpha, beta and gamma bands.

Results: Children with AD/HD had elevated levels of absolute delta and theta power, and decreased levels of absolute beta and gamma power, compared to controls. With relative power measures, children with AD/HD showed enhanced delta and theta activity, with reduced alpha, beta and gamma activity. Inattention scores on the Conners' Parent Rating Scale were negatively correlated with absolute gamma.

Conclusions: These patients demonstrate the typical EEG profile in the eyes-closed resting state, over the delta, theta, alpha and beta bands, associated with AD/HD. In addition, compared with controls, they demonstrate reduced absolute and relative gamma activity. These differences appear to contribute importantly to their dysfunctional stimulus processing, and impact their behavioural outcomes.

Significance: This resting-state study extends the well-established fast-wave EEG deficits in children with AD/HD to the gamma band, and links that to increased inattention, which is of special importance in understanding their cognitive-processing problems.

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Res Dev Disabil. 2010;31:1443-47.

A PRELIMINARY STUDY ON THE EFFECT OF METHYLPHENIDATE ON MOTOR PERFORMANCE IN CHILDREN WITH COMORBID DCD AND ADHD.

Bart O, Podoly T, Bar-Haim Y.

Attention Deficit Hyperactive Disorder (ADHD) and Developmental Coordination Disorder (DCD) are two developmental disorders with considerable comorbidity. The impact of Methylphenidate (MPH) on ADHD symptoms is well documented. However, the effects of MPH on motor coordination are less studied. We assessed the influence of MPH on motor performance of children with comorbid DCD and ADHD. Participants were 18 children (13 boys, mean age 8.3 years) diagnosed with comorbid DCD and ADHD. A structured clinical interview (K-SADS-PL) was used to determine psychopathology and the Movement Assessment Battery for Children-Checklist were used to determine criterion for motor deficits. The Movement Assessment Battery for Children (M-ABC) was administered to all participants once under the influence of MPH and once under a placebo pill condition. The motor tests were administered on two separate days in a double-blinded design. Participants' motor performance with MPH was significantly superior to their performance in the placebo condition. Significant improvement was observed in all the M-ABC sub-tasks except for static balance performance. The findings suggest that MPH improves motor coordination in children with comorbid DCD and ADHD but clinically significant improvement was found in only 33% of the children.

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Ann Med -Psychol. 2010;168:632-35.

INTEREST OF THE USE OF THE PROBLEM VIDEOGAME PLAYING (PVP) QUESTIONNAIRE FROM TEJEIRO: EXPLORATORY STUDY IN ADHD CHILDREN.

Bioulac S, Arfi L, Michel G, et al.

During recent decades, videogame playing has become one of the main leisure activities in children and adolescents. However, studies on video game addiction are still very few. In order to evaluate the

difficulties induced by an excessive "consumption" of video games, the team of Dr. Tejeiro developed a self-rating questionnaire: the Problem Videogame Playing questionnaire (PVP, Tejeiro, 2002). We translated this questionnaire with the agreement of the author and carried out, then, a "back-translation"

Population: The sample consisted of 50 children (29 children with an Attention Deficit Hyperactivity Disorder [ADHD] and 21 controls). All subjects were evaluated on their consumption of videogames (PVP scale) and on their levels of externalized symptomatology by the Conners Parent rating scale and the Child Behavior Checklist (CBCL).

Results: None the controls scored above four on the PVP scale whereas 10 hyperactive children among the 29 answered affirmatively to five or more questions ($P= 0.02$). We focused on PVP scores, and we distinguished two sub-groups among the hyperactive population: children having a score equal to or higher than 5 ($n= 10$, group 1) and those having a score lower than 5 (group 2). The subjects of group 1 presented a higher index of hyperactivity on the Conners Parents rating scale than group 2 ($P= 0.02$); and obtained higher scores on the Child Behavior Checklist, on the delinquent subscale ($P= 0.03$), the aggressive subscale ($P= 0.02$) and on externalizing problems ($P= 0.01$).

Conclusion: The hyperactive children present more problems associated with video games. Children with high PVP scores appear with a particular behavioral clinical profile. This tool appears useful, for the clinician, in the description of the behaviours of children and teenagers towards video games. Also, it is necessary to use this questionnaire, in its French version, on larger populations.

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Pediatrics. 2010;126:e796-e806.

STIMULANT-RESPONSIVE AND STIMULANT-REFRACTORY AGGRESSIVE BEHAVIOR AMONG CHILDREN WITH ADHD.

Blader JC, Pliszka SR, Jensen PS, et al.

OBJECTIVES: The objective of this study was to examine factors that are associated with aggression that is responsive versus refractory to individualized optimization of stimulant monotherapy among children with attention-deficit/hyperactivity disorder (ADHD).

METHODS: Children who were aged 6 to 13 years and had ADHD, either oppositional defiant disorder or conduct disorder, significant aggressive behavior, and a history of insufficient response to stimulants completed an open stimulant monotherapy optimization protocol. Stimulant titration with weekly assessments of behavior and tolerability identified an optimal regimen for each child. Families also received behavioral therapy. Parents completed the Retrospective-Modified Overt Aggression Scale (RMOAS) at each visit. Children were classified as having stimulantrefractory aggression on the basis of R-MOAS ratings and clinician judgment. Differences that pertained to treatment, demographic, and psychopathology between groups with stimulant monotherapy-responsive and -refractory aggression were evaluated.

RESULTS: Aggression among 32 (49.3%) of 65 children was reduced sufficiently after stimulant dosage adjustment and behavioral therapy to preclude adjunctive medication. Those who responded to stimulant monotherapy were more likely to benefit from the protocol's methylphenidate preparation (once-daily, triphasic release), showed a trend for lower average dosages, and received fewer behavioral therapy sessions than did children with stimulant-refractory aggression. Boys, especially those with higher ratings of baseline aggression and of depressive and manic symptoms, more often exhibited stimulant-refractory aggression.

CONCLUSIONS: Among children whose aggressive behavior develops in the context of ADHD and of

oppositional defiant disorder or conduct disorder, and who had insufficient response to previous stimulant treatment in routine clinical care, systematic, well-monitored titration of stimulant monotherapy often culminates in reduced aggression that averts the need for additional agents.

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Prim Care Companion J Clin Psych. 2009;11:365.

ALOPECIA FOLLOWING INITIATION OF LISDEXAMFETAMINE IN A PEDIATRIC PATIENT.

Brahm NC, Hamilton DR.

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Arch Pediatr Adolesc Med. 2010 Oct;164:930-34.

ASSOCIATION BETWEEN ATTENTION-DEFICIT/HYPERACTIVITY DISORDER IN ADOLESCENCE AND SUBSTANCE USE DISORDERS IN ADULTHOOD.

Brook DW, Brook JS, Zhang C, et al.

OBJECTIVES: To determine whether attention-deficit/hyperactivity disorder (ADHD) in adolescence is related to substance use disorders (SUDs) in adulthood and whether conduct disorder (CD) mediates this relationship.

DESIGN: A prospective design incorporating 5 assessments in participants spanning the mean ages of 14 to 37 years. Two baseline assessments were taken at ages 14 and 16 years, and 3 outcome assessments were taken between ages 27 and 37 years.

SETTING: United States.

PARTICIPANTS: A community sample of individuals initially drawn from upstate New York in 1975 and observed to a mean age of 37 years.

INTERVENTIONS: The Diagnostic Interview Schedule for Children was used to assess ADHD and CD and the University of Michigan Composite International Diagnostic Interview was used to assess SUDs.

MAIN OUTCOME MEASURE: A diagnosis of SUDs given to participants in adulthood.

RESULTS: The odds ratios for ADHD and CD in adolescence as related to SUDs in adulthood were 1.9 and 3.5, respectively. The association between ADHD and SUDs, however, was indirect because CD served as a mediator between ADHD and SUDs.

CONCLUSIONS: Pediatricians should focus on adolescent ADHD when it progresses to CD because CD is a major predictor of SUDs in adulthood.

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Arch Gen Psychiatry. 2010;67:1044-51.

VERY EARLY PREDICTORS OF ADOLESCENT DEPRESSION AND SUICIDE ATTEMPTS IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

Chronis-Tuscano A, Molina BSG, Pelham WE, et al.

Context: Major depression and dysthymia in adolescence are associated with substantial disability, need for mental health services, and risk for recurrence. Concrete suicidal ideation and attempts during adolescence are particularly associated with significant distress, morbidity, and risk for completed suicide.

Objectives: To test the hypothesis that young children with attention-deficit/hyperactivity disorder (ADHD) are at increased risk for depression and suicidal ideation and attempts during adolescence and to identify early predictors of which young children with ADHD are at greatest risk.

Design: Prospective follow-up study.

Setting: Chicago, Illinois, and Pittsburgh, Pennsylvania.

Patients: A cohort of 125 children who met DSM-IV criteria for ADHD at 4 to 6 years of age and 123 demographically matched comparison children without ADHD were prospectively followed up in 7 structured diagnostic assessments of depression and suicidal behavior in assessment years 6 through 14, spanning 9 through 18 years of age.

Main Outcome Measures: DSM-IV criteria for depressive disorders and suicidal behavior.

Results: Children with ADHD at 4 to 6 years of age were at greatly increased risk for meeting DSM-IV criteria for major depression or dysthymia (hazard ratio,4.32) and for attempting suicide (hazard ratio,3.60) through the age of 18 years relative to comparison children. There were marked variations in risk for these outcomes among children with ADHD, however. Within the ADHD group, children with each subtype of

ADHD were at risk but for different adverse outcomes. Girls were at greater risk for depression and suicide attempts. Maternal depression and concurrent child emotional and behavior problems at 4 to 6 years of age predicted depression and suicidal behavior.

Conclusions: All subtypes of ADHD in young children robustly predict adolescent depression and/or suicide attempts 5 to 13 years later. Furthermore, female sex, maternal depression, and concurrent symptoms at 4 to 6 years of age predict which children with ADHD are at greatest risk for these adverse outcomes. Identifying high-risk young children with ADHD sets the stage for early prevention trials to reduce risk for later depression and suicidal behavior.

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Klin Psikofarmakol Bul. 2010;20:246-51.

MIRTAZAPINE TREATMENT FOR COMORBID ANXIETY/DEPRESSIVE DISORDERS IN YOUNG SUBJECTS WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER: CASE SERIES.

Coskun M, Ahmetoglu E, Ozturk M.

Objective: To investigate the efficacy and tolerability of mirtazapine combination with methylphenidate in young subjects with diagnosis of attention deficit hyperactivity disorder (ADHD) and comorbid anxiety or depressive disorders.

Method: Subjects with DSM-IV diagnosis of ADHD and comorbid anxiety or depressive disorders were added mirtazapine 7.5 or 15 mg/day initially to treat anxiety or depressive disorders as well as to counteract or avoid methylphenidate or SSRIs related side effects. Improvement in target symptoms were assessed using relevant scales and the Clinical Global Impression- improvement (CGI-I) scale.

Results: Subjects were four boys and three girls (11.85(plus or minus)2.91 years). Duration of methylphenidate and mirtazapine treatment was 14.28(plus or minus)9.41 and 3.71(plus or minus)0.95 months respectively. Final dose of mirtazapine was 16(plus or minus)2.64 mg/day. All subjects showed moderate to very much improvement in sleep and three subjects showed much improvement in appetite problems on CGI-I scale. Six subjects showed mild to very much improvement in anxiety disorders /symptoms and one subject showed much improvement in depression on CGI-I scale. Mirtazapine was generally tolerated well. Most frequently reported side effects were increased appetite (n=5), weight gain (n=4; 1000-4000 gm; 1357.14(plus or minus)1546.88 gm); day time sedation (n=4) and irritability (n=2).

Conclusions: Young subjects with diagnosis of ADHD and comorbid anxiety or depressive disorders may benefit from mirtazapine addition particularly in the presence of methylphenidate or SSRIs related sleep and/or appetite problems.

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Child & Family Behavior Therapy. 2010 Jul;32:231-41.

ADHD SYMPTOM SEVERITY FOLLOWING PARTICIPATION IN A PILOT, 10-WEEK, MANUALIZED, FAMILY-BASED BEHAVIORAL INTERVENTION.

Curtis DF.

This investigation examined the effectiveness of a pilot, manualized 10-week intervention of family skills training for ADHD-related symptoms. The intervention combined behavioral parent training and child focused behavioral activation therapy. Participants were families with children ages 7-10 diagnosed with ADHD-Combined Type. This pilot investigation employed a single group, A-B research design comparing posttreatment behavioral symptoms to baseline functioning. Intervention effectiveness was analyzed using paired-samples t tests. Results indicated statistically significant improvements for behavioral symptoms from Time 1 to Time 2 with large main effects for the intervention. Further, intervention effects reduced symptoms below a level of clinical significance and greater than one standard deviation from baseline severity. Implications of combining behavioral activation training for children with ADHD and parent

management training are discussed as well as the relevance of these results for improving the effectiveness and portability of empirically supported interventions.

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Scandinavian Journal of Caring Sciences. 2010 Sep;24:541-47.

HIGH SENSE OF COHERENCE IN ADOLESCENCE IS A PROTECTIVE FACTOR IN THE LONGITUDINAL DEVELOPMENT OF ADHD SYMPTOMS.

Edbom T, Malmberg K, Lichtenstein P, et al.

The key feature of salutogenesis is that good health can be directly sustained by positive factors. The Sense of Coherence (SOC) scale was developed by Antonovsky as a measure related to the concept of salutogenesis including aspects of comprehensibility, manageability and meaningfulness.

Aim: The aim was to investigate whether Sense of Coherence can serve as a salutogenetic factor modifying the long-term development of Attention Deficit Hyperactivity Disorder (ADHD) Symptoms.

Subjects and methods: Twin study of Child and Adolescent Development (TCHAD) is a longitudinal study of all twin pairs born in Sweden between May 1985 and December 1986. The present project is a sub-sample of 312 individuals (135 boys and 177 girls). At 16 years of age, the young persons and their parents were interviewed with K-SADS especially symptoms of ADHD. The young person also completed the SOC questionnaire. At 21 years of age, the young persons completed a questionnaire about symptoms of ADHD.

Findings: Higher (worse) ADHD scores at 16 years of age were associated with higher (worse) ADHD scores at 21 years of age. However, this relationship was stronger for lower (worse) SOC. A higher (better) SOC at 16 years was associated with lower (better) ADHD at 21 years and this relationship was stronger for higher (worse) ADHD at 16 years.

Conclusion: A high Sense of Coherence in adolescence was a protective factor for the long-term development of ADHD.

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Journal of Learning Disabilities. 2010 Sep;43:430-40.

DO LOW-EFFORT LEARNING STRATEGIES MEDIATE IMPAIRED MEMORY IN ADHD?

Egeland J, Johansen SN, Ueland T.

As a group, participants with attention-deficit/hyperactivity disorder (ADHD) are impaired in academic performance and learning. This may be due to a mild intellectual impairment, impaired attention, or inability to allocate sufficient effort. If the latter is the case, this should be evident in the learning strategies applied. Four indices of learning strategy, considered to measure degree of effort, were analyzed from 67 participants with ADHD and 67 age-matched normal controls between 9 and 16 years of age. The participants with ADHD were impaired with regard to semantic clustering, retroactive interference, and percentage items reported from the middle section of the list even when controlling for IQ and comorbid conduct or oppositional defiant disorders symptoms. In addition, participants with combined ADHD (ADHD-C) did not display the normal proactive interference effect. The four effort indices explained 39% and 35% of the variance in free recall among participants with inattentive ADHD (ADHD-I) and ADHD-C, respectively. IQ was still significant when the effect of strategy measures were accounted for, whereas diagnosis was no longer significant when entered into the regression analysis after the effort indices. The study shows that participants with ADHD employ less effortful learning strategies than healthy controls and that low effort to a large degree can account for diagnosis related variance in memory performance.

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Pediatr Neurol. 2010;43:341-47.

ATOMOXETINE FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER IN MENTAL RETARDATION.

Fernandez-Jaen A, Fernandez-Mayoralas DM, Calleja Perez B, et al.

The study objective was to assess the efficacy and tolerability of atomoxetine in the treatment of attention deficit hyperactivity disorder symptoms in patients with mental retardation. In a 16-week, open-label, prospective study, 48 children with mental retardation and attention deficit hyperactivity disorder were recruited; the patients received atomoxetine, with a single final dose of 1.2 mg/kg per day reached at 3 weeks. The measure of efficacy was scores on Clinical Global Impression Severity scale (CGI-S), Conners, and Attention Deficit Hyperactivity Disorder Rating Scale ADHDRS-IV. A statistically significant difference was documented between the mean CGI-S scores before and after treatment: baseline CGI-S = 5.31 (S.D. = 0.85); post-treatment CGI-S = 4.13 (S.D. = 0.97), with a difference of 1.18 points (S.D. = 0.84) and a 95% confidence interval for the difference of 0.92-1.43 (P < 0.001). A statistically significant reduction (P < 0.01) was observed with respect to all the variables of the ADHDRS-IV and Conners scales. Slightly less than one third of the patients (31%) presented adverse events, the majority of which were mild, with irritability being the most frequent event. Atomoxetine appears to be to useful in improving attention deficit hyperactivity disorder symptoms in mentally retarded patients. Larger, randomized, controlled, double-blind studies are required to confirm the efficacy observed in this first study.

CNS Spectr. 2010;15:559-68.

CLINICAL RESPONSE AND SYMPTOMATIC REMISSION IN CHILDREN TREATED WITH LISDEXAMFETAMINE DIMESYLATE FOR ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

Findling RL, Adeyi B, Chen G, et al.

Objective: To examine clinical response and symptomatic remission in two studies of lisdexamfetamine dimesylate (LDX) in children with attention-deficit/hyperactivity disorder (ADHD).

Methods: In a 4-week, placebo-controlled, double-blind trial, children 6-12 years of age with ADHD received LDX (30-70 mg/day) or placebo. In an open-label trial, children from previous studies were titrated to optimal dose over 4 weeks and maintained up to 1 year. Primary and secondary efficacy assessments were the ADHD Rating Scale IV (ADHD-RS-IV) and Clinical Global Impressions-Improvement (CGI-I) scale, respectively. Clinical response was defined as (greater-than or equal to)30% reduction in ADHD-RS-IV total score with a CGI-I rating of 1 or 2; symptomatic remission was defined by ADHD-RS-IV total score (less-than or equal to)18.

Results: In the 4-week study (N=285), at any postdose assessment, 79.3% achieved response (median 13 days) and 67.1% achieved remission (median 22 days) with LDX versus 29.2% and 23.6% with placebo. In the long-term study (N=251), at any postdose assessment, 96.0% responded and 62.7% maintained response; 88.8% achieved remission and 46.4% maintained remission.

Conclusion: Most children treated with LDX achieved clinical response and symptomatic remission at one time point; once achieved, almost half maintained remission.

Clin EEG Neurosci. 2010;41:178-83.

EEG ALPHA ASYMMETRY IN SCHIZOPHRENIA, DEPRESSION, PTSD, PANIC DISORDER, ADHD AND CONDUCT DISORDER.

Gordon E, Palmer DM, Cooper N.

Models of laterality infer distinct aspects of EEG alpha asymmetry in clinical disorders, which has been replicated for over three decades. This biomarker now requires a more fine-grained assessment of its clinical utility as a diagnostic and treatment predictive marker. Here, within the same study we assessed resting brain laterality across six clinical disorders, for which deviant laterality has been implicated as core dysfunction. These disorders were evaluated in comparison to a large normative dataset (~1,900) from the

Brain Resource International Database. EEG alpha asymmetry was assessed in the frontocentral region, for resting Eyes Closed and Eyes Open conditions. Schizophrenia was characterized by significantly greater left lateralized alpha power than controls, indicating a deficit in left frontal activity at rest, which may relate to "disconnections" across wider fronto-temporal networks. The depression group showed a trend-level tendency towards the opposite pattern of greater right-lateralized activity than controls. The remaining anxiety and behavioral disorders did not show any significant deviance in alpha asymmetry from the normative control group. However, at a non-significant level laterality for these groups was generally consistent with expected directions, suggesting a propensity towards a particular lateralization but still remaining within the normative range. Overall, the results of the current study indicate that EEG alpha asymmetry may show the most clinical utility as a biomarker for schizophrenia and depression in comparison to other clinical disorders.

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Journal of Applied Behavior Analysis. 2010;43:547-51.

USE OF PEER-MEDIATED INTERVENTION IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Grauvogel-MacAaleese AN, Wallace MD.

The present experiment extended and replicated the use of functional analysis and a peer-mediated intervention to decrease disruptive behavior displayed by children diagnosed with attention deficit hyperactivity disorder in an afterschool program. After determining that the participants displayed off-task behavior maintained by peer attention via a functional analysis, peer-implemented differential reinforcement of other behavior with extinction was effective in reducing participants' off-task behaviors. The use of peers as behavior-change agents is discussed, as are avenues for future research.

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International Journal of Mental Health and Addiction. 2010 Oct;8:595-607.

DEPRESSION AND ANXIETY AS POSSIBLE MEDIATORS OF THE ASSOCIATION BETWEEN SMOKING AND ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Grunau GL, Ratner PA, Hossain S, et al.

The objective of this study was to investigate the association between depression and anxiety and adolescents' smoking status, and to determine whether depression or anxiety mediate the association between Attention Deficit Hyperactivity Disorder (ADHD) and smoking. A cross-sectional survey of tobacco use was conducted in regional school districts located outside the Greater Vancouver area of British Columbia, Canada. The sample included 6,943 students. Having taken medications for depression, anxiety, or ADHD; ethnicity/race; and parental, peer, and sibling smoking status were significantly associated with smoking status. ADHD was significantly associated with depression and anxiety. In multivariate analysis, although depression/anxiety and ADHD were found to be significant correlates of regular smoking when each variable was independently included in a multinomial logistic regression model, ADHD did not remain significant when it was included with depression/anxiety. Depression and anxiety may mediate the relationship between ADHD and smoking.

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Personality and Individual Differences. 2010 Oct;49:651-54.

THE RELATIONSHIP OF COMPLIANCE WITH INATTENTION AND HYPERACTIVITY/IMPULSIVITY.

Gudjonsson GH, Sigurdsson JF.

The aim of the study was to investigate the relationship between Attention Deficit Hyperactivity Disorder (ADHD) inattention and hyperactivity/impulsivity symptoms in predicting compliance. It was hypothesised that inattention symptoms are a better predictor of compliance than hyperactivity/impulsivity. There were

two different groups of participants: 367 college students (both males and females) and 89 male prisoners. All participants had completed the Gudjonsson Compliance Scale (GCS) and the DSM-IV-TR (Screening) Checklist for adult ADHD symptoms. Significant correlations emerged between compliance and ADHD symptoms, but the correlations were higher for inattention than hyperactivity/impulsivity among both samples. This was confirmed by multiple regression analyses (hierarchical), which showed that the variance in compliance explained by ADHD inattention versus hyperactivity/impulsivity symptoms increased from 2% to 8% for college students and 8% to 24% for prisoners after entering inattention into the model (hyperactivity/impulsivity was entered first in the regression models). The findings suggest that inattention is a more powerful predictor of compliance than hyperactivity/impulsivity. This is a novel and an important finding.

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Klin Psikofarmakol Bul. 2010;20:50-56.

Prevalence of attention deficit hyperactivity disorder and comorbid disruptive behavior disorders among school age children in Trabzon.

Gul N, Tiryaki A, Cengel Kultur SE, et al.

Objective: The aim of this study is to determine the prevalence of Attention Deficit Hyperactivity Disorder (ADHD) and co-morbid Disruptive Behavior Disorders (DBDs) in a sample of primary school children in Trabzon, Turkey.

Method: Primary school children aged 6-12 years (n=1126) were assessed for the DSM-IV criteria of ADHD and co-morbid DBDs using Turgay's DSM-IV based ADHD and disruptive behavior disorders screening scale.

Results: The prevalence of ADHD was 8.6% (n=97) and the subtypes were predominantly inattentive 1.6% (n=18), predominantly hyperactive/impulsive 6.1% (n=69) and combined 0.9% (n=10) respectively. The male to female ratio was 3.5/1 for ADHD (all subtypes). The prevalence of other DBDs in the study sample was 18.6% (n=209). The cases were distributed as Oppositional Defiant Disorder (ODD) 14.1% (n=159) and Conduct Disorder (CD) 4.4% (n=50) respectively. The frequency of ODD among ADHD cases was 57.5% (n=56) and that of CD was 20.6% (n=20).

Conclusions: It was supported that ADHD did not show significant differences among cultures regarding its prevalence, male predominance and high DBD co-morbidity. On the other hand, the ADHD subtype distribution differed from the literature in favor of the predominantly hyperactive/impulsive subtype. This may be related to cultural differences in attitudes toward child and expectations and patterns related to age and situation appropriate behaviors and should be further investigated in Turkey.

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Arch Gen Psychiatry. 2010 Oct;67:1033-43.

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER SYMPTOMS IN OFFSPRING OF MOTHERS WITH IMPAIRED SEROTONIN PRODUCTION.

Halmoy A, Johansson S, Winge I, et al.

CONTEXT: Exposure to adverse events during prenatal and postnatal development, as well as serotonin deficiency, have been implicated in disturbances of mood and impulsivity, but the underlying mechanisms are unknown.

OBJECTIVE: To investigate the long-term effects of an impaired serotonin synthesis on the developing human brain, we studied the effects of nonsynonymous mutations affecting tryptophan hydroxylase (TPH) enzymes responsible for serotonin production in maternal reproductive tissues (TPH1) and the brain (TPH2).

DESIGN: Family-based case-control and functional studies of candidate genes.

SETTING: Adult outpatients with attention-deficit/hyperactivity disorder (ADHD), their family members, and random control subjects were recruited across Norway.

PARTICIPANTS: Nine pedigrees with TPH1 and TPH2 mutation carriers were identified among 459 patients with ADHD and 187 controls. The TPH genes were then sequenced in 97 additional family members, and information about psychiatric diagnoses and symptoms was obtained from 606 controls, the 459 patients, and their relatives.

MAIN OUTCOME MEASURES: The effects of maternal vs paternal TPH1 mutations compared in all families.

RESULTS: Nine different TPH1 and TPH2 mutations were found by sequencing in 646 individuals (1.0% and 0.2% allele frequency, respectively). In vitro studies showed that 8 TPH mutants had significantly impaired enzyme function. Family analysis of 38 TPH1 mutation carriers and 41 of their offspring revealed that offspring of mothers carrying TPH1 mutations reported 1.5- to 2.5-times-higher ADHD scores and related symptoms during childhood and as adults than did controls ($P < 10^{-6}$) or offspring of fathers with the corresponding TPH1 mutations ($P < .001$).

CONCLUSIONS: Impaired maternal serotonin production may have long-term consequences for brain development and increase the risk of ADHD-related symptoms and behavior in offspring. Replication studies are required to form conclusions about the clinical implications of mutations affecting serotonin biosynthesis.

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Pharmacoepidemiol Drug Saf. 2010;19:934-41.

CARDIOVASCULAR SAFETY OF ADHD MEDICATIONS: RATIONALE FOR AND DESIGN OF AN INVESTIGATOR-INITIATED OBSERVATIONAL STUDY.

Hennessy S, Schelleman H, Daniel GW, et al.

Purpose: To describe the design and rationale of an investigator-initiated observational study to examine the cardiovascular safety of the following commonly-used medications to treat attention deficit hyperactivity disorder (ADHD): amphetamines, methylphenidate, and atomoxetine.

Methods: We are conducting an observational cohort study using data from five large Medicaid programs and the HealthCore Integrated Research Database (HIRDSM), which is derived from administrative data from commercial health plans. Our primary outcomes of interest are (1) sudden death/ventricular arrhythmia, (2) stroke, (3) myocardial infarction, and (4) stroke or myocardial infarction as a composite outcome. These claims diagnoses have been previously validated in adults, and the positive predictive value in children will be examined as part of this study. Secondary outcomes are (1) all-cause death, (2) non-suicide death, and (3) non-accident death. All design decisions have been made to minimize bias toward the null. Based on our pilot data, we expect to have at least 90% power to detect a minimum detectable hazard ratio (HR) of 3.0 in children and adolescents who initiate an ADHD medication for each outcome of interest (except for MI, for which the expected minimum detectable HR is 7.9). The expected minimum detectable HR is 1.7 for each outcome for adult incident ADHD medication users.

Results: Forthcoming.

Conclusions: Potential limitations to this study include a low expected event rate in children and adolescents, potentially incomplete ascertainment of outcomes, and potential confounding by unmeasured variables. Nevertheless, this study will provide important information about the cardiovascular safety of ADHD medications.

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J Am Acad Child Adolesc Psychiatry. 2010;49:1053-63.

INFANT BRAIN DEVELOPMENT AND VULNERABILITY TO LATER INTERNALIZING DIFFICULTIES: THE GENERATION R STUDY.

Herba CM, Roza SJ, Govaert P, et al.

Objective Although clinical studies have demonstrated smaller subcortical volumes in structures such as the amygdala, hippocampus, caudate nucleus, and thalamus in adults and adolescents with depressive

disorders and anxiety, no study has assessed such structures in babies, long before the development of the disorders. This study examined whether the size of the "gangliothalamic ovoid" (encompassing the basal ganglia and thalamus) assessed during infancy is associated with increased internalizing problems in early childhood.

Method Cranial ultrasounds were used to assess gangliothalamic ovoid diameter and ventricular volume at 6 weeks of postnatal age; moreover, head circumference was measured. Outcome data included ratings of internalizing and externalizing problems using the Child Behavior Checklist (reported by mothers and fathers) at 18 and/or 36 months. Analyses were based on a total of 651 children. Results Smaller gangliothalamic diameter was associated with higher Child Behavior Checklist Internalizing scores at ages 18 and 36 months.

Results Remained significant after correcting for head circumference and were evident for the DSM-oriented subscales of anxiety problems and affective problems. Total ventricular volume was not consistently associated with Internalizing scores.

Conclusions Findings associating infant brain measurements with Child Behavior Checklist mother and father reports at two time points are consistent with previous cross-sectional reports of smaller subcortical volumes in depression. Results were not simply reflective of overall brain development, because the pattern held after adjustment for head circumference. This is the first study to point toward a biological vulnerability evident in infancy, involved in the development of internalizing problems in childhood.

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Psychiatr Invest. 2010;7:177-88.

IMPAIRMENT OF CONCEPT FORMATION ABILITY IN CHILDREN WITH ADHD: COMPARISONS BETWEEN LOWER GRADES AND HIGHER GRADES.

Hong HJ, Lee JB, Kim JS, et al.

Objective: We investigated executive functions (EFs), as evaluated by the Wisconsin Card Sorting Test (WCST), and other EF between lower grades (LG) and higher grades (HG) in elementary-school-age attention deficit hyperactivity disorder (ADHD) children.

Methods: We classified a sample of 112 ADHD children into 4 groups (composed of 28 each) based on age (LG vs. HG) and WCST performance [lower vs. higher performance on WCST, defined by the number of completed categories (CC)] Participants in each group were matched according to age, gender, ADHD subtype, and intelligence. We used the Wechsler intelligence Scale for Children 3rd edition to test intelligence and the Computerized Neurocognitive Function Test-IV, which included the WCST, to test EF.

Results: Comparisons of EFs scores in LG ADHD children showed statistically significant differences in performing digit spans backward, some verbal learning scores, including all memory scores, and Stroop test scores. However, comparisons of EF scores in HG ADHD children did not show any statistically significant differences. Correlation analyses of the CC and EF variables and stepwise multiple regression analysis in LG ADHD children showed a combination of the backward form of the Digit span test and Visual span test in lower-performance ADHD participants significantly predicted the number of CC ($R^2=0.273$, $p<0.001$).

Conclusion: This study suggests that the design of any battery of neuropsychological tests for measuring EF in ADHD children should first consider age before interpreting developmental variations and neuropsychological test results. Researchers should consider the dynamics of relationships within EF, as measured by neuropsychological tests.

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J Epidemiol Community Health. 2010;64:82-88.

SMOKING IN PREGNANCY AND DISRUPTIVE BEHAVIOUR IN 3-YEAR-OLD BOYS AND GIRLS: AN ANALYSIS OF THE UK MILLENNIUM COHORT STUDY.

Hutchinson J, Pickett KE, Green J, et al.

Background: Maternal smoking during pregnancy has been consistently associated with disruptive behaviour in male offspring; however, results for girls are inconsistent and little is known about emergent patterns in young children. Additionally, it is unclear whether maternal smoking is independently associated in offspring with hyperactivity-inattention or only when it co-occurs with conduct problems. Further, few studies have controlled for a broad range of maternal psychosocial problems.

Methods: Associations between self-reported smoking in pregnancy and maternal reports of externalising behaviour were analysed in more than 13 000 3-year-old boys and girls in the UK Millennium Cohort Study. Conduct and hyperactivity-inattention problems were assessed using the Strength and Difficulties Questionnaire.

Results: Boys whose mothers persistently smoked throughout pregnancy were at significant risk of conduct and hyperactivity-inattention problems compared with sons of non-smokers: the effect was stronger for heavy smokers. After excluding children with co-occurring problems, conduct-only problems remained a significant risk for sons of heavy smokers, OR 1.92 (95% CI 1.29 to 2.86); and hyperactivity-inattention only for sons of light or heavy smokers, OR 1.79 (95% CI 1.27 to 2.51) and 1.64 (1.10 to 2.46). Daughters of light or heavy smokers were at significant risk of conduct-only problems, OR 1.73 (95% CI 1.14 to 2.61) and 1.73 (1.06 to 2.83). Relative to non-smokers, daughters of pregnancy quitters had significantly reduced odds of having conduct 0.61(0.39 to 0.97) or co-occurring problems 0.26(0.08 to 0.82), although only 79 and 20 girls met these criteria, respectively. All findings were robust to controlling for key social and psychosocial factors.

Conclusions: Associations between maternal smoking during pregnancy and disruptive behaviour in 3-year-old children vary by sex, smoking status and whether or not conduct or hyperactivity problems occur together or separately.

Child & Family Behavior Therapy. 2010 Jul;32:177-95.

DAILY BEHAVIOR REPORT CARDS WITH AND WITHOUT HOME-BASED CONSEQUENCES: IMPROVING CLASSROOM BEHAVIOR IN LOW INCOME, AFRICAN AMERICAN CHILDREN WITH ADHD.

Jurbergs N, Palcic JL, Kelley ML.

Daily Behavior Report Cards (DBRC), which typically require teachers to evaluate students' daily behavior and parents to provide contingent consequences, are an effective and acceptable method for improving children's classroom behavior. The current study evaluated whether parent involvement is an essential treatment component or whether teacher feedback alone would be sufficient to produce children's behavior changes. The effectiveness of DBRC with teacher feedback to students and parent delivered consequences (PC) was compared to teacher feedback to students only (no parent delivered consequences, NPC) for increasing appropriate classroom behavior and academic productivity in African American, low income, elementary school children with Attention-Deficit/Hyperactivity Disorder (ADHD). Both treatments led to increased on-task behavior, although PC was superior to NPC. Academic productivity outcomes are less clear. Treatment implications and future directions for research on teacher feedback interventions are discussed.

Expert Rev Neurother. 2010;10:1581-94.

AGGRESSION IN CHILDREN WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

King S, Waschbusch DA.

Research shows that aggression is an important associated feature of attention-deficit/hyperactivity disorder (ADHD) and is important in understanding the impact of the disorder and its treatment. The occurrence of aggressive behavior in combination with ADHD does not appear to be spurious and the severity and/or presence of aggression and ADHD may significantly impact long-term prognosis. This article defines subtypes of aggression in relation to ADHD, identifies individual differences contributing to aggressive behavior in children with ADHD and discusses selected possible underlying mechanisms of aggression in ADHD, as well as current and emerging treatment approaches. Although aggressive behavior in children with ADHD is common, the reasons for this are not yet well understood. Multidisciplinary research should focus on investigating underlying mechanisms related to aggression in ADHD, as well as the utility of various treatment modalities.

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Psychiatry Research: Neuroimaging. 2010 Sep;183:230-36.

STRUCTURAL AND FUNCTIONAL IMAGING APPROACHES IN ATTENTION DEFICIT/HYPERACTIVITY DISORDER: DOES THE TEMPORAL LOBE PLAY A KEY ROLE?

Kobel M, Bechtel N, Specht K, et al.

Attention deficit/hyperactivity disorder (ADHD) is characterized by widespread structural and functional abnormalities in the brain. We applied different structural imaging techniques such as voxel-based morphometry (VBM), diffusion tensor imaging (DTI), and magnetization transfer imaging (MTI) to study anatomical differences between boys with ADHD and healthy controls, as well as functional magnetic resonance imaging (fMRI) together with independent component analysis (ICA) to detect functional alterations. 14 boys with ADHD and 12 controls were included in our study. Results of DTI showed the expected differences in frontal and cerebellar white matter. VBM and MTI indicated group differences in the temporal lobe. Applying ICA to fMRI data, we extracted four components; two positively correlated to our working memory paradigm and two negatively correlated. Positive components included activation in frontal and parietal regions. Negative components showed activation in anterior and posterior cingulate cortex/precuneus and temporal regions, and were interpreted as forming part of the default mode network. Group differences in the inferior temporal lobe were detected. Applying different techniques, we found differences between boys with ADHD and controls mainly located in the temporal lobe. Therefore, we postulate that research on ADHD should broaden its scope by including the temporal lobe as a potentially important locus of abnormalities in ADHD.

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Hong Kong Med J. 2010;16:257-64.

EARLY ADOLESCENT OUTCOME OF ATTENTION-DEFICIT HYPERACTIVITY DISORDER IN A CHINESE POPULATION: 5-YEAR FOLLOW-UP STUDY.

Lam AKS, Ho TP.

Objective: To examine early adolescent outcome of attention-deficit hyperactivity disorder in local Chinese children.

Design: Cohort study.

Setting: A university teaching hospital in Hong Kong.

Participants: A cohort of Chinese children with attention-deficit hyperactivity disorder diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders (4th edition) who attended a day hospital between January 1998 and December 2003.

Main outcome measures: Data on psychopathology, academic attainment, delinquency, substance use, and other psychosocial functioning collected from multiple informants and official records. Performances of subjects were compared with a group of community controls.

Results: A total of 150 children with attention-deficit hyperactivity disorder were reassessed 6 years after initial intake assessment (mean age, 14 years; follow-up rate, 86%). Compared with the controls, their externalising and internalising disturbances were 4 and 1.5 times more common, respectively. Adolescents with attention-deficit hyperactivity disorder were more likely to smoke cigarettes and use illicit drugs. Their academic attainment was below age norms with more than one fourth repeating grades; 7% of them had been arrested by the police compared with none of the controls. They faced more difficulties in the family environment and social problem-solving. There were discrepancies between parent and patient reports about their attention-deficit hyperactivity disorder symptoms, and officially recorded youth reports of delinquency.

Conclusion: Local Chinese children with attention-deficit hyperactivity disorder are at significant risk of multiple forms of adolescent maladjustment. Their outcome profile is similar to that reported in the West.

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Res Dev Disabil. 2010;31:1197-203.

THE CHARACTERISTICS OF AD/HD SYMPTOMS, SELF-ESTEEM, AND AGGRESSION AMONG SERIOUS JUVENILE OFFENDERS IN JAPAN.

Matsuura N, Hashimoto T, Toichi M.

Eighty-three inmates of a correctional facility, who committed serious offences, participated in this study. They were all male and aged 14-17 years, with a mean age of 15.5 (SD = 1.21) years. Eighty-six age- and sex-matched controls were enrolled. Some psychological questionnaires such as on self-esteem and aggression were conducted in both groups. The aims of the present study were as follows: first, to clarify the characteristics of the subjects, such as IQ, psychological traits, and AD/HD symptoms; second, to examine how the subjects' self-esteem and aggression changed and/or improved on admission and at the time of parole (during the correctional educational period). For the results of paired t-tests, the self-esteem of subjects changed little. Therefore, our findings suggest that the improvement of antisocial behavior and transition of self-esteem are not directly linked with each other. Most inmates of the correctional facility showed a borderline IQ, markedly low self-esteem, unstable aggression, and serious AD/HD symptoms. In addition, the low self-esteem of subjects was not consistently elevated during the correctional education period. Moreover, their aggression was strongly correlated with AD/HD symptoms, both on admission and at the time of parole.

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Int J Dev Neurosci.

THREE PHASES OF DiGEORGE/22Q11 DELETION SYNDROME PATHOGENESIS DURING BRAIN DEVELOPMENT: PATTERNING, PROLIFERATION, AND MITOCHONDRIAL FUNCTIONS OF 22Q11 GENES.

Meechan DW, Maynard TM, Tucker ES, et al.

DiGeorge, or 22q11 deletion syndrome (22q11DS), the most common survivable human genetic deletion disorder, is caused by deletion of a minimum of 32 contiguous genes on human chromosome 22, and presumably results from diminished dosage of one, some, or all of these genes-particularly during development. Nevertheless, the normal functions of 22q11 genes in the embryo or neonate, and their contribution to developmental pathogenesis that must underlie 22q11DS are not well understood. Our data suggests that a substantial number of 22q11 genes act specifically and in concert to mediate early morphogenetic interactions and subsequent cellular differentiation at phenotypically compromised sites-the limbs, heart, face and forebrain. When dosage of a broad set of these genes is diminished, early morphogenesis is altered, and initial 22q11DS phenotypes are established. Thereafter, functionally similar subsets of 22q11 genes-especially those that influence the cell cycle or mitochondrial function-remain

expressed, particularly in the developing cerebral cortex, to regulate neurogenesis and synaptic development. When dosage of these genes is diminished, numbers, placement and connectivity of neurons and circuits essential for normal behavior may be disrupted. Such disruptions likely contribute to vulnerability for schizophrenia, autism, or attention deficit/hyperactivity disorder seen in most 22q11DS patients.

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J Nerv Ment Dis. 2010;198:672-78.

PRENATAL EXPOSURE TO MATERNAL AND PATERNAL SMOKING ON ATTENTION DEFICIT HYPERACTIVITY DISORDERS SYMPTOMS AND DIAGNOSIS IN OFFSPRING.

Nomura Y, Marks DJ, Halperin JM.

The study examined the effect of maternal and paternal smoking during pregnancy on the child's inattention and hyperactivity/impulsivity symptoms, and the risk for attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD). Generalized estimating equations, incorporating data from multiple informants (parents and teachers), was used to evaluate levels of ADHD as a function of parental smoking. The risk for ADHD, ODD, and comorbid ADHD and ODD was evaluated using polytomous logistic regression. We found that maternal, but not paternal, smoking was significantly associated with elevated inattention, hyperactivity/impulsivity, and total ADHD symptoms in children. Children of smoking, relative to nonsmoking, mothers had a significant increased risk for comorbid ADHD and ODD and ADHD, but not ODD. Although father's smoking was not associated with an increased risk, as it strongly influenced mothers' smoking, intervention for both parents may be most effective in preventing the pathway to ADHD-related problems in the children.

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Klin Psikofarmakol Bul. 2010;20:125-31.

CONTRIBUTION OF TEACHING AN INTERPERSONAL COGNITIVE PROBLEM-SOLVING STRATEGY TO CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER TREATED WITH A PSYCHOSTIMULANT DRUG.

Ozcan CT, Oflaz F, Durukan I.

Objective: This study was performed to evaluate the effects of the "I Can Solve the Problem" training program based on "Interpersonal Cognitive Problem-Solving Strategy (ICPS)" in children with attention deficit hyperactivity disorder (ADHD) treated with a psychostimulant drug.

Method: The sample consisted of 8 children with ADHD who ranged from 7 to 10 years. The study was semi-experimentally designed as pre and post test with one group. The Child Behavior Checklist for Ages 6-18 (Teacher Report Form: TRF/6-18) and the DSM-IV Based Disruptive Behavior Disorders Screening and Rating Scale (parent and teacher forms) were used in order to evaluate the efficacy of the program. The ICPS program was performed to 8 children with ADHD during 14 weeks. After that, the scales were given to all the subjects.

Results: The problems of "oppositional defiant", "attention", "hyperactivity" problems, "anxious/depressed", "withdrawn/depressed", "rule breaking behavior", and "aggressive behaviors" were significantly decreased after the ICPS Program. The sum score subscale significantly increased and improving of "adaptive functioning profile" in TRF/6-18 were observed after the ICPS. The competence level of the children increased and the emotional and behavioral problems in children with ADHD decreased.

Conclusion: We suggest that ICPS Program make an additional contribution into children with ADHD treated with a psychostimulant drug to deal with their assumed problems.

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Klin Psikofarmakol Bul. 2010;20:38-44.

THE EFFECTS OF METHYLPHENIDATE ON TRANSCRANIAL MAGNETIC STIMULATION PARAMETERS IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Ozdag MF, Yorbik O, Durukan I, et al.

Objective: The aim of this study was to investigate transcranial magnetic stimulation (TMS) parameters in children with attention deficit hyperactivity disorder (ADHD) before and after methylphenidate (MPH) treatment.

Methods: Contralateral silent period (CSP), cervical latency (CL), resting motor threshold (RMT), and central motor conduction time (CMCT) were measured before and after MPH medication in 24 ADHD boys, aged between 7 and 13 years.

Results: MPH treatment resulted in a significant decrease in the CMCT ($p < .001$). There was no significant difference in the RMT, in the CL, and in the CSP between before MPH and under MPH treatment in ADHD subjects. In addition, there was a moderate but significant negative correlation between age and the RMT (Pearson correlation = $-.47$; $p = .03$), but not with other TMS parameters ($p > .05$).

Conclusions: The central motor conduction time (CMCT) includes the times of excitation, information processing of cortical cells, and axonal conduction time via corticospinal tract. Since MPH can not affect the axonal myelination such a short time, and since MPH did not affect CL, we speculate that the decrease in the CMCT may be imputed to increased information processing of cortical cells following MPH administration. Although previous studies suggested that information processing may be increased by MPH, further studies are warranted investigating relationship between information processing and CMCT under the effect of MPH effect.

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Neuropsychopharmacology. 2010;35:2414-26.

DAT1 AND COMT EFFECTS ON DELAY DISCOUNTING AND TRAIT IMPULSIVITY IN MALE ADOLESCENTS WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER AND HEALTHY CONTROLS.

Paloyelis Y, Asherson P, Mehta MA, et al.

Choice impulsivity has been linked to dopamine function and is consistently observed in attention deficit/hyperactivity disorder (ADHD) as a preference for smaller-immediate over larger-delayed rewards using choice-delay paradigms. More sophisticated delay discounting paradigms have yielded inconsistent results. Context and sample characteristics may have contributed to these variations. In this study we examine the effect of type (real vs hypothetical) and magnitude of reward as well as of variation in dopamine genes on choice impulsivity. We selected 36 male adolescents with ADHD-combined subtype (ADHD-CT) and 32 controls (mean age 15.42, SD 2.05) to form four roughly equally sized subgroups on the basis of DAT1 10/6 haplotype dosage (2 copies and 2 copies). Participants, who were also genotyped for the COMT Val158Met and DRD4 48bpVNTR polymorphisms, performed a hypothetical and a real-time discounting task and provided self-ratings of trait impulsivity. The ADHD-CT group discounted rewards more steeply than controls only in the hypothetical task, with delay, but not reward magnitude, influencing choices. They also rated themselves as more impulsive compared with controls. DAT1 10/6 dosage and the COMT Val158Met genotype predicted trait impulsivity and discounting rates in the hypothetical task, but not in the real-time task. Our results directly link variation in genes putatively influencing dopamine signaling in the prefrontal cortex (COMT Val158Met) and the striatum (DAT1 10/6) with discounting rates in a hypothetical task (but not a real-time task) and self-ratings of trait impulsivity in ADHD-CT and healthy controls. The lack of magnitude effects in the hypothetical task suggests that discounting in this task may be influenced by different processes in ADHD-CT than in healthy controls.

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J Am Acad Child Adolesc Psychiatry. 2010;49:1064-80.

EMOTION PROCESSING INFLUENCES WORKING MEMORY CIRCUITS IN PEDIATRIC BIPOLAR DISORDER AND ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

Passarotti AM, Sweeney JA, Pavuluri MN.

Objective This functional magnetic resonance imaging (fMRI) study examined how working memory circuits are affected by face emotion processing in pediatric bipolar disorder (PBD) and attention-deficit/hyperactivity disorder (ADHD).

Methods A total of 23 patients with PBD, 14 patients with ADHD, and 19 healthy control (HC) subjects (mean age, 13.36 (plus or minus) 2.55 years) underwent an affective, two-back fMRI task with blocks of happy, angry, and neutral faces.

Results For angry versus neutral faces PBD patients, relative to ADHD patients, exhibited increased activation in the subgenual anterior cingulate cortex (ACC) and orbitofrontal cortex, and reduced activation in the dorsolateral prefrontal cortex (DLPFC) and premotor cortex. Relative to the HC group, the PBD group showed no increased activation and reduced activation at the junction of DLPFC and ventrolateral prefrontal cortex (VLPFC). Relative to HC, the ADHD patients exhibited greater activation in the DLPFC and reduced activation in the ventral and medial PFC, pregenual ACC, striatum, and temporo-parietal regions. For happy versus neutral faces, relative to the ADHD group, the PBD group exhibited greater activation in the bilateral caudate, and relative to the HC group the ADHD group showed increased activation in the DLPFC, striatal, and parietal regions, and no reduced activation. The ADHD group, compared with the HC group, showed no reduced activation and increased activation in regions that were underactive for the angry face condition.

Conclusions Relative to the ADHD group, the PBD group exhibited greater deployment of the emotion-processing circuitry and reduced deployment of working memory circuitry. Commonalities across PBD and ADHD patients, relative to the HC individuals, entailed cortico-subcortical activity that was reduced under negative emotional challenge and increased under positive emotional challenge.

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J Clin Psychopharmacol. 2010;30:554-64.

SINGLE-AND MULTIPLE-DOSE PHARMACOKINETICS OF METHYLPHENIDATE ADMINISTERED AS METHYLPHENIDATE TRANSDERMAL SYSTEM OR OSMOTIC-RELEASE ORAL SYSTEM METHYLPHENIDATE TO CHILDREN AND ADOLESCENTS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Pierce D, Katic A, Buckwalter M, et al.

This was a 1-month, multicenter, open-label, randomized study to determine single- and multiple-dose pharmacokinetics of d,l-methylphenidate (MPH) after MPH transdermal system (MTS) and osmotic-release oral system MPH (OROS MPH) dosing in children (6-12 years) and adolescents (13-17 years) who had a diagnosis of attention deficit hyperactivity disorder. The pharmacokinetic population consisted of 33 children and 31 adolescents. Accumulation of d-MPH was 34% in children and 57% in adolescents after multiple fixed doses of MTS for 7 days and 76% and 94%, respectively, after 28 days of dosing. After 7 days of OROS MPH dosing, accumulation was 16% in children and 19% in adolescents; fixed doses of OROS MPH were not studied beyond 7 days. After escalating the doses to 30 mg per 9 hours for MTS, accumulation was 73% in children and 83% in adolescents after allowing for dose escalation. Corresponding values for OROS MPH after dose escalation to 54 mg were 33% in both age groups. Plasma l-MPH concentrations were approximately half those of d-MPH for MTS and negligible for OROS MPH. Overall, MTS accumulation was above that expected for single-dose pharmacokinetics of MTS and OROS MPH in both age groups. As a result of accumulation, systemic exposure to d-MPH in children after multiple escalating doses was 1.4- to 1.6-fold higher for MTS compared with OROS MPH, but similar in adolescents for both formulations. After all dosing, systemic exposure was greater in children compared with adolescents, consistent with lower body weight in children. Adverse events were mild to moderate for both formulations, and MTS dermal responses were mild.

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Psychol Assess. 2010;22:546-58.

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER SYMPTOMS IN PRESCHOOL CHILDREN: EXAMINING PSYCHOMETRIC PROPERTIES USING ITEM RESPONSE THEORY.**Purpura DJ, Wilson SB, Lonigan CJ.**

Clear and empirically supported diagnostic symptoms are important for proper diagnosis and treatment of psychological disorders. Unfortunately, the symptoms of many disorders presented in the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000) lack sufficient psychometric evaluation. In this study, an item response theory (IRT) analysis was applied to ratings of the 18 attention-deficit/hyperactivity disorder (ADHD) symptoms in 268 preschool children. Children (55% boys, 45% girls) in this sample ranged in age from 37 to 74 months; 80.4% were identified as African American, 15.1% as Caucasian, and 4.5% as other ethnicity. Dichotomous and polytomous scoring methods for rating ADHD symptoms were compared and psychometric properties of these symptoms were calculated. Symptom-level analyses revealed that, in general, the current symptoms provided useful information in diagnosing ADHD in preschool children; however, several symptoms provided redundant information and should be examined further.

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BMC Psychiatry. 2010 Sep;10.

DATABASE ANALYSIS OF CHILDREN AND ADOLESCENTS WITH BIPOLAR DISORDER CONSUMING A MICRONUTRIENT FORMULA.**Rucklidge JJ, Gately D, Kaplan BJ.**

Background: Eleven previous reports have shown potential benefit of a 36-ingredient micronutrient formula (known as EMPowerplus) for the treatment of psychiatric symptoms. The current study asked whether children (7-18 years) with pediatric bipolar disorder (PBD) benefited from this same micronutrient formula; the impact of Attention-Deficit/Hyperactivity Disorder (ADHD) on their response was also evaluated.

Methods: Data were available from an existing database for 120 children whose parents reported a diagnosis of PBD; 79% were taking psychiatric medications that are used to treat mood disorders; 24% were also reported as ADHD. Using Last Observation Carried Forward (LOCF), data were analyzed from 3 to 6 months of micronutrient use.

Results: At LOCF, mean symptom severity of bipolar symptoms was 46% lower than baseline (effect size (ES) = 0.78) ($p < 0.001$). In terms of responder status, 46% experienced >50% improvement at LOCF, with 38% still taking psychiatric medication (52% drop from baseline) but at much lower levels (74% reduction in number of medications being used from baseline). The results were similar for those with both ADHD and PBD: a 43% decline in PBD symptoms (ES = 0.72) and 40% in ADHD symptoms (ES = 0.62). An alternative sample of children with just ADHD symptoms ($n = 41$) showed a 47% reduction in symptoms from baseline to LOCF (ES = 1.04). The duration of reductions in symptom severity suggests that benefits were not attributable to placebo/expectancy effects. Similar findings were found for younger and older children and for both sexes.

Conclusions: The data are limited by the open label nature of the study, the lack of a control group, and the inherent self-selection bias. While these data cannot establish efficacy, the results are consistent with a growing body of research suggesting that micronutrients appear to have therapeutic benefit for children with PBD with or without ADHD in the absence of significant side effects and may allow for a reduction in psychiatric medications while improving symptoms. The consistent reporting of positive changes across multiple sites and countries are substantial enough to warrant a call for randomized clinical trials using micronutrients.

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Psychiatry Clin Neurosci. 2010 Aug;64:394-402.

NEUROANATOMICAL CORRELATES OF ATTENTION-DEFICIT HYPERACTIVITY DISORDER ACCOUNTING FOR COMORBID OPPOSITIONAL DEFIANT DISORDER AND CONDUCT DISORDER.

Sasayama D, Hayashida A, Yamasue H, et al.

Aim: An increasing number of neuroimaging studies have been conducted to uncover the pathophysiology of attention-deficit–hyperactivity disorder (ADHD). The findings are inconsistent, however, at least partially due to methodological differences. In the present study voxel-based morphometry (VBM) was used to evaluate brain morphology in ADHD subjects after taking into account the confounding effect of oppositional defiant disorder (ODD) and conduct disorder (CD) comorbidity.

Methods: Eighteen children with ADHD and 17 age- and gender-matched typically developing subjects underwent high-spatial resolution magnetic resonance imaging. The regional gray matter volume differences between the children with ADHD and controls were examined with and without accounting for comorbid ODD and CD in a voxel-by-voxel manner throughout the entire brain.

Results: The VBM indicated significantly smaller regional gray matter volume in regions including the bilateral temporal polar and occipital cortices and the left amygdala in subjects with ADHD compared with controls. Significantly smaller regional gray matter volumes were demonstrated in more extensive regions including the bilateral temporal polar cortices, bilateral amygdala, right occipital cortex, right superior temporal sulcus, and left middle frontal gyrus after controlling for the confounding effect of comorbid ODD and CD.

Conclusion: Morphological abnormalities in ADHD were seen not only in the regions associated with executive functioning but also in the regions associated with social cognition. When the effect of comorbid CD and ODD was taken into account, there were more extensive regions with significantly smaller volume in ADHD compared to controls.

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Psychiatry Clin Neurosci. 2010;64:491-98.

EFFECTS OF OSMOTIC-RELEASE METHYLPHENIDATE IN ATTENTION-DEFICIT/ HYPERACTIVITY DISORDER AS MEASURED BY EVENT-RELATED POTENTIALS.

Sawada M, Iida J, Ota T, et al.

Aim: Attention-deficit/hyperactivity disorder (ADHD) is a relatively common central nervous system disorder in school-age children, which may involve a specific disorder in cognition and/or information processing. Event-related potentials (ERP) are commonly used as physiological measures of cognitive function as they are easily measured and non-invasive. Thus, in the present study, we examined the effects of osmotic-release methylphenidate (MPH) (Concerta), a common treatment for childhood attention-deficit/hyperactivity disorder (ADHD), in ADHD children as measured by ERP.

Methods: Ten ADHD children participated after giving consent. Based on the guidelines for evoked potential measurement, mismatch negativity (MMN) and P300 were obtained by auditory odd-ball tasks. We measured both MMN and P300 in the drug-naïve condition and after intake of osmotic-release MPH.

Results: The MMN amplitudes after intake of osmotic-release MPH were significantly greater than those in the drug-naïve situation at Pz and C4. The P300 amplitudes after intake of osmotic-release MPH were significantly greater than those in the drug-naïve situation at Cz and Pz.

Conclusion: MMN and P300 are sensitive tools for measuring the pharmacological effects of osmotic-release MPH in ADHD children.

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Res Dev Disabil. 2010;31:1234-39.

PARTICIPATION IN LEISURE ACTIVITIES AMONG BOYS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER.

Shimoni M, Engel-Yeger B, Tirosh E.

ADHD is a neural developmental disorder expressed in various life settings. Yet, previous studies have focused mainly on children's function in school and academic achievement. The purpose of the present study was, therefore, to examine participation patterns in outside formal school activities among boys with ADHD compared to typical boys. Participants included 25 boys aged 8-11 years with ADHD and 25 age-matched typical boys. All participants completed the Children's Assessment of Participation and Enjoyment (CAPE). Several aspects of participation were examined: diversity, intensity, enjoyment, place, and partners in 49 extra curricular activities. The findings indicate that boys with ADHD reported significant lower intensity rates of participation in most activity domains. Furthermore, boys with ADHD also reported higher diversity scores and lower enjoyment in 'formal' activities. Yet, no significant differences were found with regard to activity place and partners. These findings enhance the importance of providing therapy that refers to after school activities. Accordingly, CAPE can be useful for assessing boys with ADHD and planning appropriate intervention programs.

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Clin Neurophysiol. 2010;121:1863-70.

LINEAR AND NON-LINEAR EEG ANALYSIS OF ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER DURING A COGNITIVE TASK.

Sohn H, Kim I, Lee W, et al.

Objective: We aimed to investigate whether electroencephalograph (EEG) dynamics differ in adolescents with attention-deficit/hyperactivity disorder (ADHD) compared with healthy subjects during the performance of a cognitive task.

Methods: We recorded EEGs from 19 scalp electrodes in 11 adolescent boys with ADHD and 12 age-matched healthy boys while the subjects were at rest and during a continuous performance test (CPT). The approximate entropy (ApEn), a non-linear information-theoretic measure, was calculated to quantify the complexity of the EEGs.

Results: The mean ApEn of the ADHD patients was significantly lower than the healthy subjects over the right frontal regions (Fp2 and F8) during the performance of the cognitive task, but not at rest. The spectral analysis showed significant differences between the two groups in the P3 and T4 regions at rest and the Fp2 and F8 regions during task performance.

Conclusions: The differences in EEG complexity between the two groups suggest that cortical information processing is altered in ADHD adolescents, and thus their levels of cortical activation may be insufficient to meet the cognitive requirements of attention-demanding tasks.

Significance: This study suggests that a non-linear measure such as ApEn is useful for investigating neural dysfunctions in adolescents with ADHD.

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Res Dev Disabil. 2010;31:1426-33.

JAPANESE VERSION OF HOME FORM OF THE ADHD-RS: AN EVALUATION OF ITS RELIABILITY AND VALIDITY.

Tani I, Okada R, Ohnishi M, et al.

Using the Japanese version of home form of the ADHD-RS, this survey attempted to compare the scores between the US and Japan and examined the correlates of ADHD-RS. We collected responses from parents or rearers of 5977 children (3119 males and 2858 females) in nursery, elementary, and lower-secondary schools. A confirmed factor analysis of ADHD-RS confirmed the two-factor solution (Inattentive and Hyperactive-Impulsive) same as previous studies. ADHD-RS scores were not related to IQ, but were negatively associated with standardized achievement test scores. Males showed stronger ADHD tendencies than did the females, and the scores tended to decline as the children grew older. Japanese

children scored lower than did their US children in Hyperactive-Impulsive among all of the sex-age groups. Japanese version of home form of the ADHD-RS was developed with good reliability and validity. More researches of ADHD in Japanese children are required.

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Drug Alcohol Depend. 2010;111:262-64.

HOW ADOLESCENTS WITH SUBSTANCE USE DISORDER SPEND RESEARCH PAYMENTS.

Thurstone C, Salomensen-Sautel S, Riggs PD.

There is concern that research reimbursements to adolescents may increase substance use. However, these concerns have not been examined empirically. Participants were 70 adolescents (13-19 years) with at least one non-nicotine substance use disorder (SUD) enrolled in a 12-week clinical trial of atomoxetine/placebo for attention/deficit-hyperactivity disorder (ADHD). Adolescent participants received cash reimbursement after each study visit (maximum possible. = \$425 over 12 weeks). Participants reported each week how they spent the previous reimbursement. Results were tallied, and correlates of spending a payment on substances were examined. Results showed that 26 of 70 subjects reported spending at least one research payment on alcohol or drugs, and 25 of 70 subjects reported spending at least one payment on tobacco. Comparing those who did and did not spend a research payment on alcohol/drugs, those who did had more frequent baseline alcohol/drug use but did not differ in demographics (age, gender) or other clinical characteristics (ADHD severity, diagnosis of conduct disorder, number of SUD diagnoses, number of treatment sessions attended, or pre/post-change in number of days used substances in the past 28 days). Comparing those who did and did not spend a payment on tobacco, those who did were slightly older and had more frequent baseline tobacco use. In conclusion, a significant proportion of subjects used at least a portion of one research payment to buy alcohol, drugs or tobacco. However, there was little indication that research payments increased substance use.

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Epilepsy Behav. 2010;19:82-85.

DIFFERENTIATION OF ATTENTION-RELATED PROBLEMS IN CHILDHOOD ABSENCE EPILEPSY.

Vega C, Vestal M, DeSalvo M, et al.

The current study examined the specific types of attention-related problems children with childhood absence epilepsy (CAE) experience and the role of disease factors in the development of attention-related problems. Thirty-eight subjects with CAE and 46 healthy controls, aged 6 to 16, participated in the study. The Behavior Assessment System for Children (BASC) was completed by parents, and the Attention Problems and Hyperactivity subscales were used to characterize the problems of children with CAE. Item analysis within the subscales revealed that children with CAE demonstrate higher rates of hyperactive (overactivity and fidgetiness) and inattentive (forgetfulness and distractibility) problems, and require more supervision. Within-CAE-group analyses revealed that those who were actively having seizures were more impatient and those with a longer duration of illness were less proficient in completing homework. Children with CAE are at risk for certain inattentive and hyperactive problems, which can differ depending on duration of illness and active seizure status.

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Neuropsychologia. 2010;48:3650-56.

RIGHT FRONTO-PARIETAL DYSFUNCTION IN CHILDREN WITH ADHD AND DEVELOPMENTAL DYSLEXIA AS DETERMINED BY LINE BISECTION JUDGEMENTS.

Waldie KE, Hausmann M.

Visual line bisection is a reliable and valid laterality task that is typically used with patients with acquired brain damage to assess right hemisphere functioning. Neurologically normal individuals tend to bisect lines to the left of the objective midline whereas those with right parietal damage bisect lines to the right. In this study children with ADHD were matched with children with developmental dyslexia on IQ and gender to test the hypothesis that right hemisphere neurological abnormalities underlie the behavioural deficits observed in these two disorders. Line bisection performance was compared between groups as a function of response hand, scanning direction and line position. In contrast to results typically found with neurologically normal children, a rightward bias was found for both clinical groups, but to different degrees depending on which hand was used to bisect lines. These findings suggest pathology of the corpus callosum and/or the right fronto-parietal cortex.

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Asia-Pacific Psychiatry. 2010;2:146-50.

IMPAIRED WORKING MEMORY IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER AND THEIR SIBLINGS.

Wee KW, Yaacob MJ, Wan Abdullah WN, et al.

Introduction: Impairment of working memory in children with attention deficit hyperactivity disorder (ADHD) has been well described. If similar impairment in working memory can be demonstrated among their siblings, this could suggest impaired working memory is a genetic component of ADHD.

Methods: Fifty-seven subjects were recruited: (1) ADHD group (n=21); (2) siblings of ADHD children group (n=15); and (3) non-ADHD children with chronic medical condition as the control group (n=21). All subjects were aged between 6 and 15 years, and ADHD was diagnosed according to DSM-IV-TR. Those with other comorbidity or IQ<70 were excluded. Digit Recall was used for assessment of the phonological loop component, Maze Memory test for the visuospatial sketch pad component and Backward Digit Recall for the central executive component of working memory.

Results: ADHD children and their siblings showed similar impairment and both differed from the control group on the Maze Memory test. ADHD children also showed impairment in the Digit Recall test; however, the sibling group did not differ from the control group on this test. The Backward Digit Recall score did not show any significant difference between the three groups.

Discussion: Impairment of the visuospatial sketch pad component of working memory seems to cluster in ADHD children and their siblings. Thus, impairment of the visuospatial sketch pad component of working memory may point towards a genetic predisposition of ADHD.

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Pediatrics. 2010;126:705-11.

RACIAL DIFFERENCES IN THE EFFECTS OF POSTNATAL ENVIRONMENTAL TOBACCO SMOKE ON NEURODEVELOPMENT.

Xu X, Cook RL, Ilacqua VA, et al.

OBJECTIVES: We used the 2001-2004 National Health and Nutrition Examination Survey to examine the association between postnatal environmental tobacco smoke exposure, measured as serum cotinine levels, and attention-deficit/ hyperactivity disorder (ADHD) among children 4 to 15 years of age. We further investigated the interactions of race and serum cotinine levels with ADHD.

METHODS: Logistic regression models were used to evaluate associations.

RESULTS: This study found that the prevalence of ADHD increased as blood cotinine levels increased. The effects of blood cotinine levels on ADHD differed according to race. Compared with children of the

same racial group with the lowest blood cotinine levels, the odds ratios were 2.72 (95% confidence interval: 1.25-5.93) for Mexican American children and 5.32 (95% confidence interval: 1.55-18.3) for children in other racial groups with the highest blood cotinine levels, with controlling for the effect of maternal smoking during pregnancy. However, no significant associations between blood cotinine levels and ADHD were observed among non-Hispanic white or non-Hispanic black children.

CONCLUSIONS: The findings of this study underscore the possibility of racial disparities in the effects of environmental tobacco smoke on behavioral problems in children. These findings warrant further investigation.

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Pediatrics. 2010;126:e788-e795.

GENDER, ATTENTION-DEFICIT/HYPERACTIVITY DISORDER, AND READING DISABILITY IN A POPULATION-BASED BIRTH COHORT.

Yoshimasu K, Barbaresi WJ, Colligan RC, et al.

OBJECTIVE: To determine the incidence of reading disability (RD) among children with and without research-identified attention-deficit/ hyperactivity disorder (ADHD), separately according to gender, in a population-based birth cohort.

METHOD: Subjects included all children born in 1976 -1982 remaining in Rochester, Minnesota, after 5 years of age (n = 5718). Information from medical, school, and private tutorial records was abstracted. Cumulative incidence of RD, by any of 3 RD formulas, in children with and without ADHD and corresponding hazard ratios (HRs) were calculated separately according to gender.

RESULTS: Cumulative incidence of RD by the age of 19 years was significantly higher in children with ADHD (51% in boys, 46.7% in girls) compared with those without ADHD (14.5% in boys, 7.7% in girls). Among children with ADHD, the risk for RD was similar in boys versus girls (HR: 1.0). However, among children without ADHD, boys were 2.0 times more likely than girls to meet RD criteria. Among girls, the HR for the risk for RD associated with ADHD (versus those without ADHD) was 8.1 (95% confidence interval: 5.7-11.5), which was significantly higher than the corresponding HR among boys (3.9 [95% confidence interval: 3.2-4.9]).

CONCLUSIONS: The risk for RD is significantly greater among children with ADHD compared with those without ADHD. Among children with ADHD, the risk for RD is the same for boys and girls. However, among children without ADHD, boys are more at risk for RD than girls. Among girls, the magnitude of increased risk for RD associated with ADHD is nearly twice that among boys, because girls without ADHD are less likely to have RD than boys without ADHD.

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Brain & Development. 2010 Oct;32:739-45.

AUTISTIC REGRESSION WITH AND WITHOUT EEG ABNORMALITIES FOLLOWED BY FAVOURABLE OUTCOME.

Zappella M.

Objective: To explore the relationship between autistic regression (AR) with and without EEG abnormalities and favourable outcome.

Methods: Follow up data on children with favourable outcome in a series of 534 cases aged below 5 years and diagnosed as ASD.

Results: Cases with regression were 167 (31.8%), usually with persistent ASD, intellectual disabilities and EEG abnormalities. Thirty nine children (7.3%) went off autism and recovered entirely their intellectual and social abilities. Few of them included examples of pharmacologically treated Landau and Kleffner syndrome and other similar complex cases with abnormal EEG. The majority was represented by 36 (6.7%) children, mostly males, with a dysmaturational syndrome: their development was initially normal up to 18 months when an autistic regression occurred accompanied by the appearance of motor and vocal tics. Relational therapies were followed by rapid improvement. By 6 years all children had lost features of

ASD and their I.Q. was in most cases between 90 and 110. Convulsions were absent and EEG was normal in all cases except one. In a few of them recovery was spontaneous. Seventeen children were followed after 5 years 6 months: 12 (70%) had ADHD, 10 (56%) persistent tics. Tics were often present in parents and relatives, ASD absent, suggesting a genetic background different from cases with persistent ASD. With one exception all “off autism” children had a previous autistic regression.

Conclusions: In this series “off autism” children had either early onset epilepsy and/or EEG abnormalities or cases of dysmaturational syndrome. Autistic regression was present in almost all.

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